

[www.wallstreetsystems.com](http://www.wallstreetsystems.com)



Wall Street Systems – **Empowering** Treasury Trade and Settlement

**WALLSTREET**  
SYSTEMS

Wallstreet Suite  
**Transaction & Risk Management Module (TRM)**  
*User Guide*

Version 7.3.16



Information in this document is subject to change without notice and does not represent a commitment on the part of Wall Street Systems. The software and documentation, which includes information contained in any databases, described in this document is furnished under a license agreement or nondisclosure agreement and may only be used or copied in accordance with the terms of the agreement. It is against the law to copy the software or documentation except as specially allowed in the license or nondisclosure agreement. No part of this publication may be reproduced, stored in a retrieval system, or transmitted, in any form or by any means, electronic, mechanical, photocopying, recording, or otherwise, without the prior written permission of Wall Street Systems.

Although Wall Street Systems has tested the software and reviewed the documentation, **Wall Street Systems makes herein no warranty or representation, either expressed or implied, with respect to software or documentation, its quality, performance, marketability, or fitness for a particular purpose. As a result, this software is provided "as is", and in no event will Wall Street Systems be liable for direct, indirect, special, incidental, or consequential damages from any defect in the software or by virtue of providing this documentation**, even if advised of the possibility of such damages. The documentation may contain technical inaccuracies and omissions.

The mention of an activity or instrument in this publication does not imply that all matters relating to that activity or instrument are supported by Wallstreet Suite, nor does it imply that processing of or by that activity or instrument is carried out in any particular way, even if such processing is customary in some or all parts of the industry.

The windows and screen images shown herein were obtained from prototypes during software development. The actual windows and screen images in the software may differ.

© **Copyright 2011 Wall Street Systems IPH AB. All rights reserved.**

Second Edition (September 2011)

This edition applies to Wallstreet Suite version 7.3.16 and to all later releases and versions until indicated in new editions or Wall Street Systems communications. Make sure you are using the latest edition for the release level of the Wall Street Systems product.

Wall Street Systems, WSS, WALLSTREET, WALLSTREET SUITE and the Wall Street Systems logos are trademarks of Wall Street Systems Delaware, Inc.

Finance KIT, Trema and Trema logo are trademarks of Wall Street Systems Sweden AB.

Microsoft and Windows are either registered trademarks or trademarks of Microsoft Corporation in the United States and/or other countries.

Adobe, Acrobat, and Acrobat Reader are either registered trademarks or trademarks of Adobe Systems Incorporated in the United States and/or other countries.

All other products mentioned in this book may be trademarks or service marks of their respective companies or organizations.

Company names, people names, and data used in examples are fictitious unless otherwise noted.

# Contents

<b>Preface .....</b>	<b>21</b>
<b>1 Overview .....</b>	<b>23</b>
<b>1.1 TRM .....</b>	<b>23</b>
<b>1.2 Principles of TRM .....</b>	<b>23</b>
1.2.1 Portfolio hierarchy principle .....	23
1.2.2 Transaction flow principle .....	24
1.2.3 Cashflow principle .....	24
1.2.4 Valuation principle .....	24
1.2.5 Real-time principle .....	24
<b>1.3 Types of information in TRM .....</b>	<b>25</b>
1.3.1 Static data .....	25
1.3.2 Market data .....	25
1.3.3 Transaction management information .....	25
1.3.4 Calculated information .....	25
<b>1.4 Applications of TRM .....</b>	<b>25</b>
1.4.1 Front, Middle, and Back Office applications .....	25
1.4.2 Editors .....	26
1.4.3 Managers and Boards .....	26
1.4.4 Monitors .....	26
1.4.5 Reports .....	27
1.4.6 Activities .....	27
<b>1.5 Setting up and using TRM .....</b>	<b>27</b>
<b>2 Navigating TRM .....</b>	<b>29</b>
<b>2.1 Application Manager .....</b>	<b>29</b>
2.1.1 Launching Application Manager .....	29
2.1.2 Application Manager menus .....	30
2.1.3 Start-up parameters .....	31
2.1.4 Customizing Application Manager .....	31
<b>2.2 Common application features .....</b>	<b>31</b>
2.2.1 Opening applications .....	32
2.2.2 Closing applications .....	32
2.2.3 Generating reports on application activity .....	32
2.2.4 Using application controls .....	32
2.2.5 Using keyboard shortcuts .....	34
2.2.6 Using application menus .....	34

2.2.7 Customizing the display of applications .....	35
2.2.8 Sorting data .....	35
2.2.9 Printing data .....	35
2.2.10 Using manager applications .....	36
<b>3 Managing static data .....</b>	<b>41</b>
<b>3.1 Static data entities .....</b>	<b>41</b>
<b>3.2 Static Data Editor .....</b>	<b>41</b>
3.2.1 Static Data Editor menus and toolbars .....	41
3.2.2 Start-up parameters .....	43
3.2.3 Editor layouts .....	43
3.2.4 Query and Edit modes .....	44
<b>3.3 Managing static data in Static Data Editor .....</b>	<b>45</b>
3.3.1 Creating new static data entities .....	45
3.3.2 Creating static data from an existing entity .....	45
3.3.3 Creating static data entities in parallel .....	45
3.3.4 Modifying static data entities .....	46
3.3.5 Deleting static data entities .....	46
3.3.6 Verifying static data entities .....	46
3.3.7 Finding static data entities .....	46
3.3.8 Using templates to create static data entities .....	48
3.3.9 Common Static Data Editor attributes .....	49
<b>3.4 Managing SDM-enabled static data .....</b>	<b>51</b>
3.4.1 SDM-enabled Static Data Editors .....	51
3.4.2 Static Data Manager .....	54
3.4.3 Processing static data entities .....	57
3.4.4 Sharing SDM-enabled data across Wallstreet Suite modules .....	58
<b>3.5 Countries .....</b>	<b>59</b>
<b>3.6 Calendars .....</b>	<b>59</b>
3.6.1 Creating calendars .....	60
<b>3.7 Gaps (time intervals) .....</b>	<b>62</b>
3.7.1 Order of cashflow sorting to gaps .....	63
<b>3.8 IR quotes and yield curves .....</b>	<b>64</b>
3.8.1 Date Conventions .....	64
3.8.2 Creating IR Quote and Yield Curves .....	65
3.8.3 Optional features .....	78
<b>3.9 Currencies .....</b>	<b>80</b>
3.9.1 Creating currencies .....	80
<b>3.10 Currency priorities .....</b>	<b>87</b>
<b>3.11 Settlement locations .....</b>	<b>88</b>
<b>3.12 Client groups .....</b>	<b>89</b>
<b>3.13 Clients .....</b>	<b>89</b>
3.13.1 Creating clients .....	90
3.13.2 Managing clients .....	106

<b>3.14</b>	<b>Portfolios</b>	<b>107</b>
3.14.1	Creating portfolios	108
3.14.2	Managing portfolios	113
<b>3.15</b>	<b>Result types and results</b>	<b>114</b>
3.15.1	Result types	114
3.15.2	Results	115
3.15.3	Defining result treatments	115
3.15.4	Parallel Result Treatment	125
<b>3.16</b>	<b>Instrument types</b>	<b>126</b>
<b>3.17</b>	<b>Instrument groups</b>	<b>127</b>
<b>3.18</b>	<b>Instrument Templates</b>	<b>128</b>
<b>3.19</b>	<b>Instruments</b>	<b>129</b>
3.19.1	Generating reports on instruments	130
<b>3.20</b>	<b>Classification groups</b>	<b>130</b>
<b>3.21</b>	<b>Classification rules</b>	<b>131</b>
<b>3.22</b>	<b>Comments and comment rules (optional)</b>	<b>132</b>
3.22.1	Setting up a comment rule	132
<b>3.23</b>	<b>Bank Account Type Editor (optional)</b>	<b>133</b>
<b>3.24</b>	<b>Branch codes (optional)</b>	<b>133</b>
<b>3.25</b>	<b>Calendar groups (optional)</b>	<b>134</b>
3.25.1	Generating reports on calendar groups	134
<b>3.26</b>	<b>Cashflow charges (optional)</b>	<b>135</b>
<b>3.27</b>	<b>Cashflow groups (optional)</b>	<b>138</b>
<b>3.28</b>	<b>Cashflow types (optional)</b>	<b>139</b>
<b>3.29</b>	<b>Cash pools (optional)</b>	<b>139</b>
<b>3.30</b>	<b>Country groups (optional)</b>	<b>142</b>
<b>3.31</b>	<b>Credit ratings (optional)</b>	<b>142</b>
<b>3.32</b>	<b>Currency classes (optional)</b>	<b>142</b>
<b>3.33</b>	<b>Ladder sets (optional)</b>	<b>143</b>
<b>3.34</b>	<b>Ladder rules (optional)</b>	<b>145</b>
<b>3.35</b>	<b>Option schedule templates (optional)</b>	<b>145</b>
3.35.1	Defining simple option schedules	146
3.35.2	Defining complex option schedules	146
<b>3.36</b>	<b>Option schedule template groups (optional)</b>	<b>146</b>
<b>3.37</b>	<b>Package types (optional)</b>	<b>147</b>
<b>3.38</b>	<b>Parameters (optional)</b>	<b>148</b>
<b>3.39</b>	<b>Properties (optional)</b>	<b>148</b>
3.39.1	Creating properties	149
<b>3.40</b>	<b>Schedule templates (optional)</b>	<b>150</b>
<b>3.41</b>	<b>Schedule template groups (optional)</b>	<b>151</b>

3.42 Security Basket Editor (optional) .....	152
3.43 Security Criteria Set Editor (optional) .....	153
3.44 Security identifier types (optional) .....	154
3.45 Time zones (optional) .....	154
3.46 Transaction charges (optional) .....	155
3.47 Volatilities (optional) .....	158
<b>4 Managing market data .....</b>	<b>161</b>
<b>4.1 Defining real-time quotations .....</b>	<b>161</b>
4.1.1 Defining the source market quotations .....	161
4.1.2 Defining filtering rules for real-time quotations .....	163
4.1.3 Quoting the rates .....	165
<b>4.2 Defining scenarios and subscenarios .....</b>	<b>165</b>
4.2.1 Defining scenarios .....	166
4.2.2 Defining subscenarios .....	166
<b>4.3 Freezing rates automatically .....</b>	<b>166</b>
<b>4.4 Defining simulation scenarios .....</b>	<b>167</b>
4.4.1 Defining FX simulation scenarios .....	167
4.4.2 Defining IR and volatility simulation scenarios .....	168
<b>4.5 Rate Monitor .....</b>	<b>171</b>
4.5.1 Rate Monitor menus .....	171
4.5.2 Toolbar .....	173
4.5.3 Start-up parameters .....	173
4.5.4 Managing market data in Rate Monitor .....	173
4.5.5 Generating quotation reports .....	186
<b>4.6 Pricing tools .....</b>	<b>186</b>
4.6.1 FX Forward Pricing .....	186
<b>4.7 Pricing complex derivatives .....</b>	<b>190</b>
4.7.1 Defining Calibration Baskets .....	190
4.7.2 Defining a calibration model for a currency .....	191
4.7.3 Defining cross-currency calibration models .....	192
4.7.4 Defining BGM calibration models .....	193
4.7.5 Calibration Monitor .....	195
4.7.6 Calibrating pricing models .....	198
4.7.7 Assigning calibration models to instruments .....	199
<b>4.8 Bloomberg interface .....</b>	<b>199</b>
4.8.1 Interface configuration and usage overview .....	199
4.8.2 Generic configuration .....	201
4.8.3 Security import .....	206
4.8.4 Security list import .....	210
4.8.5 Instrument update .....	211
4.8.6 Client update .....	213
4.8.7 Corporate Actions update .....	216
4.8.8 Prices Import .....	218

<b>4.9 Market Data Status Monitor</b> .....	<b>218</b>
4.9.1 Market Data Status pane .....	218
4.9.2 Properties pane .....	218
4.9.3 Other panes .....	218
4.9.4 Menus .....	219
<b>5 Managing rules</b> .....	<b>221</b>
<b>5.1 Defining rules</b> .....	<b>221</b>
5.1.1 Identifying rule criteria .....	223
5.1.2 Selecting transaction parameter values .....	224
5.1.3 Specifying cashflow attributes .....	225
5.1.4 Assigning branch codes to a rule .....	225
5.1.5 Capturing transactions according to status .....	225
<b>6 Managing activities</b> .....	<b>227</b>
<b>6.1 Activity Manager</b> .....	<b>227</b>
6.1.1 Activity Manager menus .....	228
6.1.2 Start-up parameters .....	229
6.1.3 Activity modes .....	229
<b>6.2 Managing activities</b> .....	<b>229</b>
6.2.1 Creating activities .....	229
6.2.2 Running activities immediately .....	232
6.2.3 Adding extra properties to activities .....	232
6.2.4 Checking the running of activities .....	232
6.2.5 Generating reports on activities .....	233
<b>7 Reporting</b> .....	<b>235</b>
<b>7.1 Report Generator</b> .....	<b>235</b>
7.1.1 Report Generator menus .....	235
7.1.2 Start-up parameters .....	238
7.1.3 Report files .....	238
<b>7.2 Managing reports</b> .....	<b>239</b>
7.2.1 Creating new reports .....	239
7.2.2 Opening entity reports .....	239
7.2.3 Drilling down into reports .....	239
7.2.4 Creating columns for special information or groupings .....	240
7.2.5 Building expressions for reports .....	241
7.2.6 Configuring columns .....	252
7.2.7 List of reports .....	254
<b>8 Managing transactions</b> .....	<b>257</b>
<b>8.1 Transaction Manager</b> .....	<b>257</b>
8.1.1 Transaction Manager menus .....	258
8.1.2 Start-up parameters .....	262
8.1.3 Transaction Manager modes .....	262

<b>8.2 Capturing deals</b>	<b>263</b>
8.2.1 Entering new deals in Transaction Manager	264
8.2.2 Canceling deals	271
8.2.3 Entering new deals in Enter Board	272
8.2.4 Setting up a pre-trade limit check	277
8.2.5 Enabling limit queries at transaction level	280
<b>8.3 Managing settlement instructions</b>	<b>280</b>
8.3.1 Modifying settlement instructions	280
8.3.2 Entering ad-hoc settlement instructions	281
<b>8.4 Processing transactions</b>	<b>283</b>
8.4.1 Retrieving transactions	283
8.4.2 Displaying transaction data in a chart	286
8.4.3 Verifying transactions	286
8.4.4 Confirming transactions	286
8.4.5 Correcting transactions	287
8.4.6 Matching and unmatching transactions	288
8.4.7 Performing actions on deals	289
8.4.8 Generating reports on transactions	299
<b>8.5 Deal mirroring</b>	<b>300</b>
8.5.1 Internal deal mirroring	300
8.5.2 Deal mirroring using mirror cases	305
<b>8.6 Managing call transactions</b>	<b>315</b>
8.6.1 Call Manager	316
8.6.2 Entering call transactions	317
8.6.3 Processing call transactions	317
8.6.4 Generating call reports	318
<b>8.7 Managing cashflow forecasts</b>	<b>318</b>
8.7.1 Setting up forecast instruments	318
8.7.2 Setting up cashflow forecasting	318
8.7.3 Forecast Exposure Board	321
8.7.4 Processing forecast exposures	322
<b>9 Managing orders</b>	<b>323</b>
<b>9.1 Overview</b>	<b>323</b>
<b>9.2 Setting up order management</b>	<b>324</b>
9.2.1 Defining an order platform	325
9.2.2 Defining order routing rule	326
<b>9.3 Order Managers</b>	<b>326</b>
9.3.1 Views	327
<b>9.4 Processing orders</b>	<b>327</b>
9.4.1 Entering orders	328
9.4.2 Manually executing internal orders	328
9.4.3 Overriding external order execution	328
<b>9.5 Monitoring orders</b>	<b>329</b>



<b>10</b>	<b>Managing funds</b>	<b>331</b>
10.1	Setting up fund portfolios	331
10.1.1	Creating fund portfolios	331
10.2	Fund Managers	333
10.2.1	Managing fund shares	333
10.2.2	Managing fund fees	333
10.3	Setting up default NAV calculation values	334
10.4	NAV Monitor	335
10.4.1	Configuring NAV Monitor	335
10.4.2	Monitoring net asset value in NAV Monitor	336
10.4.3	Saving NAV reports	341
10.5	NAV Report Manager	341
10.5.1	Managing reports	341
10.5.2	Automating NAV reporting	342
<b>11</b>	<b>Managing collateral</b>	<b>345</b>
11.1	Setting up master agreements	345
11.1.1	Defining collateral agreements	345
11.1.2	Attaching master agreements to portfolio owners	352
11.1.3	Applying master agreements to instruments	352
11.2	Monitoring collateral positions	352
11.2.1	Collateral Valuation Board	353
11.2.2	Collateral Management Reports	359
<b>12</b>	<b>Monitoring positions</b>	<b>361</b>
12.1	Treasury Monitor	361
12.1.1	Treasury Monitor menus	361
12.1.2	Start-up parameters	364
12.1.3	Configuring Treasury Monitor	365
12.1.4	Monitoring positions in Treasury Monitor	366
12.1.5	Simulating movements in Treasury Monitor	387
12.1.6	Using Treasury Monitor for risk measurement	390
12.1.7	Monitoring cost-of-carry positions	390
12.1.8	Generating position-related reports	391
12.2	Position Monitor	392
12.2.1	Position Monitor menus	392
12.2.2	Monitoring positions with Position Monitor	392
12.3	FX Spot Monitor	393
12.3.1	FX Spot Monitor menus	393
12.3.2	Start-up parameters	393
12.3.3	Monitoring positions in FX Spot Monitor	393
12.4	FX Position Roll Over activity	397
<b>13</b>	<b>Monitoring performance</b>	<b>399</b>

<b>13.1 Measuring performance and risk</b> .....	<b>399</b>
13.1.1 Performance versus risk .....	399
13.1.2 AIMR-PPS™ standards .....	401
<b>13.2 Setting up performance measurement and risk</b> .....	<b>401</b>
13.2.1 Setting up entities for performance measurement .....	401
13.2.2 Generating historical market values for performance measurement .....	404
13.2.3 Configuring Treasury Monitor for risk measurement .....	405
<b>13.3 Performance Monitor</b> .....	<b>405</b>
13.3.1 Performance Monitor menus .....	405
13.3.2 Start-up parameters .....	408
13.3.3 Configuring Performance Monitor .....	408
13.3.4 Monitoring performance in Performance Monitor .....	409
<b>14 Portfolio modeling</b> .....	<b>413</b>
<b>14.1 Setting up portfolio modeling</b> .....	<b>413</b>
14.1.1 Characteristics of portfolios models .....	413
14.1.2 Defining portfolio models .....	415
14.1.3 Defining portfolio model security lists .....	416
14.1.4 Applying a portfolio model or benchmark to a portfolio .....	416
<b>14.2 Portfolio Modeling Monitor</b> .....	<b>417</b>
14.2.1 Portfolio Modeling Monitor menus .....	418
14.2.2 Start-up parameters .....	420
14.2.3 Configuring Portfolio Modeling Monitor .....	421
14.2.4 Analyzing positions in Portfolio Modeling Monitor .....	423
14.2.5 Rebalancing .....	424
14.2.6 Generating deals .....	427
<b>15 Managing benchmarks</b> .....	<b>429</b>
<b>15.1 About benchmarks</b> .....	<b>429</b>
15.1.1 Components .....	429
15.1.2 Definition Methods .....	430
15.1.3 Re-Investment Methods .....	430
15.1.4 Activities .....	430
<b>15.2 Benchmark Manager</b> .....	<b>431</b>
15.2.1 Benchmark Manager menus .....	431
15.2.2 Actions .....	432
<b>15.3 Defining benchmarks</b> .....	<b>433</b>
15.3.1 Setting up a benchmark portfolio .....	433
15.3.2 Setting up a benchmark .....	434
<b>15.4 Processing benchmarks</b> .....	<b>443</b>
15.4.1 Copying a benchmark revision .....	444
15.4.2 Rebalancing .....	444
15.4.3 Cash Processing .....	445
15.4.4 Performing a manual adjustment .....	446
15.4.5 Closing a benchmark .....	446

15.4.6	Deleting a benchmark .....	446
<b>16</b>	<b>Managing limits .....</b>	<b>447</b>
16.1	Overview .....	447
16.2	Setting up limits .....	449
16.2.1	Creating limit factor sets .....	450
16.2.2	Creating limit item templates .....	452
16.2.3	Creating sublimit calculation templates .....	461
16.2.4	Creating limit client queries .....	467
16.2.5	Creating limit categories .....	467
16.2.6	Creating limits .....	468
16.2.7	Creating limit templates .....	470
16.3	Limit Monitor .....	471
16.3.1	Limit Monitor menus .....	471
16.3.2	Start-up parameters .....	473
16.3.3	Configuring limits .....	473
16.4	Limit Notifications .....	482
16.4.1	Limit Notifications menus .....	483
16.4.2	Start-up parameters .....	483
16.5	Analyzing limit violations .....	484
16.5.1	Generating reports on limit violations .....	484
<b>17</b>	<b>Managing transaction conditions .....</b>	<b>485</b>
17.1	Overview .....	485
17.2	Setting up transaction condition sets .....	486
17.3	Processing transaction condition sets .....	491
17.3.1	Evaluation .....	491
17.3.2	Action .....	491
17.4	Monitoring transaction conditions .....	492
17.4.1	Transaction Manager .....	492
17.4.2	Transaction Condition Violations .....	493
17.4.3	Exception Verification .....	493
17.4.4	Transaction Conditions report .....	493
<b>18</b>	<b>Managing cash and settlements .....</b>	<b>495</b>
18.1	Managing cash and cash position .....	495
18.1.1	Managing bank account balances and interest .....	495
18.1.2	Managing cost of carry .....	499
18.1.3	Managing cash pool leveling .....	502
18.2	Setting up settlement management .....	505
18.2.1	Defining settlement parameters .....	505
18.3	Generating and processing settlements .....	510
18.3.1	Settlement Processing menus .....	513
18.3.2	Start-up parameters .....	513

18.3.3	Settlement processing modes .....	514
18.3.4	Processing settlements .....	514
18.3.5	Modifying settlement instructions .....	520
18.3.6	Generating settlement processing reports .....	520
<b>18.4</b>	<b>Managing custody movements and balances .....</b>	<b>520</b>
18.4.1	Start-up parameters .....	520
18.4.2	Custody Manager views .....	521
18.4.3	Retrieving custody movements .....	521
18.4.4	Generating custody balances .....	521
18.4.5	Retrieving custody balances .....	522
18.4.6	Entering custody statement data .....	523
18.4.7	Custody reports .....	524
<b>18.5</b>	<b>Reconciling settlements and custodies .....</b>	<b>524</b>
18.5.1	Start-up parameters .....	525
18.5.2	Reconciliation application views .....	525
18.5.3	Defining reconciliation setup .....	526
18.5.4	Entering statements of account .....	528
18.5.5	Querying statements of account and settlement information .....	529
18.5.6	Matching settlements .....	529
18.5.7	Processing actions .....	531
18.5.8	Reconciliation reports .....	532
<b>19</b>	<b>Managing accounting .....</b>	<b>533</b>
<b>19.1</b>	<b>Parallel accounting .....</b>	<b>533</b>
19.1.1	Classification .....	533
19.1.2	Result treatment methods .....	535
19.1.3	Classification rules .....	536
19.1.4	Classification of transactions .....	537
<b>19.2</b>	<b>Realizing and processing results .....</b>	<b>537</b>
19.2.1	Realizing profit/loss .....	537
19.2.2	Processing results .....	538
<b>19.3</b>	<b>Updating the book value of deals .....</b>	<b>539</b>
19.3.1	Defining the book value change method .....	539
19.3.2	Making book value changes .....	539
19.3.3	Making book value adjustments .....	540
19.3.4	Undoing book value changes and adjustments .....	541
19.3.5	Generating a book value change report .....	542
19.3.6	Posting book value changes .....	542
<b>19.4</b>	<b>Using TRM with a General Ledger system .....</b>	<b>542</b>
19.4.1	Setting up the portfolio owner for accounting .....	543
19.4.2	Configuring accounting for the portfolio owner .....	543
19.4.3	Defining bookkeeping entries .....	545
19.4.4	Calculating bookkeeping entries .....	546
<b>19.5</b>	<b>Hedge accounting in Wallstreet Suite .....</b>	<b>546</b>

<b>20</b>	<b>Monitoring VaR .....</b>	<b>547</b>
20.1	<b>Setting up Value-at-Risk .....</b>	<b>547</b>
20.1.1	Mapping RM volatilities and correlations to TRM market data .....	547
20.1.2	Defining VaR scenarios .....	549
20.1.3	Assigning VaR properties to portfolios .....	550
20.2	<b>Managing VaR data .....</b>	<b>550</b>
20.2.1	VaR Data Board .....	551
<b>21</b>	<b>Managing messages .....</b>	<b>555</b>
21.1	<b>Setting up message requests .....</b>	<b>555</b>
21.1.1	Setting up message groups .....	555
21.1.2	Setting up message types .....	556
21.1.3	Setting up message rules .....	558
21.1.4	Assigning message details to clients .....	559
21.2	<b>Message Manager .....</b>	<b>560</b>
21.2.1	Message Manager menus .....	560
21.2.2	Start-up parameters .....	560
21.2.3	Message modes .....	560
21.3	<b>Processing messages .....</b>	<b>561</b>
21.3.1	Retrieving messages .....	561
21.3.2	Previewing messages .....	561
21.3.3	Verifying or modifying messages .....	561
21.3.4	Retransmitting messages .....	561
21.3.5	Creating personalized warning messages .....	562
<b>22</b>	<b>Managing RMI and CMI .....</b>	<b>563</b>
22.1	<b>Managing RMI .....</b>	<b>563</b>
22.1.1	Assigning RMI mapping strategies to instruments .....	564
22.1.2	Grouping by instrument .....	564
22.1.3	No Pending Cashflows .....	564
22.1.4	Defining yield curves for RMI .....	564
22.1.5	Defining equities for RMI .....	568
22.1.6	Defining instruments for RMI .....	569
22.1.7	Exporting and importing positions .....	570
22.2	<b>Managing CMI .....</b>	<b>571</b>
22.2.1	Assigning CMI mapping strategies to instruments .....	571
22.2.2	Defining obligors .....	571
22.2.3	Defining obligor credit ratings .....	572
22.2.4	Defining exposures .....	573
22.2.5	Exporting and importing exposures and obligors .....	573
<b>23</b>	<b>Pricing IR and FX trades .....</b>	<b>575</b>
23.1	<b>Pricing IR trades .....</b>	<b>575</b>
23.1.1	Defining IRP payoff types .....	575

23.1.2 IR Pricing tool .....	576
<b>23.2 Pricing FX trades .....</b>	<b>593</b>
23.2.1 FX Pricing tool .....	593
<b>24 Working with the Dashboard .....</b>	<b>611</b>
<b>24.1 Overview .....</b>	<b>611</b>
24.1.1 Pivot tables .....	611
24.1.2 Charts .....	612
24.1.3 Data sources .....	612
<b>24.2 Getting started with the Dashboard .....</b>	<b>612</b>
24.2.1 Input Parameters .....	613
24.2.2 Menus and buttons .....	615
24.2.3 Shortcuts .....	616
24.2.4 Data view .....	616
24.2.5 The Designer .....	620
<b>24.3 Data source details .....</b>	<b>624</b>
24.3.1 Cash management reports .....	624
24.3.2 Limits .....	624
24.3.3 Report Generator .....	625
24.3.4 Treasury Position .....	625
<b>Appendix A: Activity parameters .....</b>	<b>627</b>
<b>A.1 Bank Account Balances .....</b>	<b>627</b>
<b>A.2 Bank Account Interest Realizing .....</b>	<b>627</b>
<b>A.3 Benchmark Cash Processing .....</b>	<b>628</b>
<b>A.4 Benchmark Rebalancing .....</b>	<b>628</b>
<b>A.5 Book Value Change .....</b>	<b>628</b>
<b>A.6 Call Money Account Update .....</b>	<b>628</b>
<b>A.7 Call Money Roll Over .....</b>	<b>629</b>
<b>A.8 Cash Pool Leveling .....</b>	<b>629</b>
<b>A.9 Cash Settlement Reconciliation .....</b>	<b>630</b>
<b>A.10 Checking Instruments and Transactions Clients .....</b>	<b>630</b>
<b>A.11 Checking Instruments and Transactions Holidays .....</b>	<b>630</b>
<b>A.12 Closing the Books Valuation .....</b>	<b>631</b>
<b>A.13 Copy Market Information .....</b>	<b>631</b>
<b>A.14 Cost of Carry .....</b>	<b>632</b>
<b>A.15 Cost of Carry Interest Realizing .....</b>	<b>632</b>
<b>A.16 Cost of Carry Zero Balancing .....</b>	<b>633</b>
<b>A.17 Custody Balances .....</b>	<b>633</b>
<b>A.18 Dashboard Excel Export .....</b>	<b>633</b>
<b>A.19 Data License Prices .....</b>	<b>634</b>

A.20	Data License Output Processing .....	635
A.21	Delete Instrument .....	635
A.22	Detachment .....	636
A.23	Dividend .....	636
A.24	End of Day Processing .....	636
A.25	End of Period Processing .....	637
A.26	Equity Conversion .....	637
A.27	Fixing ABS Repayment .....	638
A.28	Fixing ABS Repayment (Full Repayment) .....	638
A.29	Fixing Bond Cashflow .....	638
A.30	Fixing Bond Cashflow - Undo .....	638
A.31	Fixing Transaction Cashflow .....	639
A.32	Fixing Transaction Cashflow - Undo .....	639
A.33	Fixing Transaction Trigger .....	640
A.34	Fixing Transaction Trigger - Undo .....	640
A.35	Forecast Exposures from CMM .....	641
A.36	Forward Fixing .....	641
A.37	Fund Data Calculation/Reporting .....	641
A.38	Fund Fee Realizing .....	643
A.39	FX Fixing Transaction Cashflow .....	643
A.40	FX Fixing Transaction Cashflow - Undo .....	643
A.41	FX Option Strategy Exercise .....	644
A.42	FX Position Roll-Over .....	644
A.43	FX Realizing .....	645
A.44	Import Instrument .....	646
A.45	Import Market Information .....	646
A.46	Import Security List .....	647
A.47	Index Freeze .....	647
A.48	Index Rebalance .....	648
A.49	Index Adjustment .....	648
A.50	Netting .....	648
A.51	Netting - Undo .....	648
A.52	NumeriX Calibration .....	649
A.53	NumeriX Valuation .....	649
A.54	FX Option No Exercise .....	649
A.55	Performance Data Calculation .....	650
A.56	Portfolio Modeling Processing .....	650
A.57	Purge Market Quotes .....	651

A.58	Return of Capital .....	651
A.59	Risk Manager Export .....	652
A.60	Save Caplet/Floorlet Volatilities .....	652
A.61	Save Derived IR Quotes and Yield Curves .....	653
A.62	Selling (FIFO and Avg Balances) .....	653
A.63	Selling Values .....	654
A.64	Settlement Generation .....	654
A.65	Security Positions Data .....	655
A.66	Security Settlement Reconciliation .....	655
A.67	Split .....	655
A.68	Undo Book Value Change .....	656
A.69	Update Client .....	656
A.70	Update Corporate Action .....	656
A.71	Update Instrument .....	657
A.72	Update Settlement Instructions .....	657
A.73	CreditManager Exposure Export .....	657
A.74	CreditManager Obligor Export .....	658
<b>Appendix B: Report parameters .....</b>		<b>659</b>
B.1	Activity Log Report .....	659
B.2	Balance Report .....	659
B.3	Bank Account Statement Report .....	660
B.4	Book Value Change History Report .....	660
B.5	Call Reports .....	661
B.6	Cashflow Report .....	661
B.7	Cashflow Fixing Report .....	662
B.8	Cashflow Log Report .....	662
B.9	Cheapest to Deliver Report .....	663
B.10	Classification Report .....	663
B.11	Client Update Log .....	663
B.12	Collateral Management Report .....	664
B.13	Collateral Report .....	664
B.14	Competitive Quote Report .....	665
B.15	Corporate Actions Update Log .....	665
B.16	Corporate Actions Update Report .....	665
B.17	Custody Balance Report .....	666
B.18	Custody Reconciliation Report .....	666
B.19	Data License Output Processing Report .....	666



B.20	Data License Prices Log .....	667
B.21	Data License Prices Import Log .....	667
B.22	Delivery Report .....	667
B.23	Drawdown Fixing Report .....	668
B.24	Event Diary Report .....	668
B.25	History Log Report .....	668
B.26	Holidays Checking Report .....	669
B.27	Holidays for Period Report .....	669
B.28	Import Market Information Log Report .....	669
B.29	Instrument Delete Log .....	670
B.30	Instrument Import Log .....	670
B.31	Instrument Import Report .....	670
B.32	Instrument Update Log .....	671
B.33	Instrument Update Report .....	671
B.34	Key Figure Report .....	671
B.35	Limit Log Report .....	672
B.36	Periodic P/L Report .....	673
B.37	Rate Report .....	674
B.38	Rate Comparison Report .....	675
B.39	Rate Log Report .....	675
B.40	Realize Account Interest Report .....	675
B.41	Reconciliation Report .....	676
B.42	Reconciliation Log Report .....	676
B.43	Renaming Client ID Report .....	677
B.44	Security List Import Log .....	677
B.45	Settlement Report .....	677
B.46	Settlement Cashflows Report .....	677
B.47	Settlement Instructions Chain Report .....	678
B.48	Settlement Log Report .....	678
B.49	Transaction Conditions Report .....	679
B.50	Transactions Report .....	679
B.51	Transaction Log Report .....	680
B.52	Transaction Market Rate Report .....	680
<b>Appendix C: Start-up parameters .....</b>		<b>681</b>
C.1	Activity Manager .....	681
C.2	Application Manager .....	681
C.3	FX Forward Pricing .....	681

<b>C.4 Limit Monitor</b> .....	<b>682</b>
<b>C.5 Limit Notifications</b> .....	<b>682</b>
<b>C.6 Performance Monitor</b> .....	<b>682</b>
<b>C.7 Portfolio Modeling Monitor</b> .....	<b>683</b>
<b>C.8 Rate Monitor</b> .....	<b>683</b>
<b>C.9 Report Generator</b> .....	<b>684</b>
<b>C.10 Static Data Editor</b> .....	<b>684</b>
<b>C.11 Transaction Manager</b> .....	<b>685</b>
<b>C.12 Treasury Monitor</b> .....	<b>686</b>
<b>C.13 VaR Data Board</b> .....	<b>687</b>
<b>Appendix D: SDM - CMM mapping</b> .....	<b>689</b>
<b>D.1 Client Editor</b> .....	<b>689</b>
D.1.1 Client role mapping .....	689
D.1.2 Preventing client replication .....	689
D.1.3 Mapping of SDM Counterparty - CMM Party entity .....	689
<b>D.2 Country Editor</b> .....	<b>693</b>
D.2.1 Mapping of Country entity .....	693
<b>D.3 Currency Editor</b> .....	<b>694</b>
D.3.1 Mapping of Currency entity .....	694
<b>D.4 Calendar Group Editor</b> .....	<b>694</b>
<b>D.5 Gap Editor</b> .....	<b>695</b>
D.5.1 Mapping to CMM Interest Rate Type entity .....	695
<b>D.6 Settlement Advice Method Editor</b> .....	<b>695</b>
D.6.1 Mapping of Settlement Advice Method entity .....	695
<b>D.7 Yield Curve Editor</b> .....	<b>696</b>
D.7.1 Mapping to CMM Interest Rate Category entity .....	696
<b>D.8 CMM static data entities</b> .....	<b>696</b>
D.8.1 CMM Instrument Category Editor .....	696
D.8.2 CMM Instrument Type Editor .....	696
D.8.3 CMM Payment Method Editor .....	697
D.8.4 CMM Region Editor .....	697
D.8.5 CMM Industry Code Editor .....	698
D.8.6 CMM Relationship Type Editor .....	698
D.8.7 CMM Bank Account Group Editor .....	698
<b>Appendix E: TRM - RMI/CMI mapping</b> .....	<b>699</b>
<b>E.1 RMI mapping strategies</b> .....	<b>699</b>
E.1.1 RM template .....	699
E.1.2 Yield curve mapping logic .....	702
E.1.3 Equity mapping .....	703
<b>E.2 CMI mapping strategies</b> .....	<b>704</b>

E.2.1 CM Template .....	704
E.2.2 CM Seniority Level .....	707
<b>Appendix F: Cashflow attributes .....</b>	<b>709</b>



# Preface

Welcome to the Transaction & Risk Management Module (TRM) User Guide. This guide describes how to start the Wallstreet Suite Transaction & Risk Management Module (referred to as TRM), open and close the system's applications, and enter data using the different TRM tools.

This guide also explains how to set up the system with all the information users need before TRM can be used to manage transactions, monitor positions, and so on.

For example, users cannot enter deals until the static data entities (such as, currencies, instruments, counterparties, bank accounts), and all other required elements have been defined.

## Intended audience

This guide is intended for users who are involved in the following tasks:

- Defining and setting up static data
- Making trades
- Monitoring and analyzing positions
- Measuring performance and risk
- Managing payments and cash
- Accounting.

---

**Note:** For information relating to the calculations that TRM performs, and the setup, processing, and position monitoring of specific types of instruments: see *TRM Instruments: Processing and Calculations Guide*.

---

## Associated documents

Associated documents can be accessed from the **Help** menu of the Wallstreet Suite's applications.

- *TRM Instruments: Processing and Calculations*
- *TRM System Administration Guide*
- *ACM User Guide*
- *CLM User Guide*
- *WebSuite User Guide*.

## Change history

Edition	Date	Changes	Updated By
0.1	August 2011	Initial release 7.3.16. Performance Monitor: Branch codes and Cost of Carry IR Pricing: Underlying quotes and money market quotes Reports, Treasury Monitor, Startup parameters: Closing the Books	TRM Dev Team
0.2	September 2011	Result Editor: Payable Sell Profit (Future, Netted Option) Cash management: Settlement generation new condition	TRM Dev Team

This chapter introduces you to TRM and the steps required to set up and use it.

## 1.1 TRM

TRM is a real-time integrated front, middle, and back office system that is open and flexible. It provides sophisticated tools for effective transaction management, decision support, risk management, performance measurement, and operations.

TRM supports a wide range of instruments throughout their life cycle, providing full visibility, easier regulatory compliance and decreased operational risk.

## 1.2 Principles of TRM

The entire flow of information in TRM is based on five main principles:

- Portfolio hierarchy principle
- Transaction flow principle
- Cashflow principle
- Valuation principle
- Real-time principle.

In TRM, the trade is regarded as a transaction (transaction flow principle). One transaction consists of several cashflows, which are saved (cashflow principle). Each cashflow has a value date, necessary for valuation, payment settlement, and bookkeeping.

When you enter the transaction, it is valued with mark-to-market rates to manage risks and calculate unrealized and realized results (valuation principle). TRM continuously receives the latest market information from a market feed which is used in valuations to obtain current and reliable risk and result figures (real-time principle).

The powerful portfolio hierarchies enable the efficient control of risks and results. TRM provides a flexible tool for the creation of unrestricted and open portfolio hierarchies (portfolio hierarchy principle).

### 1.2.1 Portfolio hierarchy principle

Transactions always belong to a specific portfolio. The portfolio always belongs to a client and in most cases the client is the user organization.

In TRM, you create the link between a transaction and the organization which executed the transaction using portfolios.

You can build portfolio hierarchies, and you can create dynamic portfolio hierarchies by defining sub-portfolios for each portfolio. In addition, one portfolio can belong to several hierarchies.

You can also create several levels in each hierarchy, as some levels may only contain sub-portfolios that do not contain transactions.

Portfolio hierarchies are used throughout TRM and there are lots of possibilities for defining portfolio hierarchies. The flexibility of being able to build a new portfolio hierarchy allows effective monitoring and operation reporting. You can link portfolios freely, and you can build temporary hierarchies for ad-hoc analyzing purposes (for example, for special groups of transactions). When the properties of an individual portfolio are accurately defined, the flexibility of portfolio hierarchies can be fully used. You can specify the instruments and currencies allowed in the portfolio and can also define the dealers who have the right to enter trades in this portfolio.

Internal trading is possible in TRM, as traders can trade between portfolios. Internal trading means that risks are transferred within the user organization and different types of risk can be split between different portfolios: for example, the currency spot risk can be transferred from the currency forward portfolio to the spot portfolio.

### **1.2.2 Transaction flow principle**

The process of transaction handling and control, from initial trade entry to final acceptance, is referred to in TRM as the transaction flow. You use the transaction flow to monitor the movement of transactions from one state to another. You do so by configuring different modes of the Transaction Manager application to control and manage the transactions in different parts of the flow, and by limiting access rights to these applications to those users with the necessary permissions. You configure the transaction flow to the needs of your organization and also define it specifically for individual instruments, counterparties, currencies, and so on.

Other applications in TRM can also be made to adhere to the transaction flow principle. For example, you can configure the flow so that bookkeeping entries or payments can be generated only from transactions that have reached a verified state in the transaction flow. This configuration allows for more accuracy, as bookkeeping entries and payments are only made from transactions which are verified.

### **1.2.3 Cashflow principle**

TRM creates cashflows for each transaction generated. A cashflow in TRM is defined as a specific amount of money in a particular currency at a specific time.

The nature and processing rules of various cashflows depend on the instrument type. In TRM, all calculations (market value, net market value, realized and unrealized result, and so on) are based on transaction-related cashflows. TRM creates these cashflows when a transaction is created.

### **1.2.4 Valuation principle**

Valuation is the process of determining the value of an entity. Most figures in TRM are based on real-time market valuation. In general, cashflows are discounted to the valuation date to give the market value of the cashflow.

Risk and unrealized result calculations are based on the market value of the cashflows at the time of valuation. According to the valuation principle of TRM, the market value of a position is the present value of the cashflows in the future that make up the position.

By default, market value is expressed in the base currency of the portfolio. Therefore, the present values denominated in the foreign currency are converted into the base currency using the current spot FX rate.

### **1.2.5 Real-time principle**

Real-time means that all new information is available instantly. In practice, this means that all applications in TRM receive any changed or new information automatically, without your having to request it.

Most applications are configured to receive real-time updates. If this is not the case (for example, in reports), the transaction information needs to be updated manually to obtain the new information.



## 1.3 Types of information in TRM

TRM uses the following types of information:

- Static data information
- Market data information
- Transaction management information
- Calculated information.

### 1.3.1 Static data

A static data entity is the generic term for information that is set up in TRM and that changes little over time. Static data entities include data such as currencies, clients, and portfolios. Static data entities are also referred to as core data.

Static data entities are used in all aspects of TRM, for example, as components of deal entry, or as parameters to monitor treasury positions and for running reports. Because these entities are used so often, and assigned to so many other entities, they need to be set up before TRM can be used.

### 1.3.2 Market data

Market data refers to the market quotes of currencies, instruments, yield curves, equities, volatilities, and so on, which are stored in TRM. Market data is used to value and calculate risk on positions.

This information is typically imported from market data providers, such as Reuters, but you can also enter and modify it manually. If quotations come from a live market feed, position monitoring in TRM can take place in real-time; TRM constantly checks the market feeds, and can therefore instantly recalculate the market value of each transaction.

Furthermore, it is possible to set up quotation and interest rate movement simulations for “what if?” measuring in TRM.

In TRM, you can also trade any priced structure, including complex derivatives, using complex pricing models.

### 1.3.3 Transaction management information

Transaction management information is information essential to define a transaction, for example, transaction and cashflow amounts, transaction counterparties, and deal rates.

Calculated information (such as unrealized results and market value) is not part of this information.

### 1.3.4 Calculated information

A primary role of TRM is to calculate figures and to display them in the different applications. Information and instructions from other parts of TRM are required to do these calculations.

## 1.4 Applications of TRM

This section gives an overview of the different types of TRM applications, and how you use them depending on your position in the organization.

### 1.4.1 Front, Middle, and Back Office applications

Applications are divided into Front, Middle and Back Office groups which are centralized into one main application called Application Manager.

The groups are divided further into sub-groups in which you can find the individual applications. The applications available to you can vary depending on your organization's configuration of TRM and your user access rights.

### 1.4.2 Editors

Editors are used to define the static data information that needs to be set up before TRM can be used. Defining data in the editors is done in the Edit mode. There is another mode, called the Query mode, which is used to search existing static data definitions. For more information about these two modes, see *3.2.4 Query and Edit modes* on page 44.

Most editors are defined from a layout based on the Static Data Editor application. Each editor layout is available as an individual application in Application Manager.

### 1.4.3 Managers and Boards

In TRM, there are a number of Manager applications that are used to manage the flow and acceptance process of different types of information in the system. Managers are based on the Transaction Manager application layout.

Different modes of the Manager layout can be configured to be used for a particular purpose or to display information in a particular state in its process flow.

For example, the Deal Capture mode of Transaction Manager could be used to enter transactions in the Front Office, whereas the Final Transaction Admin mode could be used by the Back Office to verify and accept transactions before settlement occurs.

Each Manager mode is available as an individual application in Application Manager.

Permissions are set up and applied to users to restrict their access to different Manager modes and layouts according to their responsibilities within the organization.

Static Data Manager (used to manage and process static data) and Message Manager (designed specifically for processing and delivering messages or confirmations) are examples of other types of Manager applications.

In TRM, there are also several types of Board applications: for example, Enter Board which offers a simplified alternative to Transaction Manager for deal capture.

See *2.2.10 Using manager applications* on page 36 for more information.

### 1.4.4 Monitors

Monitors consist of pages which display information in grids and charts.

In Rate Monitor, you can manage the market data that you use for transactions. Rate Monitor allows you to view live quotations, to modify quotations, and to enter your own quotations.

Calibration Monitor is a version of Rate Monitor that is designed specifically for calibrating pricing models.

In Treasury Monitor, you can measure your current exposure, and also simulate the effect that market movements would have on your exposure.

In Performance Monitor, you can measure the performance of your own portfolio against an index or benchmark, and in Limit Monitor, you can analyze and monitor the limits you have set up.

## 1.4.5 Reports

Reports display information which is generated from the information provided by other TRM applications.

In TRM, you can create different types of reports: such as reports listing your data (for example, clients or instruments), and position-related reports (for example, Transaction, Key-Figure, and Periodic P/L).

You can also perform a variety of calculations on the data in a report, for example, calculations that are not available from Treasury Monitor. You can add, multiply, subtract and divide totals, calculate averages, produce subtotals at any grouping level, produce running totals, combine the output of different columns, and create sophisticated "if" conditions for displaying and calculating data.

You can create as many different report layouts as you need (either completely new ones, or ones based on existing layouts).

Reports are set up and managed in an application called Report Generator.

## 1.4.6 Activities

Some calculations and batch processes must be run on certain dates or at certain time intervals (for example, daily or monthly). In TRM, these calculations and batch processes are called activities and you can set them up to run automatically.

You can use activities to perform a variety of tasks, such as running batches and generating log reports, fixing cashflows, updating modified data in the system automatically, and various other calculations and realizing of key-figures.

Activities are managed and launched from an application called Activity Manager.

## 1.5 Setting up and using TRM

As a user, you are responsible for one or more of the following tasks:

Task	More information
Set up the module: <ul style="list-style-type: none"> <li>• Launch the module</li> <li>• Navigate the module's applications</li> <li>• Set up data</li> <li>• Set up batch activity</li> <li>• Set up and analyze data in reports.</li> </ul>	<i>Chapter 2 Navigating TRM</i> on page 29 <i>Chapter 3 Managing static data</i> on page 41 <i>Chapter 4 Managing market data</i> on page 161 <i>Chapter 5 Managing rules</i> on page 221 <i>Chapter 6 Managing activities</i> on page 227 <i>Chapter 7 Reporting</i> on page 235

Task	More information
Capture activity: <ul style="list-style-type: none"> <li>• Use the module to capture and process deals</li> <li>• Manage, monitor, and analyze positions and performance</li> <li>• Manage benchmarks</li> <li>• Manage limits</li> <li>• Manage payments, forecasts, and settlements</li> <li>• Manage results and accounting processes</li> <li>• Monitor risk information</li> <li>• Manage messages and sending correspondence</li> <li>• Perform pricing before generating them as transactions in TRM.</li> </ul>	<p><i>Chapter 8 Managing transactions</i> on page 257</p> <p><i>Chapter 11 Managing collateral</i> on page 345</p> <p><i>Chapter 12 Monitoring positions</i> on page 361</p> <p><i>Chapter 13 Monitoring performance</i> on page 399</p> <p><i>Chapter 14 Portfolio modeling</i> on page 413</p> <p><i>Chapter 15 Managing benchmarks</i> on page 429</p> <p><i>Chapter 16 Managing limits</i> on page 447</p> <p><i>Chapter 18 Managing cash and settlements</i> on page 495</p> <p><i>Chapter 19 Managing accounting</i> on page 533</p> <p><i>Chapter 20 Monitoring VaR</i> on page 547</p> <p><i>Chapter 21 Managing messages</i> on page 555</p> <p><i>Chapter 22 Managing RMI and CMI</i> on page 563</p> <p><i>Chapter 23 Pricing IR and FX trades</i> on page 575</p>
Reference data and parameters: <ul style="list-style-type: none"> <li>• Activity and report parameters</li> <li>• Application parameters</li> <li>• Mapping to other Wallstreet Suite modules</li> <li>• Mapping to RiskManager and CreditManager.</li> </ul>	<p><i>Appendix A Activity parameters</i> on page 627</p> <p><i>Appendix B Report parameters</i> on page 659</p> <p><i>Appendix C Start-up parameters</i> on page 681</p> <p><i>Appendix D SDM - CMM mapping</i> on page 689</p> <p><i>Appendix E TRM - RMI/CMI mapping</i> on page 699</p>

You complete the first of these tasks after your organization has installed TRM but before it begins to use the module.

You complete the remainder of these tasks on a regular basis after the initial installation and setup.

TRM consists of an integrated set of applications which are centralized into one main application called Application Manager.

Many of these applications can be set up in different modes or layouts: each one used for a different purpose. For example, an application such as Transaction Manager may be set up in two modes: one mode used for entering deals in the Front Office; and the other used for verifying deals in the Back Office. Another type of application called Static Data Editor has many different layouts, each one used to set up different types of core data (such as, currencies, instruments, or clients).

In Application Manager, the applications are structured into a logical hierarchy and are grouped and ordered to meet the organization's business needs.

Each user can then customize Application Manager according to their personal preferences, by rearranging the application display on their desktop.

From Application Manager, all TRM users can carry out their business, whatever their role in the organization. All users or groups of users are only able to access and launch those applications that they have permission to use.

This chapter explains the main functions of Application Manager, and the commands or tools that are common to other types of application.

## 2.1 Application Manager

Application Manager is the entry-point for launching the applications in TRM. All applications for which you have permission are accessible from the Application Manager window.

Application Manager is customizable to allow users to personalize their workspace. It consists of a toolbar which has buttons for easy access to the menu options, and several sub-windows that can either be displayed on the workspace or hidden from view. Displayed sub-windows can be docked or floating: docked windows have been repositioned somewhere within the main window; and floating windows have been detached from the main window and repositioned elsewhere on the workspace.

### 2.1.1 Launching Application Manager

To launch Application Manager:

1. Select the TRM item from the **Start** menu, or select the TRM icon on your desktop.
2. Enter your user name and password in the **Login** dialog.

Contact your local system administrator if you do not have a user name and password.

3. Click **OK**.

Application Manager launches. From this window, you can open the applications to which you have access rights.

## 2.1.2 Application Manager menus

The following tables describe the menu items found on Application Manager's menu bar.

Other menu items which are common to all applications are described in *2.2.6 Using application menus* on page 34.

### 2.1.2.1 File

Menu item	Description
Update	Resets Application Manager to the default settings.
Exit	Closes Application Manager.

### 2.1.2.2 View

Menu item	Description
Toolbar Status Bar	Shows the toolbar/status bar if the menu item is selected. Hides the toolbar/status bar if the menu item is not selected. Buttons are available on the toolbar for quick access to Application Manager's menu items.
Applications	Displays the dockable sub-window which contains all applications to which you have access rights. The applications are sorted into groups (as defined in the system configuration) according to the business area for which they are used. If a group is selected, the applications which belong to it are displayed in the main Application Manager window.
Running Applications	Displays the dockable sub-window which contains the list of applications currently running on your system.
Favorites	Displays the dockable sub-window which contains the applications which have been added to your favorites list. See <i>2.1.2.4 Favorites</i> on page 31.
Minimized	Minimizes Application Manager so that the main window and the docked sub-windows are hidden, but the tool bar (and the floating sub-windows) remains visible on your desktop. You can restore the full Application Manager window using the same command.
Default Ordering	Reverts the display of application names in the main Application Manager window to the default order in which they were sorted in the system configuration. If you need to sort the applications into alphabetical order, click the <b>Application</b> header name in the main window (available only with the <b>Details</b> option of the <b>View</b> menu).
Large Icons Small Icons List Details	Alters the display of the application names in the main Application Manager window.
Always on Top	Keeps the Application Manager window on top of other windows that are running on your desktop. Using <b>Always on Top</b> together with the <b>Minimized</b> view (see above) means you can have the Application Manager tool bar visible at all times but still see other open applications on your desktop.

### 2.1.2.3 Themes

Menu item	Description
Wallstreet Suite Native Windows XP Office 2003 Office 2000 Office XP	Allows you to select a theme for the system. The theme determines the appearance of TRM applications.  Note: This menu item becomes available when Application Manager is launched with the appropriate start-up parameter; see <i>2.1.3 Start-up parameters</i> on page 31.

### 2.1.2.4 Favorites

Menu item	Description
Favorites	Opens a multi-selection list from which you can select your favorite applications. The favorites are then listed in the <b>Favorites</b> dockable sub-window (see above).  <i>2.2.4 Using application controls</i> on page 32 for information about using multi-selection lists.
Launch All	Launches all favorite applications simultaneously.
Launch All on Startup	Launches all favorite applications on start-up of Application Manager. Holding down the Shift key at start-up prevents the favorites from launching.

### 2.1.2.5 Tools

Menu item	Description
Switch To	Allows you to move quickly between running applications.
Calculator	Launches the calculator. (Pressing F12 on the keyboard also opens the calculator.)
Close Applications	Closes all running applications automatically when you exit Application Manager.

## 2.1.3 Start-up parameters

It is possible to alter the start-up parameters so that Application Manager launches in a different mode.

See *C.2 Application Manager* on page 681 for information about the options available.

## 2.1.4 Customizing Application Manager

You can customize Application Manager according to your personal preferences by moving the dockable windows to rearrange the application display.

See *2.2.7 Customizing the display of applications* on page 35 for more information.

# 2.2 Common application features

There are some features (such as, opening and closing applications, menu options, start-up parameters, and data-entry controls) which are common to all applications in TRM.

There are other features which are common to a certain type of application, for example, rearranging an application's components to customize your display.

This section describes these features.

## 2.2.1 Opening applications

To open the TRM applications for which you have access rights from Application Manager, do one of the following:

- Select the required application from the **Applications** drop-down list found on Application Manager's toolbar. The applications are listed in alphabetical order.
- Select the folder containing the application you want from the **Applications** sub-window:
  - Double-click the application name in the main window.
  - Right-click the application name in the main window and select **Launch**.

## 2.2.2 Closing applications

To close the running applications one at a time, do one of the following:

- Select **File - Exit** from the application's menu bar.
- Right-click the application name in Application Manager's **Running applications** sub-window and select **Close**.

To close all running applications simultaneously, use the **Tools - Close Applications** menu option described in the *2.1.2 Application Manager menus* on page 30.

## 2.2.3 Generating reports on application activity

When applications are opened or closed from Application Manager, an entry is logged in the History Log report. The report records which user performed the action and when the action took place.

See *Chapter 7 Reporting* on page 235 for more information about reports.

## 2.2.4 Using application controls

The following table describes the most common application controls:

Control	Description
Command Button	Command buttons are used for executing commands. They are located either above the status bar or in the command bar. Examples of command buttons are <b>Add</b> , <b>Fetch</b> , <b>Apply</b> , and <b>Commit</b> .
Date Board	Enables you to enter dates in date fields. Date boards are accessed by clicking the arrow to the right of a date field. Dates are displayed respecting the parameters defined in your Regional Settings in the Control Panel. You can also enter dates manually using the keyboard: see <i>2.2.4.1 Entering dates manually</i> on page 33 for more information.
Menu Bar	Displays the menus specific to each application.
Multi-Selection List	Enables you to select several items from a list. You use multi-selection lists to configure the columns in Transaction Manager, or grids and charts in monitors. Multi-selection lists have two columns. The left column lists unselected items and the right column lists the items you have selected. You can use the transfer buttons found between the two columns to move items from the <b>Not Selected</b> column to the <b>Selected</b> column and vice versa. The buttons to the right of the <b>Selected</b> column are used to define the order in which the columns are displayed in the application.
Pages and Tabs	Pages can be located in the main part and lower part of TRM windows. If pages are in the lower part they are used to enter additional information. You access a page by clicking on its tab.
Selection Button	Clickable arrow that opens a TRM tool (for example, a selection list or a date board). Selection buttons can be found, for example, next to a field in an editor or next to a selected column in the Transaction Manager display.



Control	Description
Selection List	<p>Lists used to enter items in fields or columns in TRM.</p> <p>When you use a selection list, only those items valid for the field are displayed in the list. This means that when you use selection lists you always enter the correct type of information in the fields.</p> <p>Selection lists are available for all non-date fields which have a Selection Button (see above) to the right of the field. Note that it is also possible to enter data manually in these fields.</p> <p>Note: When the field refers to an entity that is created in another editor, you can right-click the field to launch the editor.</p>
Status Bar	<p>Displays the status of the application.</p> <p>If you do not want to view the status bar, you can deactivate it using the <b>View</b> menu.</p>
Switch	<p>Switches are small check boxes which you turn on to activate.</p> <p>You turn a switch on or off either by clicking the check box, or by clicking the text to the right of the check box.</p> <p>When the switch is on, a tick appears in the check box. When the switch is off, the check box is empty. Switches are normally used for exceptions.</p>
Text Field	<p>Text fields are fields in which you enter text using the keyboard or TRM tools.</p> <p>Text can be characters, numbers, dates, and so on. TRM verifies that your input is valid for the field.</p> <p>If a field name is red, this means that the field is mandatory.</p> <p>When you enter acceptable information in a mandatory field, the field name changes from red to black.</p> <p>Note: When the field refers to an entity that is created in another editor, you can right-click the field to launch the editor.</p>
Title Bar	<p>Displays the name of the application and the environment in which TRM is running.</p> <p>The title bar is located at the top of the application.</p>
Toolbar Buttons	<p>Toolbar buttons help you to enter information. If you do not want to view the toolbar, you can deactivate it using the <b>View</b> menu.</p>

### 2.2.4.1 Entering dates manually

If you enter a date manually in a date field, TRM interprets the values using the parameters defined in the Regional Settings as guidelines. The three most common formats are: "day/month/year", "month/day/year", and "year/month/day". Some deviation from the standard date format is accepted, as follows:

- The following date separators are recognized: ".", "/", and "-", but the separator defined in the Regional Settings takes precedence. The date is correctly interpreted if you use alternative date separators, but you still enter the date in the format defined in the Regional Settings.
- You do not have to enter the full year, even if the date format is defined as such in the Regional Settings:

Example	Result
dd/mm/yy	For two digits: any number less than 54 is interpreted as 20XX (for example, 2020), and any number greater than 54 is interpreted as 19XX (for example, 1986).
dd/mm/yyyy	For three digits: the entered year is used. You do not have to enter the leading zero.
dd/mm/yyyy	For four digits: the entered year is used.

- If the entered value is missing any of the date components, the date is interpreted, as follows:

Example	Result
??/mm/yyyy dd/mm ??/mm/yyyy	<ul style="list-style-type: none"> <li>• If you do not enter a day, month, or year, the missing component is substituted with the current day, month, or year, but only if the date matches the expected format.</li> <li>• If any of the entered values are greater than expected (for example, day greater than 31, month greater than 12, or year greater than 9999), then the application estimates the correct date based on the order of input, as follows:               <ul style="list-style-type: none"> <li>• If the day and month (and/or year) exceed the allowed values, it is rejected.</li> <li>• If one value is incorrect, but the others follow the date format, then the incorrect value is treated as the year and the date rules are applied to the other values.</li> <li>• If only the day is found, the month and year default to the current month and year.</li> <li>• If only the year is found, the date defaults to the last day of the previous month (relative to the current month) of the entered year.</li> <li>• If the year and month are found, the day defaults to the last day of the entered month and year.</li> </ul> </li> </ul>

## 2.2.5 Using keyboard shortcuts

You can use keyboard shortcuts to navigate and perform various actions in TRM applications, as described in the following table:

Key	Explanation
Shift + Up arrow Shift + Down arrow	Changes the day either forwards or backwards in date fields and date boards, and selects the entity forwards or backwards in the list of entities in text fields.
F2 or <b>Ctrl+E</b>	Fetches entities and transactions for the criteria entered in editors and managers.
<b>Ctrl+N</b>	Creates a new entity in editors and managers. For example, <b>Ctrl+N</b> creates a new transaction in Transaction Manager or creates a new instrument in the Instrument Editor (switching from the Query mode to the Edit Mode).
TAB	Moves forwards to the next editable field.
Shift + Left arrow	Moves backwards to the previous editable field.
ALT + Up arrow ALT + Down arrow	Opens selection lists in editors and managers.
F10 + arrow	Activates the menu bar in all applications: <ul style="list-style-type: none"> <li>• The left and right arrows move from one menu to the next</li> <li>• The up and down arrows move up or down the menu list.</li> </ul>

## 2.2.6 Using application menus

The following tables describe the menu items which are common to all types of applications in TRM.

For details of menu items that are specific to a particular application, see the relevant section of this guide.

### 2.2.6.1 File

Menu item	Description
Exit	Closes the application.

### 2.2.6.2 View

Menu item	Description
Toolbar	Shows the toolbar/status bar if the menu item is selected.
Status Bar	Hides the toolbar/status bar if the menu item is not selected. Buttons are available on the toolbar for quick access to application menu items.

### 2.2.6.3 Help

Menu item	Description
Documentation	Opens the Wallstreet Suite Help page from which you can access all user documents. You can also use <b>Search Index</b> to search for one or more keywords throughout documentation set.
Copy Version Info	Copies version information about the TRM configuration to the clipboard.
About Wallstreet Suite...	Displays information about the TRM configuration.

## 2.2.7 Customizing the display of applications

You can customize some applications in TRM according to your personal preferences by moving dockable sub-windows to rearrange the application's display.

To move a sub-window:

1. Use your mouse to drag the header on the sub-window to the place you want to reposition it on the workspace.

When you drag a sub-window to the left, right, or bottom edge of the application, a group of docking arrows appear on the screen. Each arrow in the group corresponds to an area of the application.

2. Select the docking arrow you want by holding the sub-window over the arrow.

The arrow is selected when it changes color.

3. Drop the sub-window onto the highlighted arrow.

The window snaps into place on the corresponding area of the window. If you dock more than one window in the same area of the application so that they overlap, then tabs are displayed.

---

**Note:** If you drag a dockable window, it becomes a floating window until it snaps into place on the arrow when it is docked. Floating windows might overlap and hide the other windows on display as they are not attached to the application main window.

---

## 2.2.8 Sorting data

By right-clicking on a column and choosing **Sort by this column** from the context menu, you can sort rows temporarily by a single column while keeping the regular sort order settings. Sorting by the same column multiple times flips the sorting order from ascending to descending and back.

## 2.2.9 Printing data

You can either print data from a TRM application using **File - Print** or use the **Copy - Paste** function to copy information into an external application, such as Microsoft Word™ and print from there.

You can also print your workspace as a bitmap image.

To print the open application as an image:

1. Press the **Print Screen** button on your keyboard.
2. Paste the image into an external application that can display and print graphics.
3. Print the document according to the printing methods of the application you are using.

## 2.2.10 Using manager applications

In TRM, there are a number of manager applications that are used to manage the flow and acceptance process of different types of information in the system. Managers are based on the Transaction Manager application layout.

### 2.2.10.1 Manager menus

The following tables describe the menu items which are common to all manager applications in TRM.

For details of menu items that are specific to a particular manager, see the relevant section of this guide.

#### 2.2.10.1.1 View

Menu item	Description
Query	Displays the Query view. This view is used to retrieve entities that are already in the system for further processing.
Select Columns	Opens a multi-selection list to enable you to select the columns for the layout. Before you can enter information or query existing entities you must select the columns for each view. If no columns are displayed in the manager, application, it is because you have not selected any. The available columns differ for each view. You need to click on the header of the view for which you want to select the columns to open the appropriate selection list.
Sort Columns	Opens a multi-selection list which allows you to sort the order of the displayed rows for each view by the data in the columns; for example, you can sort transactions by <b>Transaction Number</b> , or by <b>Opening Date</b> . You can specify more than one sort criterion; for example, if you select <b>Portfolio</b> as your first criterion in Transaction Manager's <b>Transaction</b> view, and <b>Transaction Number</b> as the second, the transactions are sorted first alphabetically by portfolio name, and within each portfolio, by transaction number. You can also specify whether the rows should be displayed in ascending or descending order by right-clicking the column name in the <b>Selected</b> side of the list.
Hide Columns	Allows you to remove the selected column from the display. You can reinstate the column to the display using <b>View - Select Columns</b> .
Zoom In Zoom Out Zoom to Default	Allows you to zoom into the display (to enlarge the figures), zoom out (to see more of the display), or zoom to default (to reset the original zoom).

### 2.2.10.1.2 Command

Menu item	Description
Apply	Allows you to carry out different types of commands on entities.
Reset	Commands are used to save, cancel, or reject an entity and can move the entity to a different state in the process flow.  The new state of the entity following a command depends on how the process flow has been configured for the system.
Clear	
Accept	
Reject	
Cancel	

### 2.2.10.1.3 Layout

Menu item	Description
Save	Saves any changes made to an existing layout.
Save As	Opens a dialog so that you can save a new layout. You need to enter the following information in the <b>Save As</b> dialog: <ul style="list-style-type: none"> <li>• <b>Layout Name</b> - descriptive name for the layout.</li> <li>• <b>Owner</b> - user ID of the owner of the layout. Only this user is permitted to modify the layout. You may also specify a Group ID in this field.</li> <li>• <b>User(s)</b> - user or group of users that may use the layout.</li> </ul> The layouts you save are then listed in the <b>Layout</b> selection list: see <b>Layout - My Layouts</b> .
Properties	Shows the properties of the current layout (for example, layout name, owner, and user).
Delete	Allows you to delete the current layout.  For a layout to be definitively purged from the system, it must be removed from all manager modes where it is defined.
My Layouts	Opens a multi-selection list to enable you to select the layouts that you want to be displayed in the <b>Layout</b> menu.  In the menu, the layouts are split into two sections: own and shared.

### 2.2.10.1.4 Options

Menu item	Description
Display Warnings	Allows you to specify whether you want warning messages to be displayed when there are missing or incorrect values in an entity.

### 2.2.10.2 Start-up parameters

Manager applications can be configured in different modes and layouts, each one designed for a specific purpose or to display entities at a certain state in their process flow.

The start-up parameters available to launch a specific layout or mode for manager applications are listed in the appendix.

See *C.11 Transaction Manager* on page 685.

### 2.2.10.3 Manager modes

Different modes of a manager can be configured to be used for a particular purpose or to display entities in a particular state in the static data flow. Permissions are set up and applied to users to limit their access to the different modes according to their responsibilities in the organization.

At all points in the process flow, an entity has a state: when an entity moves forwards or backwards in the flow, its state changes. The state of the entity depends on where it is in the flow. An entity can only have one state at a time.

In a typical TRM implementation, a different manager mode may be configured for each stage in the flow to correspond to each of the entity states used: it is possible to set up an unlimited number of verification stages. Only the entities with the appropriate state are visible in the corresponding mode.

For example, a static data flow could be set up as follows:

State	Description
Open	The first stage of the verification flow showing any entities that have been edited.
Verify	4-eyes verification stage.
Final	For all entities that have successfully completed the static data flow.

It is also possible to set up a separate manager mode for a specific task. For example, a Settlement Processing mode can be configured that only allows manual netting or splitting of settlements.

---

**Note:** See the *TRM System Administration Guide* for more information.

---

#### 2.2.10.4 Customizing manager applications

Manager applications consist of several views in which the entity information is displayed. The views are opened from the **View** menu.

You can move and rearrange the selected views in the window according to your personal preferences. You can select the information you want to see in each view, by selecting **View - Select Columns**.

It is possible to save the current display by saving it as a layout in the **Layout** menu using **Layout - Save**. You can create and save multiple layouts either for your own personal use, or to be shared by other users.

When you start the application, the default layout is automatically displayed. You can create as many layouts as you require and tailor each view according to your needs.

The views in the layout are displayed as individual windows: you can detach and reposition the views in a manager application in the same way as you can reposition the sub-windows in Application Manager: see *2.2.7 Customizing the display of applications* on page 35.

#### 2.2.10.5 Retrieving entities

To allow you to process existing entities, you need to retrieve them into the appropriate manager application.

Retrieving entities is done in the **Query** view of the manager application. Entities are retrieved from a blank transaction row called a Query Row. In this row you enter the criteria that you want the retrieved entities to match.

When the entities have been retrieved, you need to move to another of the manager's views as you cannot process entities in the **Query** view. You can only retrieve entities that have the relevant state that corresponds to the manager mode.

You can use selection criteria in several fields to retrieve entities. The criteria entered are connected with an AND operator, which means that all the selection criteria must match simultaneously.

#### 2.2.10.6 Looking up information in another manager application

To allow you to quickly look up information, such as messages, FIN messages, settlements, transactions from inside some of the other manager applications (Transaction Manager, Settlement Processing, and so on), you can use the **Lookup** right-click option from some of the views. The

corresponding manager application opens enabling you to continue processing. See the relevant sections for more information about how to use these quick lookup options.

### 2.2.10.7 Changing the display fonts and colors

You can change the text (including font style, size, color) and/or the background color of the following cell types:

- Header
- Invalid cells
- Mandatory cells
- Mandatory invalid cells
- Normal cells
- Read-only cells
- Read-only invalid cells
- Entities updated in real-time

To change display fonts and colors for a specific type of cell or column in a manager:

1. Right-click the column header of the view and select **Appearance...** from the list of options.
2. In the **Visual Settings** dialog, select the cell type you want to change from the **Style** field.
3. Click **Text** or **Background** to change the text (font style, size, or color) or the background color you want to apply to the cell type.

---

**Note:** You can see what these settings look like in the Preview area of the dialog.

---

4. Select **In Use** to enable the settings.
5. Click **OK** to save the setup.

**Hint:** To restore the default settings, click **Reset** to restore the default values of one cell type or click **Reset All** to restore the default values of all cell types.

---

6. Save the layout using **Layout - Save**.





## 3.1 Static data entities

A static data entity is the generic term for data that is set up in TRM and that changes little over time. Static data entities include data such as currencies, clients, and portfolios. Static data entities are also referred to as core data.

Static data entities are used in all aspects of TRM, for example, as components of deal entry, or as parameters to monitor treasury positions and for running reports. Because these entities are used so often, and assigned to so many other entities, they need to be set up before TRM can be used.

Static data entities are made up of pieces of data called attributes. Attributes define an entity's characteristics, and include such data as an identifying code (ID), and name. For example, the currency used in the United States may be set up with the ID USD, and the name US Dollar.

The order for setting up entities is dependent on the restrictions of assigning one type of static data to another and the interdependencies between them. When you create static data entities, you may often need to select something that is itself an entity. For this reason, the order in which you create entities is very important. In some cases, you may even need to create entities in parallel.

The order in which static data definition is described in this chapter reflects the order in which it needs to be done: for example, setting up a client is described before setting up a portfolio, since you must define clients before you define portfolios. TRM will not allow you to create a portfolio if no client exists.

## 3.2 Static Data Editor

Static data entities are set up and managed in applications called editors. Most editors are defined as a layout based on the application Static Data Editor. Each editor layout is available as an individual application in Application Manager.

Attributes that apply to the whole entity definition are entered in the upper part of an editor. Any pages in the lower part of the editor are used to enter attributes that apply only to one element that makes up the entity.

The upper and lower parts of an editor contain a number of fields and switches which you use to define the entity's attributes (see *2.2.4 Using application controls* on page 32 for more information).

The List, Group, and Hierarchy tabs on the left side of the editor contain the static data entities that have already been defined in the editor.

### 3.2.1 Static Data Editor menus and toolbars

The following tables describe the menu items which are specific to Static Data Editor and any editor layout which is based on this application. Some of the menu items are also available as icons in the toolbar.

The menu items which are common to all applications are described in *2.2.6 Using application menus* on page 34.

### 3.2.1.1 File

Some of these menu items are also available as icons in the Standard toolbar.

Menu item/shortcut	Description
New <b>Ctrl+N</b>	Switches to the Edit mode where you can define a new entity. Note: To switch back to the Query mode, press <b>Ctrl+Q</b> or use the <b>Query Mode</b> icon in the Standard toolbar to perform the same action.
Open <b>Ctrl+O</b>	Opens the multi-selection list to allow you to select an editor layout.
Refresh	Refreshes the information displayed.
Save <b>Ctrl+S</b>	Saves modifications to the entity. The item is grayed out (unavailable) until you have entered information in the mandatory fields (the fields shown in red). Static data entities are distinguished by their IDs; so if you change the existing ID, TRM assumes that you are creating a new entity rather than modifying an existing one, and makes the <b>Save As New</b> item available instead.
Save As New	Saves the entity as a new entity. The item is grayed out (unavailable) until you have supplied a new ID in the <b>ID</b> field, and entered information in the mandatory fields (the fields shown in red). Static data entities are distinguished by their IDs; so if you make changes to the entity but not to its ID, TRM assumes that you are modifying the existing entity which has that ID, and the <b>Save</b> item is made available instead.
Delete	Deletes the current entity.
First Previous Last Next	Goes to the first, previous, last, or next entity in the list of defined static data entities.

### 3.2.1.2 Edit

Some of these menu items are also available as icons in the Standard toolbar.

Menu item	Description
Copy	Copies the selection onto the clipboard.
Paste	Inserts the contents of the clipboard.
Snapshot	Copies the entity list to the clipboard.
Query Mode	Switches to the Query mode from the Edit mode. (This command is only available in the Edit mode.)
Clear Query <b>Ctrl+Delete</b>	Clears the query criteria from the editor's fields in the Query mode. If the fields have already been cleared, the item is grayed (unavailable). Note: You can also use the <b>Clear Query</b> icon in the Standard toolbar to perform the same action.
Query <b>F2</b> or <b>Ctrl+E</b>	Runs the query and displays the entity list filtered by the query criteria entered in the Query mode. Note: You can also use the <b>Execute Query</b> icon in the Standard toolbar to perform the same action.
Preferences	Allows you to define editor behavior (for example, for confirmations) and the appearance of the editor.

### 3.2.1.3 View

Menu item	Description
Select Columns	<p>Opens a multi-selection list to enable you to specify the order in which the defined static data is displayed in the <b>List</b> tab on the left side of the editor. You can display the static data entities by ID, by Name, or by any other attribute that is available in the editor layout.</p> <p>The columns in the <b>Selection</b> dialog are organized into groups: the <b>Main</b> group contains attributes found in the upper part of the editor; the other groups contain the attributes found in the pages in the lower part of the editor.</p> <p>See also <i>3.3.7 Finding static data entities</i> on page 46.</p>
Select Grouping Columns	<p>Opens a multi-selection list to enable you to define how the entities are grouped in the Group tab on the left side of the editor.</p>

### 3.2.1.4 Tools

Menu item	Description
Reports	<p>Shows a list of reports specific to each static data editor. Generates a report showing the static data already defined in the editor.</p> <p>See <i>3.3.9.5 Generating reports on static data entities</i> on page 50 for more information.</p>
Swap View/Edit Mode SDM Accept SDM Reject	<p>These items are only active in this menu if your system is SDM-enabled: see <i>3.4 Managing SDM-enabled static data</i> on page 51 for more information.</p>

### 3.2.1.5 Standard toolbar

Menu item	Description
Query Mode	Switches to the Query mode from the Edit mode.
Clear Query	Clears the query criteria from the editor's fields in the Query mode.
Execute Query	Runs the query and displays the entity list filtered by the query criteria entered in the Query mode.
Swap View/Edit Mode	This drop-down list is always visible, but only active when your system is SDM-enabled. If your system is not SDM-enabled, the <b>Swap View/Edit Mode</b> drop-down list is empty and SDM commands are not active. See <i>3.4 Managing SDM-enabled static data</i> on page 51 for more information.
SDM Accept SDM Reject	These commands are only active if your system is SDM-enabled and you have switched to the Edit mode.

## 3.2.2 Start-up parameters

It is possible to alter the start-up parameters so that Static Data Editor launches in a different mode. See *C.10 Static Data Editor* on page 684 for information about the options available.

## 3.2.3 Editor layouts

It is possible to create your own customized layouts for many of the editors. These layouts are accessible through the Static Data Editor application when you select **File - Open**.

Layouts allow you to define which data is present in an editor and can be used to provide simplified editors containing a minimal set of data. They can also be used to create multiple enter forms for the data.

It is important to ensure that any fields marked as mandatory (red fields) are available in the layout. If mandatory fields are hidden from the layout, it will be impossible to create and save the entities.

---

**Note:** The creation of customized layouts requires some configuration and is usually set up during implementation of the system.

---

### 3.2.4 Query and Edit modes

When you first launch an editor, it opens in Query mode. In Query mode, you can search for an entity that has already been defined in the editor by entering search criteria in any of the fields and selecting **Edit - Query**. All the matching static data display in the entity list on the left side of the editor: see 3.3.7 *Finding static data entities* on page 46.

When you select an entity from the list or select **File - New**, the editor switches to Edit mode. In Edit mode, you can make and save changes to an existing entity or create a new static data definition. You can switch from the Edit mode to the Query mode by pressing **Ctrl+Q**.

#### 3.2.4.1 Using auto-complete

The role of the auto-complete feature is to predict the word you are typing. The auto-complete feature works in fields with a selection list. As you type text in a field, a selection list appears with possible matches. If you type the letter "F", the auto-complete feature first displays all matches that begin with the letter "F", and then displays all matches that contain the letter "F" somewhere within the match. There may be no matches (in which case no list appears), only one match, or several possible matches.

The example below shows that if you type the word FUND, the selection list displays all matches that begin with FUND and then displays all matches that contain the word FUND. The nearer the word FUND is to the beginning of the match the higher up it appears in the selection list. When FUND appears in the same position in the selection list, the matches are displayed in alphabetical order.

Text	Auto-complete matches	Description
FUND	FUND-0	FUND appears at the beginning of the match
	T-FUND-BALANCE	FUND contained within the match. FUND is in the same position within three matches so the matches are displayed alphabetically
	T-FUND-CUSTOM	
	T-FUND-EUROPE	
	T-EUROPE-FUND	FUND contained later on in the match is displayed after other matches

If a number of matches are found, the auto-complete feature displays a **More** option. If you click **More**, the same selection list appears as the one that appears when you click on the field button.

---

**Note:** You can cancel the auto-complete feature by pressing **Esc**.

---

## 3.3 Managing static data in Static Data Editor

### 3.3.1 Creating new static data entities

To create a new entity:

1. Open the appropriate editor or layout from Application Manager (for example, if you are creating a new currency, open Currency Editor).
2. Enter the attributes that apply to the whole entity definition in the upper part of the editor.  
For all entities, the first two fields are for giving an ID and a name to the entity. Since an entity's ID is the one attribute that distinguishes it from all other entities of the same type, the ID must be unique.
3. In the pages in the lower part of the editor, specify any additional information that is needed for the entity definition.
4. Click **Add** to add the information to the definition.  
If you modify any of the attributes in the pages, click **Update**. If you want to delete any of the attributes, select the attribute and click **Remove**.
5. When you have entered all the information you require for this entity, save the whole static data definition by selecting **File - Save As New**.

### 3.3.2 Creating static data from an existing entity

To create an entity by modifying existing static data:

1. Open the appropriate editor or layout from Application Manager (for example, any non-SDM enabled editor).
2. Select the existing entity that resembles the static data you want to create, from the list of static data on the left side of the editor.
3. Give the entity a new ID in the **ID** field. The ID must be unique.
4. Modify any other values in the upper part of the editor that you need to change.
5. Make any necessary changes to the data in the pages in the lower part of the editor, and click **Add**, **Update**, or **Remove**, as appropriate.
6. Save the whole static data definition by selecting **File - Save As New**.

---

**Note:** If you forget to save the static data entity definition, any updates you have made in a page will be lost when you quit the entity, even if you click **Add**, **Update**, or **Remove** to update at the page level.

---

### 3.3.3 Creating static data entities in parallel

Sometimes, it is not possible to define one type of entity unless another type of entity exists. In this case, the static data definitions need to be created in parallel.

If you need to fill in a mandatory field (labeled in red) to create an entity, but the static data definition that you need has not been created yet, right-click in the field and select the **Edit entity** menu option.

This action opens the required editor and enables you to define the static data entity. In this way, you can create static data entities that are interdependent.

### 3.3.4 Modifying static data entities

To modify an entity in TRM:

1. Open the relevant editor from Application Manager (for example, any non-SDM enabled editor).
2. Select the entity you want to modify from the list of static data on the left side of the editor.
3. Modify the values that you want to change in the upper part of the editor.
4. Modify the attributes in the pages in the lower part of the editor, and click **Add**, **Update**, or **Remove**, as appropriate.
5. Save the modified static data definition by selecting **File - Save**.

---

**Note:** If you try to close the editor without saving your modifications, a message displays to remind you that any changes you made will be lost if you do not save them.

---

### 3.3.5 Deleting static data entities

You can only delete static data entities that are not being used in TRM. If you try to delete a static data definition that is currently being used by a transaction, TRM prevents it from being deleted, and displays a message explaining why your delete request was rejected.

To delete an SDM enabled entity in TRM:

1. Open the relevant editor from Application Manager (for example, any non-SDM enabled editor).
2. Select the existing entity that you want to delete.
3. Select **File - Delete**.

### 3.3.6 Verifying static data entities

In TRM, it is possible to apply the 4-eyes principle to certain entities so that a user can check any data modified by another user.

If you try to edit the data for an entity to which the 4-eyes principle has been applied, a **Verification** dialog is displayed when you attempt to save or delete the static data entity. In this case, a second user (or verifier) with appropriate permissions must enter his or her user name and password to enable your changes to be applied.

When you carry out an action which requires 4-eyes verification, the details of the action are written to a verification log.

The setting up of the 4-eyes verification principle requires some configuration and is usually set up during implementation of the system.

---

**Note:** In addition to the 4-eyes verification, it is also possible to set up a more complex system to verify some static data entities: see *3.4 Managing SDM-enabled static data* on page 51 for more information.

---

### 3.3.7 Finding static data entities

If you have defined many entities in an editor, it may be time-consuming to search for the particular entity you need to view, modify, or delete. Using search criteria, you can isolate your search to query only those static data entities that contain the attributes you specify.

There are two ways to find an entity; using the auto-complete search and using a wildcard search.

### 3.3.7.1 Auto-complete search

To find an entity using the auto-complete feature:

1. Make sure the editor is in Query mode by selecting **Edit - Query Mode** (or by pressing **Ctrl+Q**).
2. In the editor, enter your search criteria. For example, if you want to search for all templates that begin with the letter "F", typing "F" in the Template field will display a selection list of all templates beginning with the letter "F".

For more details on the auto-complete feature, see *3.2.4.1 Using auto-complete* on page 44.

---

**Note:** Auto-complete can only be used in fields that have selection lists.

---

### 3.3.7.2 Wildcard search

To find an entity using a wildcard search:

1. Make sure the editor is in Query mode by selecting **Edit - Query Mode** (or by pressing **Ctrl+Q**).
2. In the editor, enter your search criteria.
  - The search is case-sensitive: for example, you will not find US Dollars if you enter "us dollars".
  - You can use the percentage sign ("%") as a wildcard matching for many characters, for example:

Search criteria	Enter
Starting with "F"	F% in a <b>Name</b> field returns all names beginning with the letter "F".
Containing "enc"	%enc% in a <b>Name</b> field returns all names containing the letters "enc".
Ending with "ing"	%ing in a <b>Name</b> field returns all names ending with the letters "ing".

- You can use the underscore sign ("\_") as a wildcard matching for one character, for example:

Search criteria	Enter
Three characters starting with "A"	A__ in an <b>ID</b> field returns all three-character IDs beginning with the letter "A". If an ID contains more than three characters, it will not match the search criteria.  Note: In this example, there are two underscore signs to replace the two missing characters.
Starting with a three character prefix and ending with "- LOAN"	___ - LOAN in an <b>ID</b> field returns all IDs starting with a three-character prefix and ending with "- LOAN".  Note: In this example, there are three underscore signs to replace the three characters in the prefix. You should also include any spaces in the search criteria.

- You can use as many fields and switches as you like to enter your query, but TRM will only search the static data that match all and exactly the search criteria you give.

For example, in Instrument Editor, if you want to find all defined instruments that match a particular **Instrument Type**, select the instrument type and run the query. If you want to find all instruments that match a particular type and use a particular feature, select the instrument type and then add the feature that you want to query to the **Feature** page and run the query.

3. Start the search by selecting **Edit - Query**.

Static data that match the attributes entered are displayed in the entity list on the left side of the editor. If the search still returns too many entities, using the **View - Select Columns** menu option, you can modify the display order of the entity list to search for the entity according to a specific attribute.

### 3.3.8 Using templates to create static data entities

Certain static data entities (for example, instruments, clients and portfolios) can be set up with the aid of a template. In a template, you can define a set of data for a certain business use, which you would then use to set up static data following the same pattern.

A template contains all the fields and switches that are available in the corresponding editor. In the template, you can activate or disable the fields and switches and specify which attributes need to be editable, available, or mandatory in the editor. You can also use a template editor to restrict the values displayed in selection lists.

When you select a template in the corresponding editor, the template will automatically fill in the information, so that you only have to provide a limited set of values when you create the entity. Using templates not only simplifies the set up of static data and saves time, but also reduces the risk of errors.

Template editors are powerful tools and have a direct impact on how entities are set up. You should verify that the template settings in an editor are those you had intended. The easiest way to do this is to open the editor, apply the template you have created, and check that your settings have been applied correctly.

Instrument template differs to some extent from other templates due to the feature-driven nature of instrument entity and corresponding editor. These instrument-specific aspects of the template concept are described in the *TRM Instruments: Processing and Calculations Guide*.

#### 3.3.8.1 Defining templates

To define a template:

1. Open the template editor for the type of static data you wish to customize.
2. Enter the template's ID, name, and domain in the upper part of the editor.
3. Customize the fields and switches as necessary.

There are three settings which you can apply to fields or sub-entities. These are:

- **Mandatory** - you must provide values for mandatory attributes. When this setting is applied on a sub-entity, at least one valid entry must be made to the relevant page of the corresponding editor. Labels for mandatory fields or editor pages are displayed in red in the corresponding editor.
- **Editable** - you have access to the field and can provide a value. When this setting is applied on a sub-entity, all entries in the relevant page of the corresponding editor are editable. All mandatory fields and pages are editable by default.
- **Ignore Template List** - you will not override a value which was defined before you applied the template. This means that if a field is blank in the template, if you apply the template to an entity for which a value already exists for that field, the existing value is not replaced. When this setting is applied on a sub-entity, existing entries in the relevant page of the corresponding editor are kept unchanged.

4. Save the template using **File - Save As New**.

---

**Note:** The fields and switches are explained in the sections relating to the setting up of the specific static data entities.

---

#### 3.3.8.2 Applying templates

Once you have created a template you can apply it to a static data entity by selecting the template in the corresponding editor's **Template** field. The behavior of the application changes to take the logic specified within the template into consideration.



When you are creating templates, the fields which are mandatory (labeled in red) in the editor are also marked as mandatory in the template.

---

**Note:** When you use a layout together with a template, fields marked as mandatory in the template must also be available in the layout. If mandatory fields are hidden by the layout, it will not be possible to create and save static data definitions: see *3.2.3 Editor layouts* on page 43.

---

### 3.3.9 Common Static Data Editor attributes

The following sections describe attributes which are common to all editors based on the static data editor layout.

#### 3.3.9.1 Assigning domains

In TRM, domains are used to restrict information access within the same database: for example, if your organization has one Treasury Center in the USA and another in Europe, you can prevent them seeing each other's static data by assigning different domains.

You assign the domain to the entity definition in the **Domain** field in the upper part of the editor.

In some editors, there is also a separate **Domains** page in the lower part of the editor. Here, you can assign several domains to each entity, but only if the domain selected in the upper part of the editor allows you to do so.

---

**Note:** By default, if a domain is not specified in the entity definition, then the static data definition will be available in all domains.

---

#### 3.3.9.2 Assigning properties

Properties are used to add miscellaneous pieces of information to a static data entity's definition for which there is no specific field or switch in the editor. The properties you will need are added at implementation according to your organization's requirements and are displayed in the lower part of the editor in the **Properties** page.

When you assign a property to an entity, you also need to assign the corresponding value.

**Hint:** You can create more properties using Property Editor (see *3.39 Properties (optional)* on page 148).

---

To assign a property to an entity:

1. Select the **Properties** page in the lower part of the static data editor layout.
2. Define the property's attributes using the information in the following table:

Information	Description
Property	Property you want to assign to the entity.
Value	Value for the property.

3. Click **Add** to assign the property definition to the entity.
4. Save the whole static data entity definition using **File - Save**.

#### 3.3.9.3 Adding links

In some editors (such as Client Editor or Instrument Editor), it is possible to attach multiple information sources to an entity using the **Links** page. You add links to provide additional information in an entity's definition.

You can add a link to any file stored on your network (for example, a link to a document which contains information related to trading a specific instrument) or a hyperlink to an Internet URL (such as, an issuer's web site). Note that you can also attach a link directly to a transaction in Transaction Manager: see *8.4.7.6 Adding information links to deals* on page 294.

To add a link to an entity:

1. In the **Links** page, fill in the fields using the information in the following table:

Information	Description
Name	Name of the document or web page.
Address	Address of the file: for example, a URL, or the path to a file accessible from your computer. Note: If you click the selection list, the <b>Browse for Folder</b> dialog is launched.
Comment	Any additional information you want to enter which is relevant to the definition.

2. Click **Add** to add the link to the entity.
3. Save the whole static data definition using **File - Save**.

#### 3.3.9.4 Viewing the modification history

In the **History Log** page in the lower part of some editors, you can review the history of all modifications made to an entity definition since it was defined in the system. These fields are read-only, and display the following information:

Information	Description
Object	Object, such as a specific table in the database, on which the change was made.
Date	Date and time when the change was made.
Action	Type of action the user has performed.
User	User ID that made the change.
Field	Field that was modified in the entity definition.
From	Value of the field before the change was made.
To	New value of the field.

Furthermore, you can produce a report called History Log which shows which user created or modified a static data entity.

See *B.25 History Log Report* on page 668 for details of the report's parameters.

#### 3.3.9.5 Generating reports on static data entities

Editors have a **Tools - Run report** menu option, from which you can generate a report showing the entities that have been created in that editor.

For example, if you open Currency Editor and select **Tools - Run report**, a report will be generated that shows all currencies that have been created, plus details of their attributes.

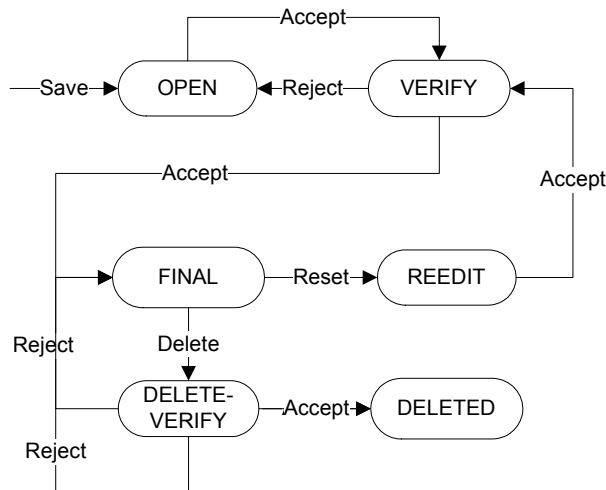
You can control which attributes of each static data definition you want to view, by selecting the relevant report columns (there is a report column for each attribute). See *7.2 Managing reports* on page 239 for more information.

For some static data entities, there is an additional option to drill down further into the definition's underlying attributes: see *7.2.3 Drilling down into reports* on page 239.

## 3.4 Managing SDM-enabled static data

In addition to the simple 4-eyes verification (described in the section 3.3.6 *Verifying static data entities* on page 46), it is possible to set up a more complex system to verify some types of static data. This more complex system is an enhanced static data management system (SDM) which uses a static data process flow concept.

The following diagram illustrates an example of the default flow:



At all points in the static data flow, an entity has a state: when an entity moves forwards or backwards in the flow, its state changes as illustrated in the previous figure. The state of the static data depends on whether it is considered to be active or edited in TRM:

- Static data is said to be active when it has reached a state in which it can be used in TRM (for example, as a parameter in a report or activity, to create another entity, or as input data for capturing a deal).
- Static data is said to be edited when it cannot be used in TRM because it has not completed the process flow.

When SDM is enabled in TRM, the Static Data Editor layout behaves in a slightly different way to the standard layout in order to accommodate the static data flow concept when you are creating, modifying, or deleting static data entities. That is, when you carry out an action on an entity in an SDM-enabled editor, the entity enters the process flow and needs to be moved forward or backward in the flow. This validation is done in Static Data Manager.

The Static Data Manager offers more specialized static data management tools than those provided by the standard static data management system. Static Data Manager allows you to track the progress of SDM-enabled entities in the flow, monitor the changes made to the static data entity, move it forward or backwards in the flow, and view the changes made in more detail than is available in the **History Log** page of Static Data Editor.

### 3.4.1 SDM-enabled Static Data Editors

When SDM is enabled in TRM and in the particular editor, SDM commands are active in the editor layout. It is also indicated by the presence of both the SDM heading and the **State** field in the upper part of the editor.

The SDM heading corresponds to the following modes:

- **SDM Read-only** (View mode) for querying active data. SDM commands are not available.
- **SDM Edit** (Edit mode) for creating new and modifying existing data, and for moving data through the static data flow. SDM-enabled static data entities can only be created, modified, and deleted in the Edit mode.

The **State** field displays the current state of the static data definition in the entity flow.

---

**Note:** In the current version of TRM, SDM has been enabled for the following static data editors: Client, Country, Currency, Calendar, Calendar Group, Gap Set, Settlement Advice Method, Settlement Transfer Method, Market Info Source, Transaction Charge, Cashflow Charge, Portfolio, Rule, Settlement Rule Editor and all types of reference rate editors (including IR Quotes and Yield Curve).

---

In future versions, it will be possible to manage all static data entities in this way.

---

### 3.4.1.1 SDM-enabled editor menus

In SDM-enabled editors, some of the menu items behave in a slightly different way to the corresponding items in a standard Static Data Editor layout (see 3.2.1 *Static Data Editor menus and toolbars* on page 41 for information about the menu items that are common to all editors).

In the **File** menu, the affected menu items are as follows:

Menu item	Description
New	Creates a new entity as in the standard editor. However, when the entity is saved, it is created in the <b>Open</b> state and must be accepted to move forward in its processing. See 3.4.1.3 <i>Creating static data entities in SDM-enabled editors</i> on page 53.
Delete	An SDM-enabled entity can only be deleted either before it is in a state in which it can be used in TRM or when it is in the <b>Final</b> state (and in <b>Edit</b> mode). When you delete an entity, the entity is given the <b>Delete-Verify</b> state (default process flow) and must be accepted in Static Data Manager to be fully deleted (state <b>Deleted</b> ). See 3.4.1.5 <i>Deleting static data entities in SDM-enabled editors</i> on page 54.
Save	The <b>Save</b> command takes on a special meaning when applied to save modifications on an entity that is currently in the <b>Final</b> state. See 3.4.1.4 <i>Modifying static data entities in SDM-enabled editors</i> on page 53

In SDM-enabled editors, the **Tools** menu and **Standard** toolbar include the following commands:

---

**Note:** If your system is not SDM-enabled, these commands are not active.

---

Item	Description
Swap View/Edit Mode	Allows you to switch from <b>SDM Read-only</b> (View mode) to <b>SDM Edit</b> (Edit Mode), and vice versa.
SDM Accept SDM Reject	For SDM-enabled entities, these commands allow you to move the current entity to the next state in the static data flow ( <b>SDM Accept</b> ), or backwards in the flow ( <b>SDM Reject</b> ). These commands are only available in the <b>SDM Edit</b> mode. See 3.4.1.2 <i>Accepting and rejecting static data entities in SDM-enabled editors</i> on page 52.

### 3.4.1.2 Accepting and rejecting static data entities in SDM-enabled editors

To move an entity forward or backward in the flow you need to either accept or reject the new entity. Only entities that have progressed through the static data flow until they have reached a state in which they can be used in TRM can be considered as active, for example, **Final**. Entities that are still in an **Edit** mode cannot be used in TRM until their process flow is complete.

- **SDM Accept** in the standard toolbar allows you to move the current entity to the next state in the flow, provided:
  - You are in the Edit mode.

- There is a next state defined in the process flow.
- All other entities that are necessary to process this entity have been created and are considered active in TRM.

The order for setting up entities is dependent on the restrictions of assigning one entity to another, and the interdependencies between them. When you create entities, you may often need to select other entities. For this reason, the order in which you create entities is very important. In some cases, you may even need to create entities in parallel.

**Hint:**

---

TRM enables you to right-click an entity field in most of the editors in order to open the relevant editor directly from that editor.

---

- You are authorized to perform this operation.
- **SDM Reject** in the standard toolbar allows you to move the current entity backwards in the flow, provided:
  - You are in the Edit mode.
  - There is a reject state defined in the flow.
  - You are authorized to perform this operation.

### 3.4.1.3 Creating static data entities in SDM-enabled editors

To create a new entity:

1. Open the relevant editor from Application Manager (for example, to create a new currency, open Currency Editor).
2. Select **Tools - Swap View/Edit Mode** or select **SDM Edit** from the **Swap View/Edit Mode** drop-down list to switch to the **Edit** mode.
3. Enter the relevant data. Refer to the corresponding section in *3.3 Managing static data in Static Data Editor* on page 45.
4. Save the entity definition by selecting **File - Save As New**.

The new entity is created in the **Open** state and needs to be accepted before it can move forward in the static data flow.

### 3.4.1.4 Modifying static data entities in SDM-enabled editors

To modify an entity:

1. Open the relevant editor from Application Manager (for example, to modify a client, open Client Editor).
2. Select **Tools - Swap View/Edit Mode** or select **SDM Edit** from the **Swap View/Edit Mode** drop-down list to switch to the **Edit** mode.
3. Select the entity you want to modify from the list of entities on the left side of the editor and modify the data.
4. Save the modified entity by selecting **File - Save**.

The state of the entity changes and needs to be accepted before it can move forward in the static data flow.

---

**Note:** When you modify or delete an entity, a copy of the modified or deleted entity is made. That is, there can be two instances of the entity, one that is the active entity and the other which corresponds to the modified (**Re-edit** state) or deleted copy (**Delete-Verify** state). The copy will become active, in the case of a modification, when it reaches the relevant state; or deleted, in the case of a delete, when the delete process is validated. An editing or deleting sequence can be canceled by rejecting the entity in the **Re-edit** state or **Delete-Verify** state. In this case, the entity is restored to its previous state.

---

### 3.4.1.5 Deleting static data entities in SDM-enabled editors

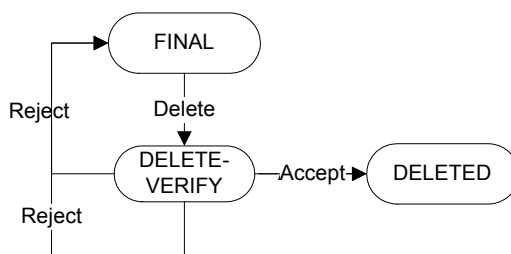
The delete process depends on whether or not the entity you want to delete is already in a state in which it can be used in TRM (i.e. the entity is active or not). You can delete entities that are not yet active directly in the editor without any further processing. If the entity is in the **Open** state, moving the entity backward in the flow (**SDM Reject**) causes the entity to be deleted.

For active entities, you need to initiate the delete process in the editor and then validate it in Static Data Manager by moving the entity forward in the flow. The deleted entity remains visible in the editor, but only in the read-only mode, and is still available in TRM until it is moved forward to the **Deleted** state.

An entity that is flagged for deletion (i.e. state **Delete-Verify**) is still available in the system until it is completely deleted. You cannot delete entities that are already used in TRM.

In the event that the delete is rejected in Static Data Manager, the entity is returned to its previous state, i.e. **Final**.

The following diagram illustrates the default flow of the delete process:



To initiate the delete process of an entity:

1. Open the relevant editor from Application Manager (for example, to delete a country, open Country Editor).
2. Select **Tools - Swap View/Edit Mode** or select **SDM Edit** from the **Swap View/Edit Mode** drop-down list to switch to the **Edit** mode.
3. Select the entity you want to delete from the list of entities on the left side of the editor.
4. Select **File - Delete** or click **Delete** to move the entity to the **Delete-Verify** state.

The deleted entity remains visible in the editor, but only in the read-only mode and is still available in TRM until it is moved forward to the **Deleted** state in Static Data Manager, see 3.4.3.4 *Validating deleted SDM-enabled entities* on page 58.

---

**Note:** When you modify or delete an entity, a copy of the modified or deleted entity is made. That is, there can be two instances of the entity, one that is the active entity and the other which corresponds to the modified (**Re-edit** state) or deleted copy (**Delete-Verify** state). The copy will become active, in the case of a modification, when it reaches the relevant state; or deleted, in the case of a delete, when the delete process is validated. An editing or deleting sequence can be canceled by rejecting the entity in the **Re-edit** state or **Delete-Verify** state. In this case, the entity is restored to its previous state.

---

## 3.4.2 Static Data Manager

Static Data Manager is an application which is based on the Manager application layout (see 1.4.3 *Managers and Boards* on page 26).

In Static Data Manager, static data can be managed in a similar way to transactions using similar state and mode concepts as those in Transaction Manager's transaction flow.

Static Data Manager offers more specialized static data management tools than those provided by the standard static data management system. It allows you to track an entity's progress in the flow, monitor the changes made to the entity, move it forward or backwards in the flow, and view the changes made in more detail than is available in the **History Log** page of Static Data Editor.

### 3.4.2.1 Static Data Manager menus

The following tables describe the menu items which are specific to Static Data Manager.

Other menu items which are common to all applications are described in *2.2.6 Using application menus* on page 34.

#### 3.4.2.1.1 View

Menu item	Description
Query	Displays the <b>Query</b> view. This view is used to retrieve static data already in the system for monitoring or further processing: see <i>3.4.2.4.1 Query</i> on page 56.
Entity	Displays the <b>Entity</b> view. This is the main view, which is always visible. The results of the query are displayed in this view: see <i>3.4.2.4.2 Entity</i> on page 56.
Entity Log	Displays the <b>Entity Log</b> view. In this view, you can view information about the modifications made to the static data: see <i>3.4.2.4.3 Entity Log</i> on page 56.
Entity State Log	Displays the <b>Entity State Log</b> view. This view displays auditing information on the flow history of the selected entity: see <i>3.4.2.4.4 Entity State Log</i> on page 57.

### 3.4.2.2 Start-up parameters

Static Data Manager is a special Transaction Manager mode, designed specifically for processing SDM-enabled entities through the static data flow.

The start-up parameter used to open Transaction Manager's Static Data Manager mode is:

```
FKTransactionManager.exe -m [ --mode ] arg -c SDM.xml
```

See *C.11 Transaction Manager* on page 685 for information about the options available.

### 3.4.2.3 Static data modes

Different modes of Static Data Manager can be configured to be used for a particular purpose or to display static data in a particular state in the workflow. Permissions are set up and applied to users to limit their access to the different modes according to their responsibilities in the organization.

When a static data entity is created or modified, it can be retrieved in Static Data Manager for verification. The changes made to the entities' attributes can be viewed and verified by a user with the necessary permissions.

For example, the Open mode of Static Data Manager could be used to view entities that have been modified or created, whereas the Verify mode could be used to verify the data before the changes are accepted.

After verification, the entity can be processed using the accept or reject commands in either Static Data Manager, or in the corresponding SDM-enabled editor layout, see *3.4.1.2 Accepting and rejecting static data entities in SDM-enabled editors* on page 52.

### 3.4.2.4 Static Data Manager views

In Static Data Manager, the following views are available: **Query**, **Entity**, **Entity Log**, and **Entity State Log**.

Each view has its own list of columns in which the static data information for the view is displayed. You can select the information you want to display in each view using **View - Select Columns**.

### 3.4.2.4.1 Query

In the **Query** view, you provide parameters to retrieve the static data entities you want to view. In this view, the following columns are available for querying:

Column	Description
Entered By	ID of the user who created the entity.
Entity Key Entity Type	Type of entity (for example, Client, Country, Currency, and so on) or key.
Initiated By	ID of the user who started a create, update, or delete sequence of events.
State	State of the entity (to retrieve entities in a specific state).
Updated By	ID of the user who made the last change.

### 3.4.2.4.2 Entity

In the **Entity** view (the main view), the results of the query are displayed. The following columns are available:

Column	Description
Entity Key Entity Type	Type of static data entity (for example, Client, Country, Currency, and so on) or key.
Initiated By	ID of the user who started a create, update, or delete sequence of events on the entity.
State	Current state of the entity.
Status	An optional status about the last accept/reject operation performed on the entity. (This information is particularly useful in environments where CMM is integrated and provides more precise information as to why an entity may have failed to synchronize with CMM: see 3.4.4.1 <i>Sharing SDM-enabled data with CMM</i> on page 58.)
Updated By	ID of the user who made the last change to the entity.
Entered By	ID of the user who created the entity.

### 3.4.2.4.3 Entity Log

In the **Entity Log** view, you can view information about the modifications made to the entity.

This view is similar to the **History Log** page in Static Data Editor but contains more information for the selected entity. It shows which field has been modified in an entity, and also shows the addition and removal of sub-entities (for example, Bank Accounts for clients).

The **Entity Log** view is particularly useful to users who have to verify changes made by other users: it gives them an effective picture of the changes from the currently active version.

The following columns are available in the **Entity Log** view:

Column	Description
Field Name	Name of the modified field.
Modify Type	Type of change (New, Updated, Deleted).
New Value	New value of the field (when Modify Type = Updated).
Old Value	Previous value of the field (when Modify Type = Updated).
Entity Key Entity Type	Type of entity or key of the entity that is affected.



#### 3.4.2.4.4 Entity State Log

The **Entity State Log** view provides auditing information on the flow history of the selected entity. The following columns are available in this view:

Column	Description
Entity Type	Type of the entity.
New State	State of the entity after the action.
Old State	State of the entity before the action.
Update Time	Time at which the action was performed.
Updated By	ID of the user who performed the action.

### 3.4.3 Processing static data entities

The following sections describe how to process static data entities in Static Data Manager. In the default process flow, certain actions carried out in SDM-enabled editors need to be completed in the appropriate mode of the Static Data Manager.

#### 3.4.3.1 Accepting, rejecting, and editing SDM-enabled entities

In Static Data Manager's **Command** menu, you can select from the following commands: **Accept**, **Reject**, or **Edit**. You use these actions to verify and/or complete actions that were started in an SDM-enabled Editor according to the static data flow, for example, entities that are in **Verify** or **Delete-Verify** states.

- The **Accept** command allows you to move the current entity to the next state in the flow, provided:
  - You are in the correct mode.
  - There is a next state defined in the process flow.
  - All other entities that are necessary to process this entity have been created and are considered active in TRM.
  - You are authorized to perform this operation.
- The **Reject** command allows you to move the current entity backwards in the flow, provided:
  - You are in the correct mode.
  - There is a reject state defined in the flow.
  - You are authorized to perform this operation.
- The **Edit** command opens the corresponding Static Data Editor layout with the current entity selected by default.

#### 3.4.3.2 Retrieving SDM-enabled entities

To allow you to process entities, you need to retrieve them into Static Data Manager.

Retrieving entities is done in the **Query** view of Static Data Manager: see *3.4.2.4.1 Query* on page 56 for the list of available parameters. For more information about querying in general, see *2.2.10.5 Retrieving entities* on page 38.

#### 3.4.3.3 Verifying SDM-enabled entities

Once an SDM-enabled entity has been modified, the entity's state changes according to the flow configuration (for example, from **Open** to **Verify**).

In a typical TRM implementation, the Verify mode of Static Data Manager is used to check these entities.

To verify an SDM-enabled entity:

1. Retrieve the entities in Static Data Manager's Verify mode.
2. Check the details.
3. Move the entity forward or backward to the appropriate state in the static data flow, as follows:
  - If the details are correct, accept the entity and move it forward in the flow.
  - If the details are not correct, reject the entity and send it back to the previous state to be modified or canceled.

#### 3.4.3.4 Validating deleted SDM-enabled entities

When you delete an entity in an SDM-enabled editor, the entity remains visible in the editor, but only in the read-only mode, and is still available in TRM until it is moved forward to the **Deleted** state.

The delete process needs to be validated in Static Data Manager in order for the entity to be removed from the editor and to no longer be available in TRM. Such deleted entities are flagged with the **Deleted** state.

For information about deleting entities in SDM-enabled editors, see *3.4.1.5 Deleting static data entities in SDM-enabled editors* on page 54.

To validate the delete process:

1. In the relevant Static Data Manager mode, fetch the deleted entity, see *3.4.3.2 Retrieving SDM-enabled entities* on page 57.
2. When you have fetched the entity, do one of the following actions:
  - a. Click **Accept** to validate the delete process and move the entity to the **Deleted** state.
  - b. Click **Reject** to cancel the delete process. The entity is moved backward to its previous state before the deletion, i.e. **Final**.

### 3.4.4 Sharing SDM-enabled data across Wallstreet Suite modules

SDM-enabled entities can be shared across Wallstreet Suite modules. This means that any modifications you need to make to an entity only need to be made once, thereby avoiding the duplication of work in each module.

Static Data Editor layouts may change slightly depending on whether TRM is used alone, or as part of Wallstreet Suite (for example, with CMM, the Cash Management Module).

#### 3.4.4.1 Sharing SDM-enabled data with CMM

If SDM is used with CMM, there are additional editors which are necessary to set up CMM static data entities in TRM. The parameters required to create these entities are explained in the *CMM User Guide*.

In addition to the previously mentioned **State** field (see *3.4.1 SDM-enabled Static Data Editors* on page 51), some editor layouts may contain extra pages or fields that are used for data entry specific to CMM use.

Furthermore, in an SDM-enabled system, some field values do not map directly to the equivalent values in CMM.

Information about these additional fields or differences in field values when SDM is used with CMM can be found in *Appendix D SDM - CMM mapping* on page 689.

## 3.5 Countries

Country entities are defined in Country Editor.

Location entities (which are specifically used in facility management in commercial loans) are set up in the same way as countries, but with an additional attribute that defines the entity as a location.

To create a country:

1. Enter the main attributes for the country (or location) in the upper part of Country Editor, using the information in the following table:

Information	Description
ID Long ID Name	Unique ID, long ID and name of the country or location.
Code	Numerical code for the country. This is often the ISO 3166 code for the country. This code is not used anywhere in TRM, but can be used in some client-specific interfaces.

2. Modify the switches using the information in the following table:

Information	Description
Is Country	Switch on to identify the entity as a country. If this switch is on, the entity is included in any Country selection lists.
Is Location	(Commercial loans use only) Switch on to identify the entity as a location. If this switch is on, the entity is included in any Location selection lists. More specifically, it is available for selection in Facility Editor's <b>Location</b> page. This switch is normally used to configure project locations for commercial loans.

3. Assign the country to a country group (optional) in the **Country Group Map** page.  
(See 3.30 *Country groups (optional)* on page 142.)
4. Save the country definition using **File - Save As New**.

## 3.6 Calendars

In TRM, calendars are entities that specify sets of weekends and public holidays.

It is important to be able to determine non-business days in the system, in particular, for currencies (because of FX deals) and IR instruments (because of the effect of weekends and public holidays on settlement dates).

Calendars are used, for example, to reflect the way in which FX rates are quoted and to enable payment due dates to be adjusted to take non-business days into account.

Calendars are subsequently assigned to currencies and instruments. By default, instruments take the calendar of the currency assigned to them, and in the case of FX instruments, the calendars of both currencies are used in the instrument definition. However, it is also possible to override the calendar of the currency, by assigning another calendar (or calendar group) to the instrument (see 3.25 *Calendar groups (optional)* on page 134).

Calendars also must be assigned to any other entities (for example, yield curves, gap sets, and so on) for which dates need to be computed. Calendars are defined in Calendar Editor.

A Holiday Calendar can be defined in addition to a normal calendar. The Holiday Calendar has an effect only if a holiday on it coincides with the normal end date: the following date then becomes the effective end date as in this example:

Start Date	Specified Duration	Normal End Date	Holiday on Normal Calendar	Holiday on Holiday Calendar	Effective End Date
3 May	2 days	5 May	None	None	5 May
			4 May	None	6 May
			None	4 May	5 May
			None	5 May	6 May
			4 May	5 May	7 May

For instruments such as swaps, the calendar of a leg or schedule overrides other calendars such as instrument or currency calendars.

### 3.6.1 Creating calendars

To create a calendar:

1. Enter a unique ID and name for the calendar in the upper part of Calendar Editor. Note that a calendar cannot be created with the same ID as a calendar group (see 3.25 Calendar groups (optional) on page 134).

To make the calendar easy to recognize, use the ID and name of the currency that the calendar applies to: for example, "GBP" applies to the currency GBP.

2. In the **Default Holidays** field, select the calendar's weekly non-business days, that is, any days of the week which are always non-working (such as weekends).

In the **Holidays** page in the lower part of the editor, the days you select are displayed in bold on the calendar.

3. Save the calendar using **File - Save As New**.
4. Complete the calendar definition using the information in the following sections.

#### 3.6.1.1 Generating recurring public holidays

For each calendar, you need to define and generate any recurring public holidays (such as New Year's Day) in the calendar.

To generate recurring public holidays:

1. In Calendar Editor's **Calendar Rules** page, enter a name or description of the public holiday (for example, *New Year's Day*) in the **Reason** field.
2. Complete the formula for the public holiday: reading from top to bottom, the values you select describe how the public holiday is calculated.

For example, for New Year's Day, the values you enter correspond to "1 Day Of Month January"; and for Easter Monday, "1 Day After Easter Sunday", or "1 Monday After Easter Sunday"

Information	Description
Count	The number to use in the formula. For example, for New Year's Day, enter "1".
Day of week	The day to use in the formula if the holiday falls on a specific day, otherwise select Day. For example, for New Year's Day, select "Day".

Information	Description
Direction	The direction to define how the defined values are interpreted in the formula: Before, Of, or After. For example, for New Year's Day, select "Of".
Reference	The reference to which the formula refers: Easter Sunday, Month, Month/Day, or Month/Year. For example, for New Year's Day, select "Month". The following fields change or become unavailable according to the values selected in this and the previous fields.
Month	The month of the year to use in the formula. For example, for New Year's Day, select "January".
Day/Year	Enter any additional values to use in the formula.
Condition	Enter an additional condition for the formula, for example, <i>If Saturday</i> or <i>If Not Monday</i> . For example, for New Year's Day, select "Every Year".

3. Click **Add** to add the rule to the calendar.
4. Return to the **Holidays** page and click **Generate**.
5. In the resulting dialog, enter the years in which the public holiday applies in the **From Year** and **To Year** fields.

If the value you selected for the public holiday applies only to a specific year, specify the year in which it applies.

6. Repeat the above procedure for any further public holidays you want to generate.  
All the generated public holidays are listed in the left side of the **Holidays** page.
7. Save the calendar using **File - Save**.

### 3.6.1.2 Editing a holiday in the calendar

You can edit a generated public holiday in Calendar Editor or add a new one to the calendar using the command buttons in the **Holidays** page. However, if you need to add, update, or remove a recurring holiday, you must do so in the **Calendar Rules** page: see 3.6.1.1 *Generating recurring public holidays* on page 60.

1. To add a new holiday to a calendar:
  - Click the date for the new holiday in the calendar
  - Enter a description for the holiday in the **Reason** field
  - Click **Add**.
2. To modify an existing holiday in the calendar:
  - Select the holiday that needs to be modified from the Holidays list
  - Click the date for that holiday in the calendar if it needs to be changed
  - Modify the description of the holiday in the **Reason** field if necessary
  - Click **Update** to confirm your choice.
3. To remove a holiday from the calendar:
  - Click on the holiday that you want to remove in the Holidays list
  - Click **Remove**.
4. Save the calendar using **File - Save**.

### 3.6.1.3 Checking and updating instruments and transactions

If you have modified a calendar, (for example, a public holiday has been added or removed) you can run the Checking Instruments and Transactions Holidays activity to automatically update the dates

and regenerate the cashflows for any instruments and related transactions which refer to this calendar. This is especially useful for bonds, when the dates of future cashflows are known in advance and have already been generated in TRM.

See *A.11 Checking Instruments and Transactions Holidays* on page 630 for details of the activity's parameters.

---

**Note:** Activities are set up and managed in Activity Manager: see *Chapter 6 Managing activities* on page 227 for more information.

---

## 3.7 Gaps (time intervals)

Gaps are time intervals (either actual dates or fixed periods such as a set number of months or weeks). These gaps are used to calculate dates, to group cashflows in Treasury Monitor, and for limit monitoring purposes.

Absolute gaps start and end on specific dates, for example, a calendar year or a financial year. Absolute gaps are often used by investment managers.

Relative gaps are relative to a specific date, such as the spot date or another type of date on which they are used.

Relative gaps are generally used for both risk and liquidity analysis, whereas absolute gaps are usually used only for liquidity purposes. You can create different sets of gaps for different needs: for example, for FX transactions, for IR transactions, for limits, and for analyzing liquidity.

Gaps are contained within a gap set. When you later assign a gap set (for example, to an instrument), your choice of gaps is restricted to gaps that have been defined within that set.

To create a gap set:

1. In the upper part of Gap Editor, define the main attributes for the gap set using the information in the following table:

Information	Description
ID & Name	Unique ID and name for the gap set.
Calendar	Calendar or calendar group used when creating exact dates for a gap. Note that the calendar of the Figure Currency is also taken into account in the calculation of a gap period. If the calendar of the Figure Currency differs from the calendar specified in this field, then a combination of the two calendars is used. If you leave this field blank, by default, the calendar of the Figure Currency is used for the gap period.

2. In the **Gaps** page in the lower part of the editor, define the first gap in the gap set using the information in the following table:

Information	Description
ID & Name & Short Name	Unique ID and name for the gap set. Optionally, you can also give a short name. The ID must be unique to this gap within this gap set, although gaps can have the same ID if they are in different gap sets.
No Ultimo	When set, the Ultimo convention is not applied to the end date of the period. The Ultimo convention means the month right before the current one.
Following	When set, the Following convention is applied to the end period of the gap instead of the Modified Following convention.

3. Define the dates (absolute gap) or period duration (relative gap) as follows:

- If the gap is an absolute (fixed dates) gap, enter the start and end dates in the **Start Date** and **End Date** fields. If you want to restrict when this gap is available, enter a date in the **Active From** and/or **Active To** fields.
- If the gap is a relative (periodic) gap, define when the gap starts using **Start Period** and **Start Unit**, and how long the period lasts using **Period Length** and **Period Length Unit**. Relative gaps are relative to the date from which they are used: so if someone analyzes their position in Treasury Monitor on 30 July, "6 months" means "6 months from 30 July", and so on.

4. Turn on the relevant switches (all switches apply to both absolute and relative gaps):

Switch	Description
Exclude First Day of Period Exclude Last Day of Period	Exclude the first day, or exclude the last day, in the period. You can use either or both of these switches if the periods you define overlap.
Not Valid Before Start Not Valid After End	Exclude cashflows from this gap if they fall outside this date range.
Spot Relative	For relative gaps only. If this switch is on, the gaps are relative to the spot date of the date used in Treasury Monitor. For example, if someone analyzes their position in Treasury Monitor on 25 August with a gap of one week and the number of spot days is 2, the gap will be one week starting from 27 August.
Use Absolute Dates	Define the gap as absolute rather than relative.
Use Business Days for Start Period Use Business Days for End Period	Make the gap period start and/or end on a business day. TRM uses the simple Next Business Day convention for gap sets.

5. Click **Add** to add the gap period to the gap.
6. Repeat the procedure to add the rest of the gaps for this gap set.
7. Save the whole gap set definition using **File - Save As New**.

### 3.7.1 Order of cashflow sorting to gaps

The order in which cashflows are sorted into gaps is decided as follows. Consider a deposit of 18 months to maturity. A gap set is defined with two gaps: 0-12M and 12M+. The gaps do not have the 'Not Valid after end' switch set. Which gap is tried first to match the deposit?

For each gap we first calculate start and end dates based on the date and gap setting (often the setup is with the same start and end date.)

For matching, we first find two gaps:

- The near gap is the gap with the latest start date, where the start date is before or on the matching date (in this example, the 0-12M gap is the near gap)
- The far gap is the next gap by start date (in this example, the 12M+ gap is the far gap)
  - If only one gap is found, pick that one. No match is returned if the only gap is disqualified by the Not Valid Before/After setting.
  - If the matching date is between the near gap's start and end periods, pick the near gap (0-12M gap).

- If one of the gaps is disqualified by Not Valid Before/After setting, pick the other one. If both would be disqualified, ignore the setting.
- If the day count from the matching date to far gap's start date is less than day count to near gap's end date, pick the far gap (12M+ gap)
- Otherwise pick the near gap (0-12M gap).

## 3.8 IR quotes and yield curves

IR quotes and yield curves are defined in the IR Quote and Yield Curve Editor. This editor is used to define direct market quotes (e.g. deposit, FRA, swap, basis swap, credit default swap quotes); derive new quotes for these market quotes, and define bootstrap zero-coupon yield curves.

In TRM, IR quotes and yields curves are defined as follows:

- *IR Quotes* are sets of discrete market or derived quotes and cannot as such be used directly in valuation.
- *Yield Curves* are defined to bootstrap zero-coupon yield curves, which provide discount factors as a function of time, and can thus be used to value any set of cashflows.

This section describes how to use the date conventions with IR quotes and yield curves, and how to create IR quotes and yield curves.

See *3.8.1 Date Conventions* on page 64 and *3.8.2 Creating IR Quote and Yield Curves* on page 65.

### 3.8.1 Date Conventions

In TRM it is often necessary to refer to time periods, i.e. periods with specific start and end dates. When defining IR quotes, such periods are described using *Tenors*.

In general terms, tenors are combinations of *time units* ('D' for business day, 'W' for week, 'M' for month, and 'Y' for year) and the number of these time units (any integer). For example, '1Y' refers to a one year period from spot, '2M' refers to a two month period from spot, and so on.

In the system, these tenors need to be attached to a date convention, which effectively interprets the user entered tenors in order to establish the exact start and end dates for the tenor. Currently, the following date conventions exist:

- Generic IR Tenor
- Generic IR Tenor (No Ultimo)
- FRA Tenor
- ISDA CDS Tenor

Both **Generic IR Tenor** date conventions understand the same tenors and interpret the tenors in the same way, i.e. calculate the dates as of spot (except some special tenors), using the Modified Following convention for monthly and yearly tenors, with the exception that **Generic IR Tenor (No Ultimo)** does not apply the 'Ultimo Rule'. When the Ultimo Rule applies, then if the spot date falls on the last business day of the month, then the end date of the tenor (when defined in months or years) also falls on the last business day of the (end) month.



The following tenor syntaxes are used in TRM:

Tenors	Description	Example
Special Tenors	'O/N', 'T/N', 'S/N' define overnight, tomorrow next and spot next periods.	
Basic Tenors	xD, xW, xM, xY where x is the number of business days, weeks, months and years.	'1D', '6W', '18M', '10Y'
Composite Tenors	Composed of two basic tenors, separated by 'X', indicate that the second tenor is also calculated as of spot.	'3MX1Y' is a period starting in three months from spot and ending in one year from spot.
Composite Tenors	Composed of two basic tenors, separated by '/', indicate that the second tenor is calculated as of the start of the period.	'3M/1Y' is a period starting in three months from spot and ending one year after the start of the period.
Date Tenors	Where the period end date is defined directly using syntax YYYY-MM-DD	'2010-09-25' is a period from spot to September 25th, 2010
FRA Tenor	xYyU, where x is the start of the FRA (value date) from spot date and y the end of the FRA (maturity date) from spot date. U represents the unit, for example, 'M' for month, 'Y' for year. 'M' is the default when no units are defined.	
ISDA CDS Tenor	Same as Basic Tenors except that only 20th of March, June, September, or December are valid end dates (i.e. maturity dates).	Annual tenors or 3M, 6M or 9M

**Note:** For composite tenors it is possible to leave out the time unit, in which case the 'time unit' is interpreted as 'M'. In other words, '3X6' is the same as '3MX6M'.

### 3.8.2 Creating IR Quote and Yield Curves

IR Quote and Yield Curve Editor is used to define different types of interest rate related quotations (usually associated with some term/tenor structure, e.g. deposit and swap quotes, tenor and cross currency basis swap quotes, and even credit default swap quotes) as well as defining the zero-coupon yield curves (later just 'yield curves') which are used in most valuation and risk calculations.

It should be understood that IR quotes are sets of discrete quotes usually from the market (such as 'USD 2Y Swap Rate') or quotes derived from other quotes (such as 'USD 2Y Swap Rate' + 20 basis points). These sets of discrete quotes cannot be used directly in valuation. Instead, yield curves need to be defined in order bootstrap a zero coupon yield curve, which effectively provides discount factors as a function of time, and can thus be used to value any set of cashflows. The yield curves can use e.g. deposit and swap quotes, MM futures and bonds as input for the bootstrapping.

Table 3-1 on page 66 shows the list of IR quotes and yield curves that can be defined using IR Quote and Yield Curve Editor. These are grouped into different types and kinds, which are also used to control which tabs and fields being exposed to the user in the editor.

**Hint:** Direct Quotes and Spread Quotes can be captured and stored e.g. via Rate Monitor, while all derived quotes and bootstrapped zero coupon quoted are calculated on-the-fly when

required. Thus, derived and bootstrapped quotes can e.g. be viewed in Rate Monitor, but not modified.

Table 3-1 **List of types and kinds of IR quotes and yield curves**

Type	Kind	Description
Direct Quotes See 3.8.2.1 <i>Direct Quotes</i> on page 69	Generic See	Generic (usually) market quotes, e.g. deposit, swap, FRA, LIBOR quotes.
	Cross Currency Basis Swap	Cross currency basis swap spread quotes.
	Tenor Basis Swap	Tenor basis swap spread quotes.
	Credit Default Swap	Credit default swap quotes.
Spread Quotes See 3.8.2.2 <i>Spread Quotes</i> on page 71	Single Spread	A single spread quote. It is a simple number without any characteristics (i.e. no date basis or interest type), mainly used for creating Derived Quotes (see below).
	Tenor Spreads	Similar to a Single Spread, except that spreads can be captured per tenor.
Derived Quotes See 3.8.2.3 <i>Derived Quotes</i> on page 72	Composite	A simple combination of two sets of quotes, e.g. swap and spread.
	Derived	Quotes derived from other IR quotes using expressions.
	Expression-Based	Quotes defined from scratch using expressions.
	Derived Virtual	The method for deriving 'virtual' quotes for each interest tenor of the underlying quote.  For example, if semi-annual swaps are quoted for annual tenors only, the system will interpolate 'virtual' swap quotes for each interest tenor, resulting in semi-annual quotes. Such 'virtual' swap quotes can then be used e.g. as input for bootstrapping zero coupon curves.
Yield Curve See 3.8.2.4 <i>Yield Curve</i> on page 74	Constructed Yield Curve	A bootstrapped zero-coupon yield curve calculated from IR quotes, bonds, and/or MM futures. Using the inputs specified, this yield curve provides discount factors directly for any requested dates without any intermediary calculation/rounding.
	Tenor Basis Swap Curve (Spread Leg) Tenor Basis Swap Curve (Flat Leg)	A bootstrapped zero-coupon (estimation) curve calculated from the tenor basis swap spread quotes and an underlying yield curve using the estimation curve bootstrapping.  The <i>Spread Leg</i> kind bootstraps an estimation curve for the spread leg (i.e. the leg on which the quoted spread is added), while the <i>Flat Leg</i> kind bootstraps an estimation curve for the flat leg (i.e. the leg with no spread).
	Cross Currency Basis Swap Curve (Spread Leg) Cross Currency Basis Swap Curve (Flat Leg)	A bootstrapped zero-coupon (discount) curve calculated from the cross-currency basis swap spread quotes and underlying yield curves using the discount curve bootstrapping.  The <i>Spread Leg</i> kind bootstraps a discount curve for the spread leg (i.e. the leg on which the quoted spread is added), while the <i>Flat Leg</i> kind bootstraps a discount curve for the flat leg (i.e. the leg with no spread).

Type	Kind	Description
Derived Quotes from Yield Curve <i>See 3.8.2.5 Derived Quotes from Yield Curve on page 77</i>	Zero Coupon Quotes from Yield Curve	A special-purpose derivation method for deriving zero coupon quotes for user-specified tenors from a bootstrapped zero-coupon yield curve. These quotes can then be used further for example when deriving other IR quotes.
	Quotes from Yield Curve	Same as above, but the quotes to be derived can be configured as something else than zero coupon (e.g. semi-annual, annual).

To define the main characteristics of IR quotes and yield curves:

1. Enter the main attributes in the upper part of the editor, using the information in the following table:

Information	Description
ID & Name	Unique ID and name for the IR quote or yield curve.
Currency	The currency of the IR quote or yield curve. Note: For cross-currency basis swaps, this is the currency of the leg on which the spread is quoted (and added).
Quotes	<ul style="list-style-type: none"> <li>• If you want one quote, select <b>Single Quote</b>.</li> <li>• If you want both bid and ask quotes, select <b>Bid/Ask</b>.</li> </ul>
Type & Kind	Type and kind of the IR quote or yield curve, see <i>Table 3-1 List of types and kinds of IR quotes and yield curves</i> on page 66.
Display Precision	Number of decimals used to display the quotes in Rate Monitor.
Usage	<p>Usages are used as filtering criteria for the selection lists in TRM applications. The usages are sensitive to the type/kind of the curve. The possible values are:</p> <ul style="list-style-type: none"> <li>• <b>Discount</b> - makes the yield curve available as a discounting curve</li> <li>• <b>Estimation</b> - makes the yield curve available as an estimation curve</li> <li>• <b>Fixing</b> - defines the IR quote as a fixing reference</li> <li>• <b>Interest Calculation</b> - makes the IR quote available for interest calculation on bank account balances and cost-of-carry</li> <li>• <b>Valuation</b> - makes the yield curve available as a valuation curve.</li> <li>• <b>Valuation Spread</b> - makes the yield curve available as a spread curve in valuation</li> </ul>
Domain	Domain to which the entity belongs.

Information	Description
Optional Features	<p>Optional features can be added to the IR quote or yield curve if needed. The features are available depending on the type/kind. The optional features are:</p> <ul style="list-style-type: none"> <li>• <b>Date Setup:</b> Allows the definition of calendars and spot days attached to this IR quote or yield curve.</li> <li>• <b>Estimation Curve Setup:</b> If the IR quote is used for fixing, this allows you to specify a default estimation curve to be used in valuation when estimating the unfixed interest cashflows that will eventually be fixed to this IR quote. It is possible to specify a yield curve for each fixing quote tenor (defined in the <b>Tenor</b> tab). This allows you to have a different (default) estimation curve for transactions which are fixed to 3M quotes compared to those fixed to 6M quotes. It is possible to leave the <b>Tenor</b> field blank, in which case the yield curve applies to all fixing tenors.</li> <li>• <b>Bootstrap Yield Curve:</b> Allows direct quotes (e.g. an IR quote consisting of deposit and swap quotes) and some derived quotes to be directly bootstrapped into a yield curve (and thus be available for valuation).</li> <li>• <b>Properties:</b> Allows the capturing of system or user-defined properties.</li> <li>• <b>Yield Curve Interpolation Setup:</b> Allows specific interpolation definition for yield curves to deviate from the default logic.</li> <li>• <b>Quote Interpolation Setup:</b> Allows specific definition for interpolation IR quotes to deviate from the default logic. This is currently available for Derived Virtual Quotes.</li> <li>• <b>Input Instruments:</b> For constructed yield curves, allows the capturing of bonds and MM future chains as inputs into bootstrapping (instead of or in addition to IR quotes).</li> <li>• <b>Other Leg Yield Curves:</b> For cross-currency basis swap curves, allows the definition of the estimation and discount curves for the leg not being bootstrapped.</li> </ul> <p>See 3.8.3 <i>Optional features</i> on page 78 for more information about these features. This section also describes the default logic when optional features are not added to the IR quote or yield curve.</p>
Export this curve to CMM	<p>(For CMM integrated environment only)</p> <p>Enables you to export Direct Quotes or Derived Quotes to be used in CMM.</p>

2. Complete the IR quote or yield curve definition according to the type and kind using the information in the following sections:
- Direct Quotes: 3.8.2.1 *Direct Quotes* on page 69
  - Spread Quotes: 3.8.2.2 *Spread Quotes* on page 71
  - Derived Quotes: 3.8.2.3 *Derived Quotes* on page 72
  - Yield Curve: 3.8.2.4 *Yield Curve* on page 74
  - Derived Quotes from Yield Curve: 3.8.2.5 *Derived Quotes from Yield Curve* on page 77.

The following section describes the pages and fields specific to each type/kind, while the pages/fields related to the more common optional features are described in 3.8.3 *Optional features* on page 78.

### 3.8.2.1 Direct Quotes

#### 3.8.2.1.1 Generic

To define generic quotes (e.g. deposit, FRA, swap, market quoted zero/coupon quotes):

1. In the **Tenor** page, define each tenor using the information in the following table:

Information	Description
Tenor	The tenor for which quotes will be input/imported; interpreted by the selected date convention, e.g. 'O/N', '1W', '1M' or '1Y'.
Date Convention	The date convention that interprets the tenor to deduce exact start and end dates for the tenor, select one of the following <b>Generic IR Tenor</b> or <b>Generic IR Tenor (No Ultimo)</b> or <b>FRA Tenor</b> .
Interest Type	The interest type of the quotation, usually <b>Periodic Rate</b> .
Date Basis	The date basis of the quote.
Interest Structure	The interest structure of the quote, i.e. in general the frequency of the interest payments being quoted, e.g. 'Semi-Annual' for USD swaps or 'At Maturity' for deposit and zero-coupon quotes.

2. If the defined quotes should be directly bootstrapped into a yield curve (without filtering out any tenors or adding other inputs), select the optional feature **Bootstrap Yield Curve**. See 3.8.3 *Optional features* on page 78.

#### 3.8.2.1.2 Tenor Basis Swap

To define tenor basis swap spread quotes:

1. In the **Tenor** page, define each tenor using the information in the following table:

Information	Description
Tenor	The tenor for which quotes will be input/imported; interpreted by the selected date convention, e.g. '1Y', '2Y' or '5Y'.
Date Convention	The date convention that interprets the tenor to deduce exact start and end dates for the tenor, select one of the following <b>Generic IR Tenor</b> or <b>Generic IR Tenor (No Ultimo)</b> or <b>FRA Tenor</b> .
Date Basis	The date basis of the interests for the leg for which the spread is quoted.
Interest Structure	The interest structure of the leg for which the spread is quoted, for example, <b>Monthly</b> when quoting a swap of 1M vs 3M USD Libor flat.
Date Basis (Flat Leg)	The date basis of the interests on the other (flat) leg of the swap.
Interest Structure (Flat Leg)	The interest structure of the other (flat) leg of the swap, for example, Quarterly when quoting a swap of 1M vs 3M USD Libor flat.

2. In the **Estimation Method** page, define the method used to estimate the floating interests of the quoted leg:

Information	Description
Method	The estimation method used to estimate the floating interest payments of the leg on which the spread is quoted. This estimation is reflected in the bootstrapped tenor basis swap curve.  Select <b>Overnight Average</b> for floating legs based on overnight average fixings (e.g. 'Fed Fund') and <b>Plain Vanilla</b> for the others.

### 3.8.2.1.3 Cross Currency Basis Swap

To define cross currency basis swap spread quotes:

1. In the **Tenor** page, define each tenor using the information in the following table:

Information	Description
Tenor	The tenor for which quotes will be input/imported; interpreted by the selected date convention, e.g. '1Y', '2Y' or '5Y'.
Date Convention	The date convention that interprets the tenor to deduce exact start and end dates for the tenor, select one of the following <b>Generic IR Tenor</b> or <b>Generic IR Tenor (No Ultimo)</b> or <b>FRA Tenor</b> .
Date Basis	The date basis of the interests on which the spread is quoted.
Interest Structure	The interest structure of the leg on which the spread is quoted (i.e. often the non-USD leg as spread quotes are mostly against USD flat).
Date Basis (Flat Leg)	The date basis of the interests on the other (flat) leg of the swap.
Interest Structure (Flat Leg)	The interest structure of the other (flat) leg of the swap, for example, Quarterly when quoting a swap of 1M vs 3M USD Libor flat.

2. In the **Quote Currency** page, define the currency against which the spreads are quoted:

Information	Description
Quote Currency	The currency against which the spreads are quoted (most commonly USD), i.e. the currency of the leg which is not the leg of the quoted spread. This information is informative only.

### 3.8.2.1.4 Credit Default Swap

Credit default swap quotes, together with the captured recovery rate, will be automatically bootstrapped into a default probability curve, which can then be used in valuation. Rate Monitor has a separate page displaying the credit default swap quotes and the recovery rate, as well as the calculated default probabilities and hazard rates.

To define credit default swap quotes:

1. In the **Tenor** page, define each tenor using the information in the following table:

Information	Description
Tenor	The tenor for which quotes will be input/imported; interpreted by the selected date convention, e.g. '1Y', '2Y' or '5Y'.
Date Convention	The date convention that interprets the tenor to deduce exact start and end dates for the tenor, select one of the following <b>Generic IR Tenor</b> or <b>Generic IR Tenor (No Ultimo)</b> or <b>FRA Tenor</b> or <b>ISDA CDS Tenor</b> .
Date Basis	The date basis of the quote.
Interest Structure	The frequency of the premium payments, e.g. <b>Quarterly</b> .

2. In the **Risk-Free Curve** page, define the risk-free yield curve:

Information	Description
Yield Curve	The risk-free yield curve which together with the credit default swap quotes is used to (automatically) calculate the default probability curve. This same yield curve should be used as the valuation curve of the CDS transactions.

3. In the **Reference Entity** page, define the reference entity of the credit default swap quotes:

Information	Description
Active From	The date from which onwards the Client is attached as a reference entity to these credit default swap quotes.
Active To	The date until which the client is attached as a reference entity to these credit default swap quotes.
Entity	The reference entity attached to these credit default swap quotes. By default, these quotes (and default probabilities) will be used to value all credit default swaps where this entity is the reference entity. A reference entity of a CDS can be a single entity or a basket of reference entities each with its own weight in the basket. These entities are defined in the Client Editor: see 3.13.1 <i>Creating clients</i> on page 90 or 3.13.1.4 <i>Creating groups of clients</i> on page 94.  It is possible to attach a specific credit default swap quotes at instrument level, which overwrites this default setting.

### 3.8.2.2 Spread Quotes

#### 3.8.2.2.1 Single Spread

Single spread quote provides a simple way for capturing a simple spread value in Rate Monitor, which can then be used for deriving new IR quotes by adding this quote as a 'flat' spread on top of other set of IR quotes (see Derived Quotes below). In Rate Monitor, a single period labeled 'SPREAD' is exposed for capturing the spread quote.

To define single spread quotes:

1. In the **Scaling** page, define how the entered spread is scaled:

Information	Description
Scaling	The factor by which the entered spread quote should be multiplied, e.g. 0.01 if the spread is in basis points.

#### 3.8.2.2.2 Tenor Spreads

Tenor spread quotes are similar to single spread quotes (see above), the only difference being the possibility to define multiple tenors and to capture a separate spread value for each tenor in Rate Monitor.

To define tenor spread quotes:

1. In the **Tenor** page, define each tenor using the information in the following table:

Information	Description
Tenor	The tenor for which quotes will be input (imported). These tenors are simple labels, i.e. they are not interpreted by any date convention. The labels are used when creating derived quotes (see 3.8.2.3 <i>Derived Quotes</i> on page 72).
Date Convention	The date convention that interprets the tenor to deduce exact start and end dates for the tenor, select one of the following <b>Generic IR Tenor</b> or <b>Generic IR Tenor (No Ultimo)</b> or <b>FRA Tenor</b> .

2. In the **Scaling** page, define how the entered spreads are scaled:

Information	Description
Scaling	The factor by which the entered spread quotes should be multiplied, e.g. 0.01 if the spreads are in basis points.

Information	Description
Interpolation Date Convention	The date convention that interprets the tenor to deduce exact start and end dates for the tenor, select one of the following <b>Generic IR Tenor</b> or <b>Generic IR Tenor (No Ultimo)</b> or <b>FRA Tenor</b> .

### 3.8.2.3 Derived Quotes

#### 3.8.2.3.1 Composite

Composite quotes are a simple summation of two IR quotes. One IR quote is defined as base IR quote and another IR quote is defined as the **Spread Quote**. All the characteristics for the composite IR quote (tenors, date basis, interest type, and interest structure) are taken from Base IR Quote. When calculating the composite quotes, all the quotes of Base IR Quote are taken, and then all the quotes of Spread Quote are simply added (after possible scaling) to the matching tenors of Base IR Quote.

To define composite quotes:

1. In the **IR Quotes** page, define composite IR quote using the information in the following table:

Information	Description
Base IR Quotes	The IR quote forming the base of the composite quote.
Spread Quotes	The IR quotes that will be added to the base quotes to for the composite quotes.
Factor	The factor by which the spread quotes are multiplied before being added to the base

2. If the defined quotes should directly be bootstrapped into a yield curve (without filtering out any tenors or adding other inputs), select the optional feature **Bootstrap Yield Curve**. See *3.8.3 Optional features* on page 78.

#### 3.8.2.3.2 Derived

Derived quotes are IR quotes based on another existing IR quote (Base IR Quote) and modified through flexible expressions. All the characteristics for the derived IR quote (tenors, date basis, interest type, and interest structure) are taken from Base IR Quote.

To define derived quotes:

1. In the **IR Quotes** page, define base IR quote using the information in the following table:

Information	Description
Base IR Quotes	The IR quote forming the base of the derived quote.

2. In the **Tenor** page, define each tenor using the information in the following table:

Information	Description
Tenor	The tenor for which quotes will be derived/calculated; the available tenors are those of the Base IR Quote.
Date Convention	The date convention that interprets the tenor to deduce exact start and end dates for the tenor, select one of the following <b>Generic IR Tenor</b> or <b>Generic IR Tenor (No Ultimo)</b> or <b>FRA Tenor</b> . Usually this would be set to be the same as in the Base IR Quote.
Expression	The expression defining the quote is calculated, e.g. 'ir + 0.2' to add 20 basis points to the Base IR Quote.



- If the defined quotes should directly be bootstrapped into a yield curve (without filtering any tenors or adding other inputs), select the optional feature **Bootstrap Yield Curve**. See 3.8.3 *Optional features* on page 78.

### 3.8.2.3.3 Expression-Based

Expression-based quotes are derived IR quotes defined using expressions. All the characteristics (tenors, date basis, interest type, and interest structure) are defined independently for the expression-based quotes.

To define expression-based quotes:

- In the **Tenor** page, define each tenor using the information in the following table:

Information	Description
Tenor	The tenor for which quotes will be derived/calculated; interpreted by the selected date convention, e.g. 'O/N', '1W', '1M' or '1Y'.
Date Convention	The date convention that interprets the tenor to deduce exact start and end dates for the tenor, select one of the following <b>Generic IR Tenor</b> or <b>Generic IR Tenor (No Ultimo)</b> or <b>FRA Tenor</b> .
Expression	The expression defining how the quote is calculated, e.g. ir ('EUR SWAP', '10Y')-ir ('EUR CMS', '2Y') giving a spread between two swap quotes.
Interest Type	The interest type of the quotation, usually 'Periodic Rate'.
Date Basis	The date basis of the quote.
Interest Structure	The interest structure of the quote, i.e. in general the frequency of the interest payments being quoted, e.g. 'Semi-Annual' for USD swaps or 'At Maturity' for deposit and zero-coupon quotes.

- If the defined quotes should directly be bootstrapped into a yield curve (without filtering out any tenors or adding other inputs), select the optional feature **Bootstrap Yield Curve**. See 3.8.3 *Optional features* on page 78.

### 3.8.2.3.4 Derived virtual

Derived virtual quotes refers to quotes derived from other IR quotes in such a way that the derived quotes are interpolated for each interest tenor of the underlying quote. These interpolated quotes are referred to as 'virtual quotes'. For example, if an underlying swap has quarterly interests and is quoted for annual tenors, then for the derived 'virtual swap' the system will interpolate three quarterly 'virtual quotes' for each year. In Rate Monitor, the 'virtual quotes' are labeled using the underlying tenors and a running order number. An underlying quarterly swap with tenors '1Y' and '2Y' would display tenors '1Y' and '2Y' as well as 'virtual tenors' '1Y.1', '1Y.2', '1Y.3', '2Y.1', '2Y.2' and '2Y.3' in the derived virtual swap.

The main purpose of defining virtual swaps is to use them as input in the zero coupon yield curve bootstrapping instead of the underlying swap itself. When constructing the bootstrapped zero coupon yield curve, it is possible to e.g. filter out any of the 'virtual tenors' exactly the same way as normal tenors are filtered (see 3.8.2.4 *Yield Curve* on page 74).

To define virtual quotes:

- In the **IR Quotes** page, define the base IR quote using the information in the following table:

Information	Description
Base IR Quotes	The base IR quote (usually IR swap) from which the virtual quotes are derived.

**Hint:** The use of quote interpolation (next step) requires that the optional feature **Quote Interpolation Setup** is selected, see 3.8.3 *Optional features* on page 78.

2. In the **Interpolation** page , define the method of interpolation using the information in the following table:

Information	Description
Method	<p>The method used for interpolating the virtual quotes. The available methods are:</p> <ul style="list-style-type: none"> <li>• Linear, Flat Rate Extrapolation, i.e. linear interpolation with flat extrapolation of rates.</li> <li>• Linear, Slope Extrapolation, i.e. linear interpolation with flat extrapolation of slope.</li> <li>• Cubic Spline, i.e. the second derivative at each point is continuous.</li> <li>• Hermite Spline (Two Points), i.e. the first derivative at each point in time is approximated by taking the value at the current and previous points in time.</li> <li>• Hermite Spline (Three Points), i.e. the first derivative at each point in time is approximated by taking the value at the previous, current and next point in time.</li> </ul>
Date Basis	The date basis used in interpolation.

### 3.8.2.4 Yield Curve

#### 3.8.2.4.1 Constructed Yield Curve

Yield curves are bootstrapped zero-coupon yield curves using IR quotes (direct or derived), bonds, and/or MM future chains as input. For IR quotes, it is possible to filter out tenors which should not be included in the bootstrapping. Similarly, it is possible to define which contracts for any particular future chain are to be included in the bootstrapping.

Using the inputs specified, this yield curve provides discount factors directly for any requested dates. Rate Monitor by default displays the zero coupon yields and discount factors for the dates that match the end/maturity dates of the inputs. The corresponding input tenors and instrument/contracts IDs will be shown as labels on the Periods axis.

To define yield curves:

1. In the **IR Quotes** page, define the IR quotes used as inputs using the information in the following table:

Information	Description
Active Since	The date from when onwards these IR quotes and exclude/include tenor filters are used in bootstrapping.
Active Until	The date until when these IR quotes and exclude/include tenor filters are used in bootstrapping.
IR Quotes	IR quotes included in bootstrapping.
Include Tenors	<p>Tenors of the selected IR quote included in bootstrapping. If left blank, all tenors are included by this filter. The include/exclude tenor filters can be expressed as:</p> <ul style="list-style-type: none"> <li>• A comma separated list, e.g. '1Y, 2Y, 3Y' (exact tenors), or</li> <li>• Range: '1Y...5Y' (all tenors between 1Y and 5Y inclusive), or</li> <li>• Open-ended range: '...10Y' (all tenors up to 10Y) or '3Y...' (all tenors from 3Y).</li> </ul>
Exclude Tenors	Tenors of the selected IR quote excluded from bootstrapping. If left blank, no tenors are excluded by this filter.

**Hint:**

The use of bonds and MM futures (next two steps) in bootstrapping requires that the optional feature **Input Instruments** is selected, see 3.8.3 *Optional features* on page 78.

- In the **Instruments** page, define the instruments to be used as inputs using the information in the following table:

Information	Description
Active Since	The date from when this instrument is used in bootstrapping.
Active Until	The date until when this instrument is used in bootstrapping.
Instruments	Instrument included in bootstrapping. Instruments with the <b>Bootstrap Instrument</b> feature are available for selection. See <i>TRM Instruments: Processing and Calculations Guide</i> for more information.

- In the **Future Chains** page, define the MM future chains used as inputs using the information in the following table:

Information	Description
Active Since	The date from when onwards this MM future chain and the defined exclude/include contract filters are used in bootstrapping.
Active Until	The date until when this MM future chain and the defined exclude/include contract filters are used in bootstrapping.
Future Chain	The future chain instrument included in bootstrapping.
Exclude Contract Count	The number of nearest active contracts in the chain that should be excluded from bootstrapping. If left blank, no contracts are excluded by this filter.
Include Contract Count	The number of nearest active contracts (after applying <b>Exclude Contract Count</b> ) in the chain that should be included in bootstrapping. If left blank, all contracts are included by this filter.
Include Contract Filter	List of contract months (separated by commas) to be included in bootstrapping (according to the default Formatter, i.e. format 'MMM'). If left blank, all contracts are included by this filter. For example, filter 'MAR, JUN, SEP, DEC' will include the regular quarterly contracts.
Exclude Contract Filter	List of contract months (separated by commas) to be excluded from bootstrapping (according to the default formatter, i.e. format 'MMM'). If left blank, no contracts are excluded by this filter.

#### 3.8.2.4.2 Tenor Basis Swap Curve (Spread Leg)

A zero-coupon yield curve for the spread leg is bootstrapped from tenor basis swap spread quotes and an underlying yield curve using the estimation curve bootstrapping (see *TRM Instruments: Processing and Calculations Guide*).

The bootstrapped estimation yield curve with the spread quotes and the underlying curve (used for discounting) value the spread leg to Par. The flat leg (i.e. the leg with no spread) also values to Par as the underlying curve is used for both estimation and discounting.

When valuing corresponding tenor basis swaps, this yield curve should be used as the estimation curve for the spread leg (i.e. the leg on which the quoted spread is added). The underlying curve should be used as the valuation curve for the spread leg, and as both the valuation and the estimation curve for the flat leg.

Using the specified inputs, this yield curve provides the discount factors directly for any requested dates. Rate Monitor (by default) displays the zero-coupon yields and discount factors for the dates matching the dates of the inputs.

To define a tenor basis swap curve:

1. In the **IR Quotes** page, define the tenor basis swap quotes used as inputs using the information in the following table:

Information	Description
IR Quotes	Tenor basis swap quotes used in bootstrapping. Only one set of quotes can be used as input.

2. In the **Base Yield Curve** page, define the underlying yield curve in the following table:

Information	Description
Yield Curve	The underlying yield curve used in the bootstrapping.

### 3.8.2.4.3 Tenor Basis Swap Curve (Flat Leg)

This is similar to Tenor Basis Swap Curve (Spread Leg) described in the previous section 3.8.2.4.2 *Tenor Basis Swap Curve (Spread Leg)* on page 75. However, here an estimation curve is bootstrapped for the flat leg, in a way that with the underlying curve (used for discounting) the curves value the flat leg, so that it matches the value of the spread leg. The spread leg is valued using the spread quotes and the underlying curve, which is used for both estimation and discounting.

When valuing corresponding tenor basis swaps, this yield curve should be used as the estimation curve for the flat leg. The underlying curve should be used as the valuation curve for the flat leg, and as both the estimation and the valuation curve for the spread leg.

### 3.8.2.4.4 Cross Currency Basis Swap Curve (Spread Leg)

A zero-coupon yield curve for the spread leg is bootstrapped from cross currency basis swap spread quotes and underlying yield curves using discount curve bootstrapping (see *TRM Instruments: Processing and Calculations Guide*). The bootstrapped discount yield curve together with the spread quotes and the underlying curve (used for the estimation) value the spread leg, so that it matches the value of the flat leg (i.e. the leg with no spread). The flat leg value is either assumed to be at Par, or alternatively, the user can define the estimation and discount curves used for valuing the flat leg.

When valuing corresponding cross currency basis swaps, this yield curve should be used as the valuation curve for the spread leg (i.e. the leg on which the quoted spread is added). The underlying curve should be used as the estimation curve for the spread leg. Similarly, the flat leg estimation and valuation curves should be selected according to the flat leg curve setup.

Using the specified inputs, this yield curve provides the discount factors directly for any requested dates. Rate Monitor (by default) displays the zero-coupon yields and discount factors for the dates matching the dates of the inputs.

To define a cross-currency basis swap curve:

1. In the **IR Quotes** page, define the cross-currency basis swap curve used as inputs using the information in the following table:

Information	Description
IR Quotes	Tenor basis swap quotes used in bootstrapping. Only one set of quotes can be used as input.

2. In the **Base Yield Curve** page, define the underlying yield curve in the following table:

Information	Description
Yield Curve	The underlying yield curve used in the bootstrapping.

**Hint:**

If the leg that is not being bootstrapped is not to be assumed at Par, then the estimation and discount curve for that leg should be captured using the **Other Leg Yield Curves** optional feature. See *3.8.3 Optional features* on page 78.

### 3.8.2.4.5 Cross Currency Basis Swap Curve (Flat Leg)

This is similar to Cross-Currency Basis Swap Curve (Spread Leg) described in the previous section *3.8.2.4.4 Cross Currency Basis Swap Curve (Spread Leg)* on page 76. However, here a discount curve for the flat leg is bootstrapped, in a way that with the underlying curve (used for the estimation), the curves value the flat leg so that it matches the value of the spread leg. The spread leg is valued using the spread quotes and the underlying curves, one for estimation and one for discounting (the same curve can also be used for both).

When valuing corresponding cross-currency basis swaps, this bootstrapped yield curve should be used as the valuation curve for the flat leg. The underlying curve should be used as the estimation curve for the flat leg. Similarly, the spread leg estimation and valuation curves should be selected in accordance with the spread leg curve setup.

### 3.8.2.5 Derived Quotes from Yield Curve

#### 3.8.2.5.1 Zero Coupon Quotes from Yield Curve

Zero coupon IR quotes can be derived from a yield curve by defining the underlying yield curve, the tenors for which quotes are to be derived, and how the derived zero coupon quotes are to be expressed. The derived zero coupon quotes can be used for example when deriving other IR quotes.

To define zero coupon quotes derived from yield curves:

1. In the **Yield Curve** page, define the underlying yield curve and the calculation rounding using the information in the following table:

Information	Description
Yield Curve	The yield curve from which IR quotes are derived.
Rounding	The precision to which the derived quotes will be rounded to, e.g. '0.0001' to round the quotes to four decimals.

2. In the **Tenor** page, define each tenor using the information in the following table:

Information	Description
Tenor	The tenor for which quotes will be derived from the underlying yield curve; interpreted by the selected date convention, e.g. 'O/N', '1W', '1M' or '1Y'.
Date Convention	The date convention that interprets the tenor to deduce exact start and end dates for the tenor, select one of the following <b>Generic IR Tenor</b> or <b>Generic IR Tenor (No Ultimo)</b> or <b>FRA Tenor</b> . Usually the same as in the underlying yield curve.
Interest Type	The interest type in which the derived quote is expressed, e.g. 'Annually Compounded Rate' or 'Periodic Rate'.
Date Basis	The date basis of the derived quote.

#### 3.8.2.5.2 Quotes from Yield curve

**Quotes from Yield Curve** allows users to derive IR quotes with any interest frequency from a zero coupon yield curve. Thus, this derivation method is otherwise exactly the same as above (**Zero-Coupon Quotes from Yield Curve**), but in the **Tenor** page the user is also able to define the interest structure (frequency) for each quote.

**Quotes from Yield Curve** can thus be used to reverse bootstrap 'Par quotes' from the zero-coupon yield curves, and as above, these derived quotes can be used, for example, when deriving other IR quotes.

### 3.8.3 Optional features

#### 3.8.3.1 Date Setup

Allows the definition of calendars and spot days used with this IR quote or yield curve.

In the **Date Setup** page, define the date setup using the information in the following table:

Information	Description
Calendar	The calendar used to establish the valid business days for the IR quote or yield curve.
Calendar (2nd)	A possible additional calendar used to establish the valid business days for the IR quote or yield curve, e.g. for cross currency basis swaps.
Spot Days	The number of spot days associated with this IR quote or yield curve.
Holiday Calendar	An additional holiday calendar. The dates established using the tenors and the two calendars above need to be a business day according to the holiday calendar.

#### 3.8.3.2 Estimation curve

Allows the definition of a default estimation curve to be linked to IR quotes that are used to fix floating cashflows. If no estimation curve is defined at instrument or transaction level, then valuation will use this estimation curve to estimate the amount of those unfixed cashflows which use this IR quote for fixing. If no estimation curve is found here either, the currency definitions will be used to find the estimation curve.

In the **Estimation Curve** page, define a default estimation curve for an IR quote using the information in the following table:

Information	Description
Yield Curve	Yield curve used as the default estimation curve for the IR quote.

#### 3.8.3.3 Yield Curve Interpolation Setup

The default method of interpolation of yield curves is **Linear, Flat Rate Extrapolation** with date basis 'Actual/365' and interest type **Continuous Yield**. To deviate from these defaults, the user can specify the values used in interpolation.

In the **Interpolation** page, define the values used in the interpolation of yield curves using the information in the following table:

Information	Description
Method	The method used for interpolating the virtual quotes. The available methods are: <ul style="list-style-type: none"> <li>• <b>Linear, Flat Rate Extrapolation</b>, i.e. linear interpolation with flat extrapolation of rates.</li> <li>• <b>Linear, Slope Extrapolation</b>, i.e. linear interpolation with flat extrapolation of slope.</li> <li>• <b>Cubic Spline</b>, i.e. the second derivative at each point is continuous.</li> <li>• <b>Hermite Spline (Two Points)</b>, i.e. the first derivative at each point in time is approximated by taking the value at the current and previous points in time.</li> <li>• <b>Hermite Spline (Three Points)</b>, i.e. the first derivative at each point in time is approximated by taking the value at the previous, current and next point in time.</li> </ul>
Interest Type	The interest type of the quotation, e.g. <b>Annually Compounded Rate</b> or <b>Discount Factor</b> .
Date Basis	The date basis used in interpolation.
Scaling	Whether to scale the interpolated variable, either 'None' for no scaling or 'Logarithmic' to interpolate the logarithm of the rate (according to rate definitions).

### 3.8.3.4 Bootstrap Yield Curve

This feature allows direct bootstrapping of IR quotes into a yield curve, without the need to define a separate constructed yield curve when it is not really needed.

### 3.8.3.5 Properties

The allows the user to add user or system-defined properties for IR quotes or yield curves.

To define properties in the **Properties** page, use the information in the following table:

Information	Description
Property	The property associated with IR quotes and yield curves.
Value	The value given for the property.

### 3.8.3.6 Other Leg Yield Curves

For cross currency basis swaps, this feature allows the user to add discount and estimation yield curves for the other leg (i.e. the leg not being bootstrapped).

To define yield curves in the **Other Leg Yield Curves** page, use the information in the following table:

Information	Description
Yield Curve	The yield curve used in the bootstrapping.
Type	The type of the yield curve, i.e. how it is used in the bootstrapping, either estimation or discounting.

## 3.9 Currencies

Before you start to define currencies in TRM, it is important to understand the difference between currency groups, currency classes, and currency families.

Currency groups can be used, for example, for money-transfer scheduling, and for selecting currencies when generating payments in Settlement Processing according to how long before the value date the payment instructions need to be sent.

The same currency can belong to several different groups.

The primary use of currency classes in TRM is to aggregate currencies as if they were one currency (see 3.32 *Currency classes (optional)* on page 142).

Currency families are used for fixing the exchange rates between EMU currencies.

### 3.9.1 Creating currencies

To create a currency:

1. Define the main attributes of the currency in the upper part of Currency Editor using the information in the following table:

Information	Description
ID & Name	Unique ID and name for the currency.
Class	Currency class to which you want this currency to belong.
Domain	Domain in which this currency applies.

2. Save the currency definition using **File - Save As New**.
3. Complete the currency definition using the information in the following sections.

#### 3.9.1.1 Defining currency quotations

You receive quotations from currencies either through importing them from the market or defining them in Rate Monitor (see *Chapter 4 Managing market data* on page 161).

To define how quotations are valued:

1. In Currency Editor's **Journals** page, fill in the fields using the information in the following table:

**Note:** The **Journals** page is mandatory and must be filled in.

Information	Description
Active From Active To	In the <b>Active From</b> field, enter the date from which this journal entry applies. You can leave the <b>Active To</b> field blank: this journal entry is then assumed to be valid either indefinitely (if there are no other journal entries) or until the next <b>Active From</b> date (if you specify another journal entry).
Quote Base	Currency against which the currency you are defining is quoted. For example, if USD is created as the Quote Base for GBP, then GBP market quotations must be entered against USD, when taken from both external sources and when manually entering quotations in Rate Monitor.  For most currencies (including EUR), the quote base is USD.



Information	Description
Quote Factor	<p>Value that determines whether the FX rate for this currency against its quote base currency is for 100 units, 1 unit, and so on. For example, GBP/USD = 1.5/1 is quoted per 1 unit.</p> <p>The actual quote factor depends on market conventions: this value affects valuations, so you must give the correct factor.</p> <p>This is a mandatory field.</p>
Point Factor	<p>Value of one point of the currency against the quote base currency.</p> <p>For example, if the currency is GBP and the quote base currency is USD, then the point factor of 0.0001 means that one GBP/USD point affects the fourth decimal of the GBP/USD outright quotation (an outright quotation being the forward rate, namely the spot rate with forward points added).</p> <p><b>Point Factor</b> is also used for rounding of rates in cases where there is no specific definition of cross rates.</p> <p>The actual point factor depends on market conventions: this value affects valuations, so you must give the correct factor.</p>
Date Basis	<p>Date basis for this currency.</p> <p>The date basis is the number of days (in months and years) used, for example, when calculating FX transactions denominated in this currency.</p>
Calendar	<p>Calendar that applies to this currency.</p> <p>The calendar determines the non-business days (weekends and public holidays) for the currency, that is, the days when the currency is not tradable and quotations are not available.</p>
Holiday Calendar	<p>An extra calendar to supplement the calendar you specify in the <b>Calendar</b> field.</p> <p>This can be useful when, for example, you have an FX deal with two currencies that are both quoted against USD and therefore need to consider the USD calendar as well.</p>
Gap Set	<p>Gap set to be used to calculate maturity periods.</p>
Amount Precision	<p>Number of decimal places to which TRM rounds the cashflow amounts of the currency. This is used to determine the number of decimals to be displayed in monitors.</p> <p>The amount precision applies to all FX transactions in this currency, and to money-market transactions made with instruments where neither the currency, nor the amount precision is defined in Instrument Editor.</p>
Spot Days	<p>Number of business days from the trade date to the spot date. The number of days varies according to market conventions for the country and type of deal.</p> <p>It is possible to define 0 spot days between two currencies in the <b>Cross Rates</b> page of the editor by setting <b>Spot Days</b> to 0 for the relevant currency pair(s): see <i>3.9.1.2 Defining quotation entry and display (optional)</i> on page 86.</p>
Minimum Spot Days	<p>Minimum number of spot days.</p> <p>This value is used to specify the minimum number of business days between currencies: it has an impact on the calculation of such figures as Figure FX Rate.</p> <ul style="list-style-type: none"> <li>• If this field contains a value (including zero), spot days are calculated using calendar days instead of business days.</li> <li>• If this field is left blank, spot days are calculated using business days.</li> </ul>
Spot Time Spot Time Zone	<p>For global operations, a cut-off time has to be defined: deals before that time have the number of spot days calculated from that day; deals after that time have the spot days calculated from the following day. Define a time (<b>Spot Time</b>) within a selected time zone (<b>Spot Time Zone</b>).</p> <p>The market convention is 5pm New York time.</p>

Information	Description
Family Family Rate Family Amount Precision	<p>The family fields are used to define how the exchange rates between currencies are fixed (for example, EMU currencies):</p> <ul style="list-style-type: none"> <li>• <b>Family</b> specifies the family currency to which the currency belongs (EUR for EMU currencies). TRM enables you to settle payments using a currency other than the cashflow currency, but only if the payment currency belongs to the same family as the cashflow currency.</li> <li>• <b>Family Rate</b> specifies the fixed conversion rate between this currency and the family currency. It must be set if Treasury Monitor is to convert correctly to Class Amount. TRM displays this rate in Rate Monitor and uses it for valuations. If you enter a rate in this field, TRM prevents it from being modified in Rate Monitor (since the rate is, by definition, fixed).</li> <li>• <b>Family Amount Precision</b> specifies the number of decimals used when the intermediate EMU amount is rounded using the triangular rule (an EU rounding rule for converting between EMU currencies).</li> </ul>
FX Exposure Offset %	Percentage by which the market value of the cashflows denominated in this currency are multiplied to obtain their FX exposure.
Indirect	<p>Defines quotations for this currency as being the basis currency.</p> <p>When this switch is on, quotations (both imported and entered in Rate Monitor) are interpreted as being indirect, and the display of rates shows the quotations as being indirect.</p> <p>For example, GBP is usually quoted indirectly against USD (GBP/USD). This means that instead of displaying the number of GBP equal to one USD, the number of USD equal to one GBP is quoted.</p>
Fixed	<p>Fixes the exchange rate of the currency against the quote base currency. If you switch on <b>Fixed</b>, you must enter the fixed quotation in Rate Monitor. This quotation is used until a new quotation is entered.</p> <p>Note: You must not switch on <b>Fixed</b> if you defined a family for this currency.</p>
Cost of Carry Spread	Switch on to use the bid/ask of the cost-of-carry yield, depending on whether the position is long or short: in other words, if the balance is negative, one side of the quotation is used, and if it is positive, the other side of the quotation is used.

2. Click **Add** to save the currency's journal definition.
3. If you want add any other journals, repeat the procedure.
4. Save the whole currency definition using **File - Save**.

### 3.9.1.1.1 Defining default rates

To define the default rates used for a currency:

1. In Currency Editor's **Default Rates** page, for each currency, fill in the fields using the information in the following table:

Information	Description
Active From Active To	In the <b>Active From</b> field, enter the date from which this rate applies. You can leave the <b>Active To</b> field blank: this rate is then assumed to be valid either indefinitely (if there are no other default rate entries of the same type) or until the next <b>Active From</b> date (if you specify another default rate of the same type).
Type	Select from: <ul style="list-style-type: none"> <li>• <b>Carry Rate:</b> IR quote (defined with IR Quote and Yield Curve Editor's Usage <b>Interest Calculation</b>) used to calculate the cost-of-carry interest if the portfolio's cost-of-carry instrument has been set up to calculate interest on the cost-of-carry balance, but no interest calculation setup has been given for the cost-of-carry instrument.</li> <li>• <b>Default Curve:</b> Yield curve used as a generic curve in different parts of the system whenever no specific curve has been defined. This curve is used, for example, when deriving FX rates from yield curves, in quote defaulting, and as a default curve in calibration. It is recommended that a Default Curve is defined for each currency. The default curves used specifically for valuation, and which may differ from one valuation mode to another, are defined in the Currency Editor's <b>Valuation Defaults</b> page.</li> <li>• <b>Fixing Rate:</b> IR quote (defined with IR Quote and Yield Curve Editor's Usage <b>Fixing</b>) used as the default fixing curve for the currency.</li> <li>• <b>Risk Free Rate:</b> Yield curve used as the risk-free curve in calculations in Performance Monitor and when calculating Z-Spread and Zero Discount Margin in Rate Monitor. This rate is used in performance monitoring.</li> </ul>
Rate	Yield curve to use as the default rate for the type specified in the <b>Type</b> field.

2. Click **Add** to save the currency's default rate definition.
3. If you want add any other default rates, repeat the procedure.
4. Save the whole currency definition using **File - Save**.

### 3.9.1.1.2 Defining fixing rates

The FX cross rates used for fixing are defined in Currency Editor's **Fixing Rates** page.

The rates for the currency pair can be viewed in Rate Monitor's **FX Fixing Rates** page: see 4.5 *Rate Monitor* on page 171.

To define the FX cross rates used for fixing:

1. In Currency Editor's **Fixing Rates** page, fill in the fields using the information in the following table:

Information	Description
Currency	Currency against which the parent currency is to be quoted.
Point Factor	Value of one point of the currency against the parent currency.
Quote Factor	Number of units in which this currency is quoted against the parent currency. This is a mandatory field.
Rounding Factor	Number of decimal places to which the rates are rounded. If you leave this field blank, the value defaults to the point factor value.
Holiday Calendar	An extra calendar to supplement the calendars of the currency you are defining and the cross currency you select for the above <b>Currency</b> field.
Spot Days	Number of business days from the trade date to the spot date. The number of days varies according to market conventions for the country and type of deal.
Spot Time Spot Time Zone	For global operations, a cut-off time has to be defined: deals before that time have the number of spot days calculated from that day; deals after that time have the spot days calculated from the following day. Define a time ( <b>Spot Time</b> ) within a selected time zone ( <b>Spot Time Zone</b> ). The market convention is 5pm New York time.

2. Click **Add** and repeat the procedure for any other currency pairs.
3. Save the whole currency definition using **File - Save**.

### 3.9.1.1.3 Defining valuation modes

To define a currency's default valuation settings:

1. In Currency Editor's **Valuation Defaults** page, fill in the fields using the information in the following table:

Information	Description
Active From Active To	In the <b>Active From</b> field, enter the date from which this rate applies. You can leave the <b>Active To</b> field blank: this rate is then assumed to be valid either indefinitely (if there are no other default rate entries of the same type) or until the next <b>Active From</b> date (if you specify another default rate of the same type).
Type	Type of yield curve you want to use for the default valuation of the currency: <ul style="list-style-type: none"> <li>• Valuation Curve</li> <li>• Estimation Curve</li> <li>• Caplet Volatilities</li> <li>• Swaption Volatilities.</li> </ul>
Curve/Surface	Yield curve or volatility reference that you want to use as the default valuation rate for the type specified in the <b>Type</b> field.
Valuation Mode	Valuation mode. Choose from: <ul style="list-style-type: none"> <li>• Default - the yield curve that you want to use by default.</li> <li>• Theoretical - the yield curve that you want to use for discounting cashflows denominated in this currency.</li> <li>• Benchmark - the yield curve that you want to use to calculate the benchmark key-figures for all transactions denominated in this particular currency.</li> </ul>

2. Click **Add** and repeat the above procedure for any other default valuations you need for this currency.
3. Save the whole currency definition using **File - Save**.

### 3.9.1.2 Defining quotation entry and display (optional)

To define how quotations are entered and displayed for a currency:

1. In Currency Editor's **Cross Rates** page, for each currency, fill in the fields using the information in the following table:

Information	Description
Currency	Currency against which the parent currency is to be quoted. For example, if you are defining USD and want to define how the Turkish lira is quoted against it, you select TRL.
Point Factor	Value of one point of the cross-rate currency against the parent currency. If the <b>Indirect</b> switch is selected, then it is the opposite: the value of one point of the parent currency against the cross-rate currency.
Quote Factor	Number of units in which this cross-rate currency is quoted against the parent currency. If the <b>Indirect</b> switch is selected, then it is the opposite: the number of units in which the parent currency is quoted against the cross-rate currency.  This is a mandatory field.
Rounding Factor	Number of decimal places to which the cross rates are rounded. For example, enter 0.01 to round the cross rate to two decimal places. The limit is ten decimal places.  If you leave this field blank, the value defaults to the <b>Point Factor</b> value.
Holiday Calendar	An extra calendar to supplement the calendars of the currency you are defining and the cross currency you select for the above <b>Currency</b> field. This can be useful when, for example, you have an FX deal with two currencies that are both quoted against USD and therefore need to consider the USD calendar as well.
Spot Days	Number of business days from the trade date to the spot date.  The number of days varies according to market conventions for the country and type of deal.
Spot Time Spot Time Zone	For global operations, a cut-off time has to be defined: deals before that time have the number of spot days calculated from that day; deals after that time have the spot days calculated from the following day. Define a time ( <b>Spot Time</b> ) within a selected time zone ( <b>Spot Time Zone</b> ).  The market convention is 5pm New York time.
Indirect	Defines quotations for this currency as being the basis currency.  When this switch is on, quotations (both imported and entered in Rate Monitor) are interpreted as being indirect, and the display of rates shows the quotations as being indirect.  For example, GBP is usually quoted indirectly against USD (GBP/USD). This means that instead of displaying the number of GBP equal to one USD, the number of USD equal to one GBP is quoted.

Information	Description
Interpolate Spot Rate	<p>Calculates the spot rate as a forward rate; that is, from the quote and base rates for the spot date against the reference currency, calculated using the respective forward points.</p> <p>If this switch is off, the spot FX rate for the currency pair in question is calculated from the spot quotes of the base and quote currencies.</p> <p>For example, in the case of the cross rate: GBP/SEK</p> <p>The spot date of GBP/SEK is calculated from the spot date of GBP/USD and the spot date of USD/SEK. Assume for the purpose of the example that GBP/USD has spot days = 2 days and USD/SEK has spot days = 3 days.</p> <p>Since the spot dates of each underlying currency pair are different, turning on the switch forces TRM to calculate the forward rate of each currency pair at a common date, and thus derives the spot rate of the cross currency pair (GBP/SEK).</p> <p>If the switch is not turned on, the calculation of the cross currency spot rate will be inconsistent (in this example) as the calculation of the cross rate will be done by two rates based on two different dates - that is, no derived rates are used, simply the spot rate of each currency pair at its respective (different) spot date. Note that this will work correctly if both underlying currency pairs have the same spot dates.</p>

2. Click **Add** to add the cross rate definition to the currency.
3. Repeat the above procedure for any other cross rate definitions you need for this currency.
4. Save the whole currency definition using **File - Save**.

### 3.9.1.3 Assigning currency groups to currencies (optional)

You assign a currency to a currency group in Currency Editor's **Groups** page. The same currency can belong to more than one group. For this reason, a currency group cannot be used as a display-grouping criterion. The currency groups themselves are defined for you at implementation.

To assign a currency group to a currency:

1. In Currency Editor's **Groups** page, select the group you want the currency to belong to from the **Group** field.
2. Click **Add** to assign the currency to the group.
3. If you want the currency to belong to any other groups, select and add those groups.
4. Save the whole currency definition using **File - Save**.

## 3.10 Currency priorities

Currency priorities determine the preferred quote currency (usually only one), and the most commonly used currencies or preferred base currencies. Other currencies (unassigned) have a 0 priority. The currency priority is defined in the Currency Priority Editor. This editor is different to standard TRM editors, in that it is closer in appearance to a currency selector, for example, similar to the FX page of the Rate Monitor.

You use this editor to select the currencies from the 'unassigned' list of currencies (i.e. currencies with a 0 priority), and move them to the **Selected** area of the editor. The **Selected** area contains a line that represents the 0 basket, i.e. the border between negative and positive priorities. Currencies above this border are assigned negative priorities according to their position from this border. For example, the currency the closest to the border is numbered -1, the next one up -2, and so on.

These are the preferred base currencies. The currency below the border is numbered 1, and corresponds to the preferred quote currency.

---

**Note:** It is also possible to change the currency priority to be used for a given position in Treasury Monitor. See *12.1.4.1 Defining position parameters* on page 366.

---

To define your preferred base and quote currencies:

1. In Currency Priority Editor, select one or more currencies in the **Not Selected** area and move the selection across to the **Selected** area.

---

**Note:** To select non-consecutive currencies, select the first currency, and then holding down the **Ctrl** key, select the other currencies one after the other. To select consecutive currencies, select the first currency, holding the **Shift** key, select the last currency. You can combine both of these methods.

---

2. Arrange the currencies you want to define as the preferred base currencies above the 0 basket, and use the up and down arrows to change the order of priority.
3. Move the currency you want to define as the preferred quote currency below the 0 basket.
4. Save these priorities by clicking **Save**.

---

**Note:** You can use the grouping by **FX Currency Pair** to monitor your transactions in Treasury Monitor.

---

## 3.11 Settlement locations

Settlement locations are defined in the Settlement Location Editor. Settlement locations consists of a location (usually a country) and a currency. Settlement Location is used to identify a location within which two banks can carry out settlements each other without intermediaries. For example, settlements between parties within the same country only need a single bank on each side, whereas settlements between different countries (and currencies) require a correspondent bank in the other country.

If you want to use settlement locations as part of the settlement instructions, you need to link the them to banks and correspondent banks. This is done in Client Editor - **Settlement Location** page (see *3.13.1.12 Linking settlement locations to clients* on page 100).

To define the settlement locations:

1. In Settlement Location Editor, complete the following fields as indicated:

Information	Description
Currency	Select the currency from the list of available currencies.
Name	Enter the name of the location, for example, a country.

2. Save the settlement location by selecting **File - Save**.
3. Repeat this procedure until you have defined all of your settlement locations.



## 3.12 Client groups

Within TRM, the term client covers all organizations that you operate with, including counterparties, banks, issuers, subsidiaries and, very importantly, your own organization itself.

All clients must belong to a client group, which in turn must belong to a client main group. At implementation, one client main group (Primary) is defined for you: you can also create other client main groups in Client Group Editor.

---

**Note:** The Primary client group is mandatory and must not be removed.

---

Client main groups and client groups have a number of uses in TRM. For example, if you are managing funds, you can use client groups to exclude a specific issuer from the calculation of fund fees: for example, you may want to exclude your own issues, if money is transferred between funds and you want to prevent the fund management fees from being duplicated.

Client groups are also available in Treasury Monitor to group issuers and counterparties.

To create a client main group and its associated client groups:

1. Define the client main group, in the upper part of Client Group Editor using the information in the following table:

Information	Description
ID & Name	Unique ID and name for the client main group.
Obligatory Multiple	<p>Either Obligatory or Multiple:</p> <ul style="list-style-type: none"> <li>• <b>Obligatory</b> forces all clients to belong to one of the groups in this main group. Use this for main groups containing mutually exclusive groups: for example, a client main group containing the groups External Company, Holding Company, and Subsidiary.</li> <li>• <b>Multiple</b> enables clients to belong to more than one group within the main group. Use this for main groups containing non-exclusive groups: for example, if you have a main group called Geographical Region containing continents and countries, a client can belong to both Europe and France.</li> </ul>

2. In the **Groups** page, define the groups that belong to the main group. The ID for each group must be unique to this main group.
3. If you want this client group to be the default group selected in Client Editor's **Groups** page, turn on the **Default** switch.
4. Save the client group definition using **File - Save As New**.

## 3.13 Clients

All the organizations, with which you operate, including counterparties, banks, issuers, subsidiaries and, your own organization itself, need to be set up in TRM as clients. Clients are created in Client Editor.

Clients represent different legal entities. It is important to make a distinction between the different kinds of organization signified by client entities. In TRM, this is done by assigning roles to the client. Every client must have at least one role assigned to it, and some clients may have more than one role.

---

**Note:** The choice of roles in the selection list is predefined; you cannot add, change, or delete the types of role available.

---

Roles are used to fulfill the following main purposes:

- To restrict the client IDs available for selection in certain fields, columns, and selection lists throughout the system.

For example, if you are defining a client that functions as a bank, you would select the role `Bank`. If the bank also functions as a custodian, you would also select the role `Custodian`. The client ID will then be available for selection wherever you need to select a Bank (for example, in settlement instructions) or Custodian in the system.

Similarly, if you want to specify the Exchange on which a futures contract is traded, only the clients that have been given the role `Exchange` will be available for selection in the **Exchange** field when you are defining the instrument in Instrument Editor.

- Roles are also important if you are sharing SDM-enabled data with CMM (see 3.4.4 *Sharing SDM-enabled data across Wallstreet Suite modules* on page 58).

Some clients need to be created before others: for example, since you create banks as clients, and you need to assign these banks to clients that have bank accounts, you should create all your bank clients first.

### 3.13.1 Creating clients

To create a client:

1. Define the main attributes of the client by filling in the fields in the upper part of Client Editor using the information in the following table:

Information	Description
Template	The client template on which you want to base this client.
ID & Name	Unique ID and name for the client.
Country	Country in which the client is located. This is the country of residence of the client.
Domain	Domain in which this client applies.
Short Name	Short name for the client, used on confirmations. If you leave this field blank, TRM uses the name given in the <b>Name</b> field.
Risk Country	Country against which the exposure for the client is measured. For subsidiaries, this is typically the risk country of the parent company.
Parent	Name of the parent company of the client. You use parent companies to create limits against a group of companies consisting of a parent company, subsidiaries, and branches.
City	Name of the city in which the client is located.
SWIFT Code	SWIFT code of the client.
Postal Address Street Address Payment Address	Addresses of the client (used in confirmations and payments files), where typically: <ul style="list-style-type: none"> <li>• <b>Postal Address</b>: full postal address of the client.</li> <li>• <b>Street Address</b>: full street address of the client.</li> <li>• <b>Payment Address</b>: full address where payments are to sent to the client. Only required if the payment address differs from the street address.</li> </ul> <p>Note: Press <b>CTRL + Enter</b> to move to the next line in the address field when the address is on more than one line.</p>
Mark Limit Violations	By default, this switch sets the transaction status to LIMIT VIOLATION. The switch is relevant to the portfolio owner, so if the portfolio owner does not have this turned on, the transactions will not get marked.

Information	Description
Clear Limit Violations	By default, this action enables transactions which have violated a limit and have the status LIMIT VIOLATION to be cleared (i.e. removes the status of LIMIT VIOLATION).
Mark Limit Approvals	This action could for example be configured to change the state of all transactions which do not violate a limit. For example, in a flow such as OPEN — LIMIT-CHECK — VERIFY, the transaction will be moved from the LIMIT-CHECK state to VERIFY. The switch is relevant to the portfolio owner, so if the portfolio owner does not have this turned on, the transactions will not get marked.
Bank Account Balances from Payments	Switch on to calculate bank account balances from payments rather than cashflows.

- In the **Roles** field, select the role or roles that are appropriate to the client and click **OK**.

For example:

- If you are defining a portfolio owner, select the role `Portfolio Owner`, if you want this portfolio owner to function as a counterparty, select the role `Counterparty` as well. This client will be available for selection in all selection lists that require you to select portfolio owners or counterparties.
- If you are defining a bank, and you want that bank to be available when you define settlement instructions, select the role `Bank`.
- If you are trading securities, you may need to refer to where the settlement of the securities trade takes place, i.e. the place of settlement. This place of settlement is known as **Settlement Client**, and clients with roles of `Central Securities Depository (CSD)` or `International Central Securities Depository (ICSD)` can be used as **Settlement Clients**. For more information about how **Settlement Clients** are used in the settlement instructions, see *3.13.1.13 Setting up client settlement instructions* on page 100.

---

**Note:** To select all roles, click **All**. To clear the selection, click **None**.

---

- Save the client definition using **File - Save As New**.
- Complete the client definition using the information in the following sections.

### 3.13.1.1 Assigning clients to groups

To assign a client to a group:

- In Client Editor's **Groups** page, fill in the fields using the information in the following table:

Information	Description
Main Group	Main group in which the client group is located.
Group	Group belonging to the selected Main Group that the client belongs to for this portfolio owner.

- Click **Add**.
- Save the whole client definition using **File - Save**.

### 3.13.1.2 Setting up client contact information

You can make contact details for a client appear automatically on documents or messages (such as trade confirmations). You can also specify different contact details for different kinds of transaction for the same client. First you need to define your contacts and then you need to associate rules with these contacts. The rules you want to use with the contacts must be previously defined in the Rule Editor, see *Chapter 5 Managing rules* on page 221.

You can define the types of message to be sent to each contact or message recipient, and the necessary information (such as the address, or fax number) to ensure that the automatic physical delivery of the message actually takes place. You can manage the processing of these messages in an application called Message Manager: see *Chapter 21 Managing messages* on page 555 for more information.

#### 3.13.1.2.1 Defining contact details

To define client contact details:

1. In Client Editor's **Contact Details** page, enter the contact details using the information in the following table:

Information	Description
Name	Name of the contact.
Phone	Telephone number of the contact.
Address	Postal address to which all ordinary mail to the contact is sent.
Fax	Fax number to which all fax communication to the contact is sent.
Email	E-mail address to which all e-mail communication to the contact is sent. Note: To specify multiple e-mail addresses separate each one by a comma.
Telex	Telex number to which all telex communication to the contact is sent.
SWIFT Code	SWIFT address to which all SWIFT messages to the contact are sent.
Info	Any additional information you want to add about the contact.

2. Click **Add** to assign the contact to the client.
3. Repeat this procedure until you have created all the contacts for the client.
4. Save the whole client definition using **File - Save**.
5. Define the contact rules associated with these contacts, see *3.13.1.2.2 Defining contact rules* on page 92.

#### 3.13.1.2.2 Defining contact rules

After you have defined the contact details, you need to define any specific handling for the contact.

Make sure that you have created the contact and rules must first define the contact details, see *3.13.1.2.1 Defining contact details* on page 92.

To define rules to be used with the contact details:

1. In Client Editor's **Contact Rules** page, define the contact rules using the information in the following table:

Information	Description
Contact Name	Name of the contact. Select the contact you created previously in the <b>Contact Details</b> page.
Priority	Priority of the rule. If the underlying event matches more than one rule, TRM uses the rule with the highest priority.

Information	Description
Message Object	Underlying object in TRM from which the message is generated, for example, Transaction, Settlement, Fixing, Facility, and so on.
Message Group	Message group for which the contact applies. Message Groups are defined in the Message Group Editor. Note: When the field refers to an entity that is created in another editor, you can right-click the field to launch the editor.
Message Type	Message type for which the contact applies. Message types are defined in the Message Type Editor. Note: When the field refers to an entity that is created in another editor, you can right-click the field to launch the editor.
Message Subtype	Subtype (defined in the Message Type Editor) for which the contact applies.
Rule Not Rule	Rule or Not Rule (defined in Rule Editor) that selects the underlying event (for example, a specific transaction) in order for the contact to apply: see <i>Chapter 5 Managing rules</i> on page 221.
Preferred Language	Preferred language of the contact if no language has been defined in the message rule. This information is used to select the correct message layout for a specific message request.
Preferred Medium	Default medium (for example, Fax) of the contact if no medium has been defined in the message rule. This information is used to select both the correct message medium and the correct message layout for a specific message request.

2. Click **Add** to assign the rule to the client.
3. Repeat this procedure until you have created all the contacts for the client.
4. Save the whole client definition using **File - Save**.

### 3.13.1.3 Defining properties

Many properties are assigned to a client for information purposes only (for example, information to be displayed in customized reports, or trade tickets). See *3.3.9.2 Assigning properties* on page 49 for more information.

The client properties (in the standard configuration of TRM) are described in the following table:

Property	Description
BENEFICIARY-BANK-COMMENT	Free text. This text appears in the <b>Beneficiary Bank Comment</b> field of generated payments in Settlement Processing.
BENEFICIARY COMMENT	Free text. This text appears in the <b>Beneficiary Comment</b> field of generated payments in Settlement Processing.
CASHPOOL-PORTFOLIO-1-ID	Portfolio ID of the cashpool portfolio. This is the specific portfolio for the payment transactions used to sweep an account.
CASHPOOL-PORTFOLIO-2-ID	Portfolio ID of the secondary cashpool portfolio. This is the specific portfolio for the payment transactions used to sweep an account if a portfolio owner owns an account in TRM on behalf of an affiliate.
COMPANY-STATUS	(Information only) Company status.
CREDIT-GROUP	(Information only) Credit group.

Property	Description
CUSTOMER-DEALER	(Information only) Name of the customer dealer.
GUARANTOR-ID	(Information only) Guarantor.
ID_BB_COMPANY	The Bloomberg Company ID. Uniquely identifies the client for Bloomberg updates.
INTERMEDIARY-COMMENT	Free text. This text appears in the <b>Intermediary Comment</b> field of generated payments in Settlement Processing.
INTERNET	(Information only) Internet address.
ISDA	(Information only) ISDA status/reference.
NETTING-CLIENT-ID	Client to be used when netting settlements across different portfolio owners in Settlement Processing.
NETTING-PORTFOLIO-ID	Portfolio to be used when netting settlements across different portfolios in Settlement Processing.
RATE-CHANGE-LIMIT	Monetary amount for the rate change limit for any profit/loss resulting from the roll-over or early expiration of a transaction.
RECONCILIATION-PORTFOLIO-ID	Portfolio to use when transactions or payments are automatically generated as part of the settlement reconciliation process in Settlement Processing.
REPORT-GROUP	(Information only) Report group for the client.
SUBSTITUTION-CASH-SETTLEMENT	Method to calculate the cash amount when substituting collateral (for reports and buy-sellbacks), either: Original Collateral Value, if the cash amount is based on the cash amount against which the collateral was originally delivered, or Current Collateral Value, if the cash amount is based on the currency market value of the collateral instrument being substituted.
TELEFAX	(Information only) Telefax number.
TELEPHONE	(Information only) Telephone number.
TELEX	(Information only) Telex number.

#### 3.13.1.4 Creating groups of clients

A group or combination of clients can be, for example, a group of multiple lenders/borrowers (i.e. a syndicate), which is then used as a counterparty of a transaction, or as an issuer or guarantor of an instrument; or the reference entities of an indexed CDS.

To create a group of clients in TRM, you create a client representing the group, and then you add the client members to the group.

To add a client member to a group:

1. In Client Editor's **Member Clients** page, select the first client belonging to the group from the **Client** field.
2. In the **Percentage** field, specify the percentage that this client is issuing or guaranteeing.

---

**Note:** To exclude the client from the list of active clients in the group without removing them (e.g. when a reference entity of a CDS defaults), switch on the **Inactive** switch.

---

3. Click **Add**.
4. Repeat this procedure until you have added all client members to the group.
5. Save the whole client definition using **File - Save**.

### 3.13.1.5 Defining multiple branch SWIFT codes

The SWIFT code is the unique identifier of a SWIFT participant. A legal entity can have more than one SWIFT code (e.g. to identify different units of the legal entity). In case an owner or counterparty has multiple SWIFT codes, you can define these additional SWIFT codes, and link them to transaction rules to indicate when each is to be used. By default, the main SWIFT code (defined in the upper part of Client Editor) is used.

For example:

You have decided to define a given bank as one single entity in the system, i.e. not define the bank's units as separate entities. Sometimes, you may need to trade with one of the units of this bank, or have another unit of the bank take care of the confirmations. In the first case, you want to refer to the unit's SWIFT code instead of the main SWIFT code when referring to the counterparty of the trade (in this case, unit is the **Transaction Party**). In the second case, you want the confirmation messages' recipient to reflect the confirmation unit's SWIFT code instead of the main SWIFT code (in this case, unit is the **Confirmation Party**). In a similar manner, it is possible to refer to SWIFT codes of two units of the portfolio owner in case the transaction owner or owner's confirmation party should be identified through another SWIFT code than the owner's main SWIFT code. To do this, you need to define the units' SWIFT codes, link them to rules identifying when the SWIFT codes are to be used, and define whether the SWIFT code is to be used for referring to Transaction Party or Confirmation Party.

These SWIFT codes are displayed in, for example, Transaction Manager - **Transaction** view, columns: Owner SWIFT Code, Owner Confirmation SWIFT Code, Counterparty SWIFT Code and Counterparty Confirmation SWIFT Code. So, by default the Owner SWIFT Code and Owner Confirmation SWIFT Code columns show the main SWIFT Code of the Owner, but each can be separately overwritten by defining SWIFT Branches for the owner using the mechanism described previously in this section. Similarly, by default the Counterparty SWIFT Code and Counterparty Confirmation SWIFT Code columns show the main SWIFT Code of the Counterparty, but each can be separately overwritten by defining SWIFT Branches for the counterparty.

To define multiple codes for a single client:

1. In Client Editor's **SWIFT Branches** page, fill in the fields using the information in the following table:

Information	Description
Rule	Rule (created in Rule Editor) that selects the transactions relevant to this SWIFT code.
Priority	Rule priority. A low number indicates a higher priority. Determines which SWIFT code to use when there are multiple matches with the same usage (i.e. <b>Transaction Party</b> or <b>Confirmation Party</b> ).
Usage	<p>Determines whether the SWIFT code is to be used as the SWIFT code identifying the transaction party or the confirmation party.</p> <ul style="list-style-type: none"> <li>• <b>Transaction Party:</b> If the Transaction Party usage rule (defined for owner and/or counterparty) matches a transaction, then the owner's/counterparty's main SWIFT code will be overwritten by the SWIFT code defined in the Code field below for the purpose of identifying the transaction party's SWIFT code (i.e. shown e.g. in Owner/Counterparty SWIFT Code column of Transaction Manager).</li> <li>• <b>Confirmation Party:</b> If the Confirmation Party usage rule (defined for owner and/or counterparty) matches a transaction, then the owner's/counterparty's main SWIFT code will be overwritten by the SWIFT code defined in the Code field below for the purpose of identifying the confirmation party's SWIFT code (i.e. shown e.g. in Owner/Counterparty Confirmation SWIFT Code column of Transaction Manager).</li> </ul>
Code	SWIFT code for the transactions selected by the rule in the <b>Rule</b> field.
Info	Any additional information.

2. Click **Add** to assign the SWIFT code to the client.
3. Repeat this procedure until you have defined all the SWIFT codes for the client.

4. Save the whole client definition using **File - Save**.

### 3.13.1.6 Assigning portfolio-owner specific properties

Enhanced properties are like properties, but they are portfolio-owner specific. You can assign them using Client Editor's **Enhanced Properties** page.

### 3.13.1.7 Setting up internal deal mirroring

Internal deal mirroring enables transactions that are traded inter-company to be entered in one portfolio and to be simultaneously mirrored in the portfolio of the counterparty.

To define internal deal mirroring for a client:

1. In Client Editor's **Counterparty Portfolio** page, fill in the fields using the information in the following table.

Information	Description
Counterparty	Counterparty to be used for the child transaction. The client definition of the counterparty must be defined with the Counterparty and Portfolio Owner roles.
Rule Not Rule	<b>Rule or Not Rule</b> (defined in Rule Editor) you have created that defines which Counterparty/Portfolio combination is used for the child transaction.
Priority	Priority of the rule for the Counterparty/Portfolio combination (the lower the number, the higher the priority).
Portfolio	Portfolio to be used for the child transaction when the rule is matched. <ul style="list-style-type: none"> <li>• If you only define one portfolio, this is used by default at deal capture.</li> <li>• If you define more than one portfolio, then the portfolio that matches the rule is selected, but you can change it to one of the other defined portfolios at deal capture.</li> </ul>

2. Click **Add** to apply the Counterparty/Portfolio combination to the client.
3. Repeat this procedure until you have assigned each combination for this client.
4. Save the whole client definition using **File - Save**.

---

**Note:** See 8.5 Deal mirroring on page 300 for more information.

---

### 3.13.1.8 Configuring counterparty-specific limit amounts

In TRM, it is possible to attach specific limit attributes to a client definition - typically, a client defined with the Counterparty role.

These client-specific limits are subsequently accessible from the limit management functionality of TRM and can be used to define limits, where the limit amount (minimum/maximum expression) refers to a particular financial attribute of the counterparty, such as, the percentage of an equity issue held by the counterparty.

---

**Note:** See Chapter 16 Managing limits on page 447 for more information about limits.

---



To configure a limit amount for a counterparty:

1. In Client Editor's **Limit Amount** page, fill in the fields using the information in the following table:

Information	Description
Function Name	Unique name you want to give to the limit function. Note that you must not use the name of an existing function.  When the client definition has been saved, the function is added to Sublimit Calculation Template Editor's <b>Limit Usage Expression</b> field selection list: see <i>16.2.3 Creating sublimit calculation templates</i> on page 461.
Value	Limit amount you want to apply.
Currency	Currency of the limit amount.
Active From Active To	Period within which the limit amount is active for the client.
Description	Any further information you want to add about the limit.

2. Click **Add**.
3. Repeat this procedure until you have added all limits specific to this counterparty.
4. Save the whole client definition using **File - Save**.

### 3.13.1.9 Attaching collateral agreements to portfolio owners

Master agreements define the terms applicable to the transfer of collateral between parties and the respective obligations of the transferor and transferee. In TRM, they are set up as collateral agreements and can be attached directly to a client definition.

---

**Note:** For more information about setting up collateral agreements and monitoring collateral in general, see *Chapter 11 Managing collateral* on page 345.

---

To attach a collateral agreement to a portfolio owner:

1. In Client Editor's **Collateral Agreement** page, fill in the fields using the information in the following table:

Information	Description
Agreement	Master agreement (defined in Collateral Agreement Editor) you want to use for the portfolio-owner.  See <i>11.1 Setting up master agreements</i> on page 345 for more information.
Priority	Priority of the rule that determines which master agreement is used (the lower the number, the higher the priority).
Rule Not Rule	Rule (or Not Rule) you have created in Rule Editor that defines which master agreement is used.  Note: If more than one rule is matched, TRM uses the rule with the highest priority.
Counterparty	Counterparty to which the agreement applies when the rule is matched.
Counterparty Main Group Counterparty Group	Main group and group of the counterparty.

2. Click **Add** to attach the collateral agreement to the client.
3. Repeat this procedure until you have added all collateral agreements to this client.
4. Save the whole client definition using **File - Save**.

### 3.13.1.10 Applying classification groups to a portfolio owner

For accounting purposes, classification groups under which transactions need to be classified for the portfolio owner need to be defined in Client Editor. For example, if an Italian subsidiary needs to report results according to the Local, IFRS, and FAS accounting standards, all of these classification groups need to be applied. This allows the system to recognize which classifications are applicable to each of the subsidiary's transactions.

See 19.1.1.1 *Setting up classification* on page 534 for more information about classification of transactions.

To apply classification groups to a portfolio owner:

1. In Client Editor's **Classification** page, select and add the classification group you want to apply.  
Classification groups are defined in Classification Group Editor: see 3.20 *Classification groups* on page 130.
2. Repeat this procedure until you have defined all the classification groups needed for the client.
3. Save the whole client definition using **File - Save**.

### 3.13.1.11 Setting up client accounts

You define all cash and custody accounts for clients in Client Editor's **Accounts** page.

---

**Note:** All bank entities that you want to use in the settlement instructions must be assigned the role *Bank*.

---

To define an account for a client entity:

1. Select the client for which you want to define a cash and/or custody account.
2. In Client Editor's **Accounts** page, define the account attributes for the client using the information in the following table:

Information	Description
Kind	The type of account: <b>Cash</b> (default) or <b>Custody</b> or both.
Account Type	The type of account. Choices may include: <b>Agency, Closed, Current Account, Custody Account, General, Gift Certificate, Mortgage Trust Funds, Payroll, Trust Fund Account</b> , and so on.
Bank Bank Name	Bank (or other banking entity) where the account is held. Only clients with roles set up as <i>Bank, Correspondent Bank, Account Holder</i> or <i>Custodian</i> are displayed in the selection list.  TRM automatically populates the selected entity's name in the <b>Bank Name</b> field.
Currency	Currency of the account. If you are defining an account that accepts multiple currencies using the switch <b>Multi-Currency Account</b> , you do not need to enter a currency. Note: When you are setting up a Custody account (Kind is set to <b>Custody</b> ), this field is inactive.
Account Name Account Number	Enter the number and name of the cash or custody account. The account number should not exceed 30 characters. Note: For CMM, if you want to leave the field empty (for example, for correspondent or intermediary bank accounts) you must switch on the switch <b>No CMM replication</b> .
Secondary Account Number	Number of the entity's secondary bank account.  This information is visible in Settlement Processing in <b>Cashflow</b> and <b>Settlement Detail</b> views as <i>Our Account (Secondary)</i> or <i>Counterparty Account (Secondary)</i> depending on the entity.

Information	Description
Account Group	Group of the cash account. You use account groups for setting up cash pools. Account group IDs are set up for you at implementation; if you need to change them, contact your TRM consultant.
Opening Date	The date on which the account becomes operational. Note: If you enter a date in this field, cash balances will not be calculated for the account prior to this date. If you leave it empty balances may be calculated for any date.
Balance Type	(Cash accounts only) Balance instrument (needed for calculating the balance on this cash account) that you created for this purpose in the Instrument Editor. See <i>TRM Instruments: Processing and Calculations Guide</i> for information about setting up balance instruments.
Interest Type	(Cash accounts only) Interest-calculation instrument (that specifies how interest is calculated if this is an interest-bearing account) that you created for this purpose in the Instrument Editor. See <i>TRM Instruments: Processing and Calculations Guide</i> for information about setting up interest-calculation instruments.
Owner Portfolio	(Cash accounts only) Portfolio to which the balance transaction is created.
Holder Portfolio	(Cash accounts only) Holder portfolio if the balance needs to be calculated and stored from the account holder's perspective (such as, from the perspective of the bank, or more typically, the corporate treasury). For example, this field is used when defining the accounts of a corporate subsidiary. The portfolio specified in the field <b>Owner Portfolio</b> is owned by the subsidiary and the portfolio specified in this field is owned by the corporate treasury. Both portfolios would contain the same balance, but seen from two different perspectives.
Parent Account	(Cash accounts only) Account number of the parent account to which an aggregate balance of multiple underlying accounts is calculated. This field is used only for calculating an aggregate balance (and accrued interest).
Comment	Any comment you want to add about the account.
No Balance	(Cash accounts only) Switch on to prevent the calculation of the balance for this account. You can use this switch, e.g. if you need to temporarily stop the calculation of an account balance without modifying or deleting the relevant Bank Account Balances activity (see <i>A.1 Bank Account Balances</i> on page 627).
Multi-Currency Account	(Cash accounts only) Switch on to allow settling in different currencies on this account. (If an account is not a multi-currency account, then only cashflows/payments in the currency of the account can settle on that account.) When working with CMM, a multi-currency account with an in-house bank will be an account in the entity's functional currency in CMM. Note: If you turn on this switch, you do not have to specify a currency in the <b>Currency</b> field.
Balance by Counterparty	(Cash accounts only) Switch on to generate account balances by counterparty (used sometimes for intercompany accounts, i.e. not needed for external bank accounts).

3. Click **Add** to add the account to the client.

4. Repeat this procedure until you have defined all the accounts for the client.
5. Save the client definition using **File - Save**.

### 3.13.1.12 Linking settlement locations to clients

To link a settlement location to a client:

---

**Note:** For more information about defining settlement locations, see *3.11 Settlement locations* on page 88.

---

1. Select the client to which you want to link a settlement location.
2. In **Settlement Location** page, in the **Settlement Location** field, select the settlement location that you want to link to this client from the list of available locations.
3. Save the whole client definition using **File - Save**.

### 3.13.1.13 Setting up client settlement instructions

Settlement instruction refers to the chain of banks and accounts on the counterparty's and owner's sides needed to settle a cash payment or deliver a security. TRM supports up to four banks/accounts on each side of the instruction (i.e. a maximum of four banks/accounts for the owner and a maximum of four banks/accounts for the counterparty). TRM provides an automatic, rule-based assignment of the settlement instructions to transactions/cashflows when transactions are entered into TRM.

The standard way for setting up the rule-based settlement instructions is to first link the counterparty's bank accounts to rules (defined in Rule Editor) in order to determine which transactions/cashflows use which account. This is done for each counterparty separately. A similar setup is done on the owner's side, i.e. owner's bank accounts are linked to rules.

Then, in exactly the same manner as for the owner and all counterparties, the banks themselves can be linked to other banks (correspondents and other intermediaries) by defining the accounts of these banks at their correspondents/intermediaries, and linking them to rules to identify when each correspondent/intermediary bank/account is used.

When a transaction is captured, TRM then finds all of the relevant banks/accounts using the rule-based instructions. This is first done for the counterparty, i.e. TRM selects the bank/account for the counterparty using the matching settlement instruction with the highest priority (these will be Bank/Account 1 in the counterparty chain). Once Bank 1 is selected, TRM will check settlement instructions for Bank 1, and select the bank/account for Bank 1 using the matching instruction with the highest priority (these will be Bank/Account 2 in the counterparty chain). Once Bank 2 is selected, TRM will check settlement instructions for Bank 2, and so on. This process will stop at any point when no matching rules are found, or latest when all four banks/accounts are assigned. The same process is then performed on the owner's side, thus resulting in having from zero to four banks/accounts on each side.

As the rule-based selection of banks (especially correspondents/intermediaries) can be quite complicated to manage, TRM provides the following additional ways to facilitate the selection of the banks/accounts:

Instruction	Description
Stop looking for additional banks/accounts	Mark the settlement instruction as the last link in the chain of banks/accounts (switch <b>Last Link</b> ), effectively telling the system not to look for additional banks/accounts, even if rules would match.  In most cases, the settlement instruction between the owner's bank and correspondent bank could be marked as the last link, telling TRM not to look for a third bank into the chain.

Instruction	Description
Control the length of the chain	<p>Control the length of the chain through the Settlement Location. Settlement locations are defined in the Settlement Location Editor. Settlement locations are used to identify a location within which two banks can carry out settlements between each other without intermediaries. That is, usually Settlement Location is a country, and two banks in the same country can settle with each other, while two banks in different countries will still need to go through a correspondent bank to make the settlement. When banks and correspondent banks and other intermediaries are attached to countries, TRM automatically stops/cuts off the chain of banks/accounts as soon as a common country is found.</p> <p>So, when settlement location is used, TRM first creates the chain of counterparty banks/accounts using the standard mechanism for creating the chain. Then, it starts creating the owner's chain, again using the rule-based selection described above. However, every time a bank/account is added on the owner's side, TRM checks the settlement location of the bank added, and if it matches a location of any of the counterparty banks (checked from bank 1 to bank 4), TRM stops adding more banks to the owners chain, and counterparty's chain is cut off so that the last banks in both chains share a common location.</p> <p>For example, let's assume a counterparty in US, portfolio owner in Germany, and settlement currency in EUR. First, the counterparty's chain is created through rules, by selecting bank 1 in US, bank 2 in Germany. Then, as the portfolio owner's bank 1 is already in Germany, TRM stops and does not attach bank 2, even if rule-based selection for owner's bank 1 would find a EUR correspondent bank in France.</p> <p>For more information about setting up Settlement Locations, see 3.12 Settlement locations on page 71.</p>
Defining the complete settlement instruction	<p>Control the length of the chain by defining the complete settlement instruction (i.e. the full chain of banks/accounts) of the counterparty and/or the owner. That is, rather than applying the standard logic for selecting bank 1 through rules (at owner/counterparty), then bank 2 through rules (at bank 1), and so on, it is possible to define all the necessary banks, correspondents and intermediaries (up to four banks), and to link them directly to the counterparty or the owner through a single rule. Such instructions need to be marked as the full chain. Even in this case, if settlement location is used, the chains on both sides will be stopped (cut off) as soon as a common settlement location is found.</p>

In certain cases, a rule-based selection would never provide the ideal settlement instruction. This is, for example, the case when the owner tries to use the same bank as the counterparty. TRM provides three different types of preferences to handle these cases, all of them depend on the selected counterparty bank (Bank 1). All of these preferences take priority over rule-based selection of owner's banks/accounts. If such preferences are required, they all have to be identified when defining the settlement instruction for selecting Bank 1 for the counterparty.

These three preferences are:

Preference	Description
Prefer Counterparty's Bank	<p>If the matching counterparty instruction for selecting Bank/Account 1 is marked as the preferred bank (switch <b>Prefer Bank</b>), then TRM tries to select the counterparty's Bank 1 as the bank 1 of the owner (provided that instructions for this bank exist for the owner), even when rules would prioritize another bank.</p>
Prefer Counterparty's Bank/Account	<p>If the matching counterparty instruction for selecting Bank/Account 1 is marked as the preferred account (switch <b>Prefer Account</b>), then TRM tries to select the counterparty's Bank/Account 1 as the Bank/Account 1 of the owner (provided that instructions for this bank/account exist for the owner), even when rules would prioritize another bank/account.</p> <p>This is usually used for transactions using internal accounts (e.g. subsidiary transacting with the treasury, and settling through accounts with the treasury).</p>

Preference	Description
Prefer Counterparty's Bank's Location	If the matching counterparty instruction for selecting Bank/Account 1 is marked as the preferred location (switch <b>Prefer Location</b> ), then TRM tries to select as the owner's Bank 1 a bank in the same location as the counterparty's Bank 1, even when rules would prioritize another bank.

In some cases, e.g. when a bank functioning as a counterparty holds accounts with itself in a foreign currency, and still needs to use a correspondent bank to do the actual settlement, we need to separate the own account held with itself from accounts at correspondent banks. Marking an instruction as own account (switch **Own Account**) means that the instruction is only used for selecting the counterparty's Bank/Account 1, and never as correspondent or intermediary bank/account (i.e. as Bank/Account 2 to 4).

The settlement instructions are defined in Client Editor's **Settlement Instructions** page. This is where the bank/accounts are linked to rules, and the switches mentioned above can be used to drive the selection of the banks/accounts. Accounts that are defined as cash accounts (kind **Cash**) are only used for settling cash, and never for securities, even if the rule attached to the settlement instruction would match securities deliveries (i.e. cashflows of type Delivery). Similarly, accounts defined as custody accounts (kind **Custody**) are only used for settling securities, and never cash. Accounts that are defined as both cash and custody accounts (kinds **Cash** and **Custody**) can of course be used to settle both.

There are a few specific points relating to securities settlement only. First of all, sometimes securities are settled Delivery versus Payment (DvP), while at other times the cash and the securities are settled independently (separately). In order for a delivery to occur DvP, the settlement instructions of both the owner and counterparty for selecting Bank/Account 1 for the security settlement must be defined as DvP instructions (**Settlement Instructions** page - switch **DvP**).

In addition to the normal chain of custodians and custody accounts, security settlements may need to refer to a place of settlement, i.e. an entity handling the settlement of the security. These entities, defined as any other clients in TRM, and referred to as Settlement Clients, need to have the role of Central Securities Depository (CSD), usually the domestic CSD of the country of issue; or International Central Securities Depository (ICSD), usually one of the global CSDs, e.g. Euroclear and Clearstream. The Settlement Client is an additional piece of information in the delivery instructions, and displayed, for example, in **Settlement Client** field in Transaction Manager (**Instructions** and **Cashflow** views).

Although the Settlement Client can be selected manually when the transaction is captured, TRM tries to default the Settlement Client based on the last custodians on the two sides of the custody chain. However, sometimes the last custodian on either or both sides is not a CSD or ICSD, i.e. it does not act as a Settlement Client. In this case, when defining settlement instructions, it is possible to link such a custodian to a CSD (or ICSD), purely for the purpose of selecting the Settlement Client, and not have the CSD appear as a custodian (i.e. Bank 2 to 4) in the chain of custodians. This can be achieved by flagging the link between the custodian and the CSD specifically as a CSD Link (switch **CSD Link Only**).

According to the above logic, both sides of the custody chain can be defined to end either in a CSD or ICSD, or in a custodian linked to a CSD (which does not appear in the chain of custodians). Then, by default, the system will select the CSD or ICSD of the counterparty as the Settlement Client. If the counterparty chain does not end up in a CSD or ICSD, then the system will select the CSD or ICSD of the owner as the Settlement Client.

In the selection of the Settlement Client, it is possible to prioritize the owner's CSD or ICSD over the counterparty's by flagging the owner's settlement instruction for selecting Bank/Account 1 for the securities delivery as preferred (switch **Preferred CSD** set on owner's side, and not set on counterparty's side).

Similarly, if a CSD is prioritized over an ICSD, it can be achieved by flagging the counterparty's settlement instruction for selecting Bank/Account 1 for the securities delivery as **Prefer Domestic CSD**. This will check the two clients in the order specified above, but in addition, a client that is a CSD, and not an ICSD, will be selected as the Settlement Client.

Finally, in some cases, e.g. internal transactions, it is not necessary to assign settlement instructions at all. For such cases, it is possible to define a 'no instructions' settlement rule (using the **No Instructions** switch). Transactions/cashflows that match such a rule on both the owner and counterparty side will not receive any instructions, and no settlements will be generated for them.

To define the settlement instructions for a client:

1. In Client Editor's **Settlement Instructions** page, define the settlement instructions using the information in the following table:

Information	Description
Kind	Type of account: <b>Cash</b> (default) or <b>Custody</b> or both. This field is used to filter the list of available accounts. If you leave this field empty, it will be populated automatically when you select the first account.
Rule	Rule (created in Rule Editor) used to automatically select the correct bank account to be used for each transaction and cashflow.
Not Rule	Rule that defines which transactions do not use these settlement instructions.
Currency	Currency to which the settlement instruction applies.
Priority	Number indicating the priority of this settlement instruction. You assign priorities to avoid conflicts between rules: the lower the number, the higher the priority. If a transaction matches more than one settlement instruction, then the instruction with the highest priority is applied.
Bank (1, 2, 3, 4)	Select the ID of the bank (or banks) in the relevant <b>Bank</b> field from the list of available banks. This list is filtered according to the account type you selected in the <b>Kind</b> field. If you cannot find your bank in the selection list, check that it has the role <b>Bank</b> assigned to it. Note: To define an instruction that contains the complete settlement instruction (i.e. the full chain of banks/accounts), switch on <b>Full Chain</b> switch.
Account Number (1, 2, 3, 4)	Number of the account.
Active From Active To	Start and end dates for period when the settlement instructions are active.
Comment	Any comment you want to add about the account rule (settlement instruction).

2. Select the switches you want to use with the instructions:

Switch	Description
Last Link	Switch on to indicate that this bank is the last link. That is, the account chain stops at this bank, and TRM does not look for additional banks/accounts, even if rules match.
Full Chain	Switch on to indicate that the instruction contains the complete settlement instruction, i.e., the full chain of banks/accounts (up to four banks). No other banks will be added to the chain.
Own Account	Switch on to identify an account held by the bank with itself. When this switch is set, then this account is not used as a correspondent bank/account.
Prefer Bank	If this switch is on in the matching counterparty instruction for selecting Bank/Account 1, then TRM tries to select counterparty's Bank 1 as Bank 1 of the owner (provided that instructions for this bank exist for the owner), even if rules would prioritize another bank.
Prefer Account	If this switch is on in the matching counterparty instruction for selecting Bank/Account 1, then TRM tries to select the counterparty's Bank/Account 1 as Bank/Account 1 of the owner (provided that instructions for this bank/account exist for the owner), even if rules would prioritize another bank/account.

Switch	Description
Prefer Location	If this switch is on in the matching counterparty instruction for selecting Bank/Account 1, then TRM tries to select as owner's Bank 1 a bank in the same location as the counterparty's Bank 1, even if rules would prioritize another bank.  Transactions/cashflows that match such a rule on both the owner and counterparty side will not receive any instructions, and no settlements will be generated for them.
No Instructions	If this switch is on in the matching owner and counterparty instruction for selecting Bank/Account 1, then TRM assigns no instructions for the cashflow, and no settlements are generated.

3. For custody accounts only, you can flag the status as DvP:

Switch	Description
DvP (Delivery versus Payment)	Switch on to indicate a settlement as delivery-versus-payment. For a delivery to occur as DvP, both the owner and counterparty must have this switch on in their respective settlement instructions for selecting Bank/Account 1.

4. For custody accounts only, you can use the following switches to change the default settlement client behavior.

Switch	Description
Preferred CSD	Indicates that the owners custodian is preferred as Settlement Client to the Counterparty's custodian.  Switch on in the owner's settlement instructions (and off in the counterparty's settlement instructions) to select Bank/Account 1 for the securities delivery.
Prefer Domestic CSD	Indicates that CSD is preferred over ICSD.  Switch on in the counterparty's settlement instruction for selecting Bank/Account 1 for the securities delivery. TRM still checks the counterparty's last custodian, owner's last custodian, and the default Settlement Client of the security (in that order), but a client with the role CSD (and not ICSD) will be preferred as Settlement Client.
CSD Link Only	Indicates that the settlement instruction is only a link between a custodian and a CSD (or ICSD), i.e. this CSD (or ICSD) will only impact the selection of the Settlement Client, and as such will not appear in the chain of custodians (Bank 2 to 4).  If the settlement instruction is marked as <b>Full Chain</b> and <b>CSD Link Only</b> , then the last custodian of the full chain can only be considered as a settlement client, and no longer as a custodian in the settlement chain.

5. Click **Add** to add the settlement instructions for the client.

6. Save the whole client definition using **File - Save**.

### 3.13.1.13.1 Generating client settlement reports

In TRM, you can produce the following settlement instruction-related report:

Report	Description
Settlement Instruction Chain	Used to display a hierarchical view of a client's chain of settlement instructions.  This report allows you to visualize the bank account details for a portfolio owner. When a report has been generated, it is possible to drill-down further into the settlement details to enable their modification directly in the editor.  See <i>B.47 Settlement Instructions Chain Report</i> on page 678 for details of the report's parameters.



### 3.13.1.14 Specifying automatic netting for settlement flows

For each counterparty, you can use rules to define which incoming and outgoing cashflows you want to automatically net during the settlement process.

---

**Note:** It is possible to undo automatic netting in Settlement Processing.

---

To specify which settlement cashflows to net automatically for a counterparty:

1. In Client Editor's **Netting Rules** page, fill in the fields using the information in the following table.

Information	Description
Rule	The Settlement Rule (created in Settlement Rule Editor) that selects the settlements you want to be netted automatically. For example, create a settlement rule called FX to net only FX transactions.
Priority	Number indicating the priority of this automatic netting rule. You assign priorities to avoid conflicts between rules: the lower the number, the higher the priority.
Contact Person FAX Phone	Contact details of a person or department to be informed when settlements are netted automatically.
Info	Any additional information you want to add.

2. Click **Add** to add the netting rule.
3. Repeat this procedure until you have defined all the netting rules for the client.
4. Save the whole client definition using **File - Save**.

### 3.13.1.15 Settling in another currency

For a portfolio owner, you can use rules to define which cashflows are to be settled in a different currency.

---

**Note:** TRM enables you to settle using a currency other than the cashflow currency, but only if the payment currency belongs to the same family as the cashflow currency (see *3.9.1.1 Defining currency quotations* on page 80).

---

To define a payment currency rule to indicate which cashflows are to be settled in a different currency for a portfolio owner:

1. In Client Editor's **Payments** page, fill in the fields using the information in the following table:

Information	Description
Priority	Priority that this payment currency rule has compared to other payment currency rules for this client.
Currency	Currency of the cashflow which is to be settled in the currency specified in the Payment Currency field.
Rule	Rule that you created in the Rule Editor that defines to which transactions/cashflows this payment currency rule applies.
Payment Currency	Currency in which cashflows matching this payment currency rule are to be settled.
Comment	Any additional information you want to add about this payment currency rule.

2. Click **Add** to add the rule.
3. Repeat this procedure until you have defined all the payment currency rules for the client.

4. Save the whole client definition using **File - Save**.

### 3.13.1.16 Assigning credit ratings to clients

You can assign credit ratings to clients. This is usually done for clients who have cashflows, such as issuers and counterparties).

Note that you must create the credit ratings before you can assign them to clients. Credit ratings are set up in Credit Rating Editor: see *3.31 Credit ratings (optional)* on page 142.

To assign a credit rating to a client:

1. In Client Editor's **Credit Ratings** page, for each rating you want to assign to the client, select the relevant rating and code.
2. In the **Active From** and **Active To** fields, define the period that the credit rating is active for the client.

You can leave the **Active To** field blank: the rating is then assumed to be valid either indefinitely (if there are no other ratings) or until the next **Active From** date (if you specify another rating).

3. Click **Add**.
4. Save the whole client definition using **File - Save**.

### 3.13.1.17 Assigning credit spread curves to clients

You can assign a default credit spread curves to a client entity. This means that it is not necessary to define a credit spread curve at instrument level in order to value credit default swaps.

If no credit spread curve is defined at instrument level, valuation defaults to the credit spread curve defined for the reference entity (that is, the client entity stored as the issuer of the transaction).

Note that you must create the credit spread curves before you can assign them to clients. Credit spread curves are set up in IR Quotes and Yield Curve Editor: see *3.8 IR quotes and yield curves* on page 64.

To assign a credit spread curve to a client:

1. In Client Editor's **Credit Spread Curves** page, in the **Active From** and **Active To** fields, define the period that the credit spread curve is active for the client.

You can leave the **Active To** field blank: the curve is then assumed to be valid either indefinitely (if there are no other curves) or until the next **Active From** date (if you specify another curve).

1. In the **Spread** field, select the credit spread curve you want to assign to the client.
2. Click **Add**.
3. Save the whole client definition using **File - Save**.

## 3.13.2 Managing clients

The following sections describe the different ways in which clients can be managed in TRM.

### 3.13.2.1 Renaming clients

It is possible to rename a Client Id using Admin Center's Renaming Tool (see the *TRM System Administration Guide* for more information).

The Rename Client ID report shows all instances where a client ID exists in TRM. You use this report when you want to assess the impact involved in changing a client name.

See *B.43 Renaming Client ID Report* on page 677 for details of the report's parameters.

---

**Note:** Reports are set up and managed from Report Generator: see *Chapter 7 Reporting* on page 235 for more information.

---

### 3.13.2.2 Modifying clients

If you have modified a client definition, it is possible to update any instruments and transactions that refer to the client by running the Checking Instruments and Transactions activity.

See *A.10 Checking Instruments and Transactions Clients* on page 630 for details of the activity's parameters.

---

**Note:** Activities are set up and managed in Activity Manager: see *Chapter 6 Managing activities* on page 227 for more information.

---

## 3.14 Portfolios

In TRM, all cashflows (transactions, payments, interest, fees, bank-account balances, and so on) are held in portfolios. Each portfolio has an owner (normally, your own organization), and various settings that determine how transactions and cashflows are handled in that portfolio.

For each portfolio, you can control which actions users can do (for example, all, create, modify, read, and so on) with the transactions that portfolio contains. The concept of portfolio users covers not only people, but also TRM processes affecting transactions in the portfolio. These processes are: BATCH, which allows activities to update transactions in the portfolio; LIMON, which allows limit calculations; and TICKET, which allows the automatic printing of trade tickets.

Portfolios can be designated as comparison and/or benchmark portfolios and used to measure how much a trading portfolio's key-figures deviate from those of the comparison portfolio. You can select any portfolios to be comparison and/or benchmark portfolios: for example, similar portfolios held by different dealers, if those dealers want to compare their positions' profit/loss against that of the other dealers.

When you have created all your portfolios, you can compile them into hierarchies. This enables you to analyze positions at different levels (for example, for your whole organization, one subsidiary, or one trader). The portfolio at the top of the hierarchy is called the top portfolio, and whenever one portfolio is directly above another, then the higher one is the parent portfolio and the lower one is the subportfolio of the parent.

If a portfolio is a parent in a portfolio hierarchy, its allowed user settings are automatically inherited by subportfolios underneath it. However, you can modify these settings for each subportfolio, if necessary.

---

**Note:** Parent portfolios are used for grouping subportfolios; you could theoretically have parent portfolios as, for example, trading portfolios, but this is not recommended.

---

### 3.14.1 Creating portfolios

To define the main attributes of the portfolio:

1. In the upper part of Portfolio Editor, enter the main attributes for the portfolio using the information in the following table:

Information	Description
Template	Portfolio template on which you want to base this portfolio.
ID & Name	Unique ID and descriptive name for the portfolio.
Owner	Client that owns the portfolio. The clients listed in the selection list are those created with the role <code>Portfolio-Owner</code> .
Base Currency	Default currency for this portfolio's risk and P/L calculations, and reporting.
Opening Date Closing Date	Date from which, and until which, this portfolio is valid. TRM prevents transactions from being saved to the portfolio on dates that are outside this date range.
Risk Rate	Enter a percentage offset (1 for 1%, 2 for 2%, and so on) for this portfolio. This is used for IR exposure (parallel risk) calculations. The offset is applied according to the date basis and the rate type defined in the interpolation method of the yield curve (see 3.8 <i>IR quotes and yield curves</i> on page 64).
Creator	(Information only) ID of the user creating the portfolio.
Domain	Domain in which this portfolio applies.

2. Save the whole portfolio definition using **File - Save As New**.
3. Complete the portfolio definition using the information in the following sections.

#### 3.14.1.1 Setting further portfolio attributes

It is possible to define how transactions are handled in each portfolio, and give various attributes to the portfolio itself, for example, whether it is a trading portfolio, and so on.

To set further portfolio attributes:

1. In Portfolio Editor's **Switches** page, turn on the switches you need using the information in the following table (from left to right):

Switch	Description
Allow Short Selling	Match purchases and sales strictly in FIFO order, based on trade/value date (depending on whether trade or value date selling is used) and input the time of the transaction into the system.  It is therefore possible to short, that is, to sell before buying. For this to work in all cases, back dated transactions should be entered with the opening time, not just opening date.
Benchmark	Define the portfolio as a benchmark portfolio to be used to generate benchmark transactions. You must also switch on the <b>Comparison</b> switch.  For more information about benchmarking, see <i>Chapter 15 Managing benchmarks</i> on page 429.
Comparison	Define the portfolio as a comparison (or benchmark) portfolio.  Note: If you are defining a benchmark portfolio, you must also switch on the <b>Benchmark</b> switch.
Fund	Make this a fund portfolio.
FX Position Result	Use this switch in combination with the switch <b>FX Position Roll Over</b> when you use Closing rate to roll over FX positions and want the system to create result transactions.  Note: If you want the system to use a result currency different to the portfolio currency, you must also select the property <b>FX Position Result Currency</b> (Portfolio Editor - <b>Properties</b> page) in combination with this switch.
FX Position Roll-Over	Use this switch for portfolios where you want to roll over FX position. You will need to select these portfolios when creating the activity FX Position Roll Over.  See <i>12.4 FX Position Roll Over activity</i> on page 397 to create the activity.
Not Bookable Not Payable	Prevent bookkeeping entries ( <b>Not Bookable</b> ) or payments ( <b>Not Payable</b> ) from being generated for the transactions in the portfolio.  Note: If a portfolio's setting conflicts with the result treatment setting of the instrument, then the portfolio setting takes precedence.  For example, it is possible to define both a portfolio and a result treatment as <b>Not Payable</b> and/or <b>Not Bookable</b> . <ul style="list-style-type: none"> <li>• If a portfolio has either of these switches turned on but the result treatment of the transaction is not defined in the same way, then the portfolio setting overrides the result treatment setting. For benchmark portfolios</li> <li>• If these switches are not turned on in the portfolio definition, then the result treatment setting is used.</li> </ul> <p>Therefore, if a portfolio does not have either of these switches turned on, but Result Method A = Not Payable and Not Bookable, and Result Method B = Payable and Bookable; if you enter a transaction in this portfolio, then it will be both payable and bookable for Result Method B, but not for Result Method A. In this case, the result treatment setting is used because there is no setting in the portfolio.</p> <p>However, if the portfolio has the <b>Not Payable</b> switch turned on, no matter which result treatment is used, if you enter a transaction in this portfolio then it will never be payable. In this case, the portfolio setting overrides the result treatment setting.</p> <p>The portfolio definition defines the result treatment for the entire transaction. You use the result treatment setting to define for which classification or accounting standard the transaction should or should not be payable (or bookable): see <i>Chapter 19 Managing accounting</i> on page 533 for more information.</p> <p>Note: For Benchmark portfolios: Switch on the switches <b>Not Payable</b> and <b>Not Bookable</b> so that benchmark transactions are not included respectively in the settlement process or accounting process.</p>

Switch	Description
Own Issuing	Define the Issuer as also being the portfolio-owner. For example, this switch is used to specify that all bond purchases are to be considered as buybacks.
Push Prices	Used to save market data for transactions in the portfolio. If this switch is on, you can view all market data applied in the Front Office for a specific trade by generating a Transaction Market Rate report: see <i>B.52 Transaction Market Rate Report</i> on page 680 for details of the report's parameters. Note: To store transaction prices, this switch must be set to on, and the TFLO-ACT_STORE-TRANSACTION-PRICES rule must match for the transaction.
Sell Ignoring Packages	When this switch is on, FIFO selling ignores all possible packaging of the transactions being processed.
Simulation	(Commercial Loans only) Allow this portfolio to be used in simulation drawdowns.
Trading Portfolio	Allow this portfolio to be used as a trading portfolio. The only portfolios available from Transaction Manager are those which have been created as trading portfolios.

2. Save the whole portfolio definition using **File - Save**.

### 3.14.1.2 Assigning allowed users and processes

To assign allowed users and their permissions in the portfolio:

1. In Portfolio Editor's **Allowed Users** page, select the first user or group you want to add in the **User** field.

---

**Note:** The **Allowed Users** page cannot be used when SDM is enabled. With the correct object permissions, a user may be able to view the page but will not be able to enter any new portfolio permissions; the **User** and **Permission** fields are disabled.

---



---

**Note:** The DBO (database owner, generally defined as user ID "fk") has ALL access to all portfolios. This user ID does not show in any portfolio user list.

---

2. From the **Permission** field, select the permission for the user or group, namely what they can do with the transactions in this portfolio (create, modify, read, and so on). For example, if you are setting up a benchmark portfolio, select **BATCH** in the **User** field and **ALL** in the **Permission** field.
3. Click **Add** to add the allowed user or group with the selected permission.
4. Repeat this procedure until you have added all the allowed users and their permissions for this portfolio.
5. Add the following special users (processes) and give the permission ALL.

Process	Permission
Batch	Allow transactions in the portfolio to be updated by activities.
Limon	Allow transactions in the portfolio to be included in limit calculations, and therefore to appear in the Limit Violations mode of Transaction Manager if they exceed their limit: see <i>16.5 Analyzing limit violations</i> on page 484.
Ticket	Allow transactions in the portfolio to be automatically given printed trade tickets.

6. Save the whole portfolio definition using **File - Save**.

### 3.14.1.3 Setting up cost-of-carry for portfolios

Cost-of-carry is the cost associated with funding a position. In TRM, you can have the cost-of-carry calculated automatically for any portfolios with a position. The balance in each currency is displayed separately, each with its own cost-of-carry result.

If you want to have cost-of-carry calculated for your portfolio, you need to assign a cost-of-carry instrument (see the guide *TRM Instruments: Processing and Calculations* for information about setting up cost-of-carry instruments).

For more information about cost-of-carry, see *18.1.2.1 Setting up cost-of-carry* on page 500.

To set up cost-of-carry for a portfolio:

1. In Portfolio Editor's **Cost-of-Carry** page, fill in the fields using the information in the following table:

Information	Description
Instrument	<p>Cost-of-carry instrument you want to assign to the portfolio.</p> <ul style="list-style-type: none"> <li>• If you do not specify a currency in the <b>Currency</b> field, the instrument set up will apply to all currencies.</li> <li>• If you enter a currency in the <b>Currency</b> field, you restrict the currency to which this instrument applies to that currency.</li> </ul> <p>Any number of instrument/currency combinations can be defined. See <i>18.1.2.1.2 Assigning cost-of-carry instruments to portfolios</i> on page 500.</p>
Currency	<p>Currency for which the cost-of-carry instrument entered in the <b>Instrument</b> field applies if you want to specify a yield curve per currency to calculate the cost-of-carry balance.</p>

2. Repeat this procedure until you have added all the instrument and currency combinations you need for the portfolio's cost-of-carry calculations.
3. Save the whole portfolio definition using **File - Save**.

---

**Note:** For more information, see *12.1.7 Monitoring cost-of-carry positions* on page 390.

---

### 3.14.1.4 Restricting transactions into this portfolio (optional)

You can control which types of transaction can enter this portfolio. You do so by assigning rules (created in Rule Editor) in Portfolio Editor's **Rule** page. If you do not specify any rules in the definition, then all transactions will be able to enter the portfolio.

---

**Note:** See *Chapter 5 Managing rules* on page 221 for more information about rules.

---

To restrict the transactions into this portfolio:

1. In Portfolio Editor's **Rules** page, assign the rules using the information in the following table:

Information	Description
Rule	<p>Rule that identifies the type of transactions that you want to either include or exclude from this portfolio (depending on whether the <b>Allowed</b> switch is on or off).</p> <p>The only rules to appear in the selection list are those of the category Portfolio or System (in other words, those rules for which, in Rule Editor's <b>Categories</b> page, either the <b>Portfolio</b> or <b>System</b> switches are turned on).</p> <p>Note: If the rule does not appear in the list, right click this field to launch the Rule Editor to verify that the rule is properly set up, or to create a new rule.</p>
Priority	<p>Number indicating the priority of this rule compared to other transaction rules assigned to the portfolio.</p> <p>You assign priorities to avoid conflicts between rules: the lower the number, the higher the priority. For example, if a rule with priority 1 (top priority) does not allow a transaction to enter the portfolio and a rule with priority 2 does, the transaction is not allowed into the portfolio.</p>
Reason	<p>Comment that explains why the transactions defined by the rule are allowed, or not allowed, into this portfolio.</p>
Allowed	<p>This switch determines whether transactions matching the rule are to be included (switch on) or excluded (switch off). By default, the switch is off (transactions excluded).</p> <p>Note: If you want to enter a rule to exclude transactions (switch off), you must enter another rule to create which transactions can be included. This rule could be a rule allowing all transactions. Also, the allowed rule must have a higher priority (lower number) than the not allowed rule. For example, you want to allow all transactions except equities: you assign first an allowed rule for all transactions, and then a not allowed rule (with a lower priority) for equities.</p>

2. Click **Add** to assign the rule to the portfolio.
3. Repeat this procedure until you have assigned all the rules you need for this portfolio.
4. Save the whole portfolio definition using **File - Save**.

### 3.14.1.5 Defining result treatments for a portfolio

The default method used to calculate and treat results for an instrument can be overridden at portfolio level.

To define result treatment for instruments in a portfolio:

1. In Portfolio Editor's **Result** page, fill in the fields using the information in the following table.

Information	Description
Result Type	<p>Result type to use for the portfolio.</p> <p>Result types are defined in Result Type Editor: see <i>3.15 Result types and results</i> on page 114</p>
Result	<p>Method of calculating and treating results that is applied to the result type.</p> <p>Result treatment methods are defined in Result Editor: see <i>3.15.2 Results</i> on page 115.</p>
Result Mode	<p>(Information only)</p> <p>Result mode that applies to this result treatment.</p>

2. Click **Add** to assign the result treatment to the portfolio.
3. Repeat this procedure until you have assigned each one you need for this portfolio.



4. Save the whole portfolio definition using **File - Save**.

---

**Note:** For more information, see *19.1.2 Result treatment methods* on page 535.

---

### 3.14.1.6 Aggregating result calculations across portfolios

It is possible to aggregate transactions across portfolios for the purpose of result calculation. This is achieved by assigning a result portfolio for each trading portfolio.

It is also possible to aggregate transactions with average method on the level of parent portfolio for different owners. The resulting balance transactions have one common owner who is the owner of the parent portfolio.

For more information, see *19.1.2.3 Aggregating results across portfolios* on page 536.

To aggregate result calculations across portfolios:

1. In Portfolio Editor's **Result Aggregation** page, select the accounting standard (result mode) you want from the **Result Mode** field.
2. In the **Portfolio** field, select the result portfolio.  
This portfolio should be a direct parent of the actual trading portfolios.
3. Save the whole portfolio definition using **File - Save**.

## 3.14.2 Managing portfolios

The following sections describe the different ways in which portfolios can be managed in TRM.

### 3.14.2.1 Renaming portfolios

It is possible to rename a portfolio ID using Admin Center's Renaming Tool (see the *TRM System Administration Guide* for more information).

### 3.14.2.2 Creating portfolio hierarchies

To create a portfolio hierarchy:

1. In Portfolio Editor's **Subportfolios** page, select the first subportfolio for this parent from the **Subportfolio** field.
2. Specify a factor if required.

You can define factors between top and subportfolios to support monitoring of partial ownerships of subportfolios in the portfolio tree. The factor specifies how much of the subportfolio should be taken into account when viewing the position through the top portfolio in question. Factors are used as multipliers for all positions (cashflows) coming from the subportfolio when viewing positions in Treasury Monitor and position reports.

3. Click **Add** to confirm your choice.
4. Repeat this procedure until you have added all the subportfolios for this parent portfolio.
5. Save the whole portfolio definition using **File - Save**.

#### 3.14.2.2.1 Viewing portfolio hierarchies

You can view a portfolio hierarchy in the application called Portfolio Tree by selecting the portfolio you want to view from the list on the left side of the application. The portfolio does not have to be a top portfolio. TRM shows the portfolio, plus the hierarchy of all portfolios under it in the main part of the application.

You can open a portfolio directly in Portfolio Editor by double-clicking any portfolio in either the list (left side) or hierarchy (main part) of the application.

You can modify the display, if required using the following **View** menu options:

Menu item	Description
Select List Columns	Opens a multi-selection list from which you can select the columns you want to be displayed on the left side of the application.
Select Boxes' Columns	Add or subtract information displayed in each portfolio box.
Show User Permissions	Switch on and off the display of user permissions set for each portfolio.
Display Property Names	Switch on and off the display of text that shows what the box column text is (ID, Name, Client, and so on).
Tree Layout: Vertical / Horizontal	Switch the orientation of the display: From horizontal (top portfolio to left and branches to right) to vertical (top portfolio at top and branches underneath) From vertical to horizontal.
Boxes Connection: Straight / Corners	Switch the pathways connecting portfolios between corner connection and straight connection.
Background Color: Gray Background / White Background	Change the background color of the display from white to gray, or gray to white.
Zoom In Zoom Out Zoom to Default	Zoom into the display (to enlarge the figures), zoom out (to see more of the grid), or zoom to default (to reset the original zoom).

## 3.15 Result types and results

### 3.15.1 Result types

In TRM, the method of calculating results for transactions is based on result types. Result types are used as a way of grouping result treatments.

A combination of result treatments can be defined for one result type, each one representing a different way of calculating, treating, or processing the results of an instrument's deals. These types are important since they drive the available result treatment methods that can be applied for each instrument. It is not possible to create an instrument definition without a result type.

---

**Note:** The result type must not be changed at instrument level once transactions have been created using that instrument as there may be an impact on result calculations.

---

Result types are defined in Result Type Editor.

To define a result type:

1. Enter the main attributes for the result type in the upper part of Result Type Editor.

Information	Description
ID & Name	Unique ID and descriptive name for the result type.
Domain	Domain in which the result type is available. Domains are used to restrict information access to certain users of TRM.

2. Save the result type using **File - Save As New**.

3. Complete the definition of the result type by defining the different result treatments: see 3.15.2 *Results* on page 115.

---

**Note:** For more information, see *Chapter 19 Managing accounting* on page 533.

---

### 3.15.2 Results

For each result type defined in Result Type Editor, it is necessary to define the different ways results can be calculated, treated, and processed for the same instrument according to the result mode (accounting standard) that applies.

Result treatments are defined and attached to a result type in Result Editor.

---

**Note:** See 19.1.2 *Result treatment methods* on page 535 and 19.2 *Realizing and processing results* on page 537 for more information.

---

### 3.15.3 Defining result treatments

To define a result treatment:

1. Define the main attributes of the result treatment by filling in the fields in the upper part of Result Editor using the information in the following table:

Information	Description
ID & Name	Unique ID and descriptive name for the result treatment.
Type	Result treatments are grouped within a result type (defined in Result Type Editor). Select the result type to which you want to apply this result treatment.
Result Mode	Result mode you want to use for the calculation of results according to this result treatment. Choose from one of the following: FO/MO (Front Office/Middle Office) which is used for trader or middle office views, and FAS, IFRS, or Local which are used for accounting treatment.
Result Method	(Information only) Result method which is assigned to this result mode.
Default	Switch on <b>Default</b> to specify if this is the default result treatment for the result type.

2. Save the result treatment definition using **File - Save As New**.
3. Complete the result treatment definition using the information in the following sections.

#### 3.15.3.1 Defining IR result methods

In Result Editor's **Result IR** page, you define the methods used to calculate accrued interest, the accrual or amortization of an instrument's flows, and the way in which these flows are booked in accounting.

The parameters defined in this page have an impact on the way the following figures are calculated: Accrued Interest and Accrued Profit.

To define the IR calculation methods for the result treatment:

1. For swap instruments only, in the **Leg Group** field, specify the leg of the swap instrument to which this result treatment applies.

This field allows you to define the **Accrual Method** separately for each leg of the swap.

---

**Note:** You would generally specify this value when you define the result treatment to use for a settled cross-currency asset swap where the price on each leg is more or less than 100: see the guide *TRM Instruments: Processing and Calculations* for more information.

---

2. In the **Accrued Interest** field, select the method you want to use for interest accrual: for example, Linear, Actual/Actual Accrual, and so on.

The AI method defined here is used to calculate the Accrued Interest figure.

If you leave this field blank, the system defaults to the **AI Method** defined at instrument level (in Instrument Editor's **IR Valuation** page) using the **Base IR Setup** feature: see the guide *TRM Instruments: Processing and Calculations* for more information.

3. In the **Accrual Method** field, select the method you want to apply for the accrual or amortization of discount/premium.

This is used to calculate the Accrued Profit figure.

Information	Description
Actual/Actual Accrual	This method is the same as <b>Linear Accrual</b> but uses actual days.
Actual/Actual Accrual (Index Linked)	This method is similar to <b>Actual/Actual Accrual</b> , except that the discount/premium is calculated between the book value and the index-adjusted redemption amount (Indexed Principal), instead of calculating it between the book value and the redemption amount.
FRN Yield Accrual	This method is similar to <b>Yield Accrual</b> , except that it calculates yield to maturity for FRNs by using the latest fixing (coupon amount) as an estimate for all future coupon amounts.
FRN Yield Accrual (Next Call)	This method is similar to <b>FRN Yield Accrual</b> , except that it is used for callable/puttable FRNs to accrue the discount/premium to the next call date. When there is no next call date (i.e. all call dates are in the past) then the yield and accrual are calculated to the maturity date.
Linear Accrual	The discount/premium of a fixed/floating rate bullet instrument is amortized linearly from the value date until the maturity date of the transaction using the cashflow date basis. In the case of an amortizing instrument, the discount/premium is split proportionally between the redemptions, and each portion is amortized linearly from the value date until the payment date of the redemption to which it relates.
Linear Accrual (Index Linked)	This method is similar to <b>Linear Accrual</b> , except that the discount/premium is calculated between the book value and the index-adjusted redemption amount (Indexed Principal), instead of calculating it between the book value and the redemption amount.
Yield Accrual	With this method, the effective interest rate (yield to maturity) is calculated by finding the rate that exactly discounts the future cashflows of the transaction to the invested capital (and costs included into book value).  This yield is then used to calculate interest income for assets, or interest expense for liabilities.  When using this method, the Accrued Profit figure adjusts the Accrued Interest figure (based on the coupon rate) to achieve the requirement that the total interest result is calculated using the effective interest rate of the transaction.  Time dependent yields are displayed in the <b>Accrual Yield</b> view in Transaction Manager.
Yield Accrual (Index Linked)	This method is used for Australian index-linked bonds (CIB) to allow yield based accrual of discount/premium. Yield calculation and accrual are based on the estimation of future coupons and redemption using the index ratio at latest index fixing.
Yield Accrual (Next Call)	This method is similar to <b>Yield Accrual</b> , except that the yield accrues to the next call date of a callable bond. When there is no next call date (i.e. all call dates are in the past) then the yield and accrual are calculated to the maturity date.
Yield Accrual (Next Coupon)	This method is similar to <b>Yield Accrual</b> , except that the yield accrues to the next coupon date instead of to the maturity of the transaction. Therefore the yield is not a YTM (Yield to Maturity) but a yield to the next coupon value date.

Information	Description
Yield Accrual (U.S.Street)	This method is similar to <b>Yield Accrual</b> , except that the discount factor applied to discounting the future cashflows is calculated using the U.S. Street formula, instead of using straight discounting (ISMA).
Yield Accrual (w/o Coupons)	This method is similar to <b>Yield Accrual</b> , except that all interest/coupon flows are excluded from the yield calculation, and the difference between principal and redemption is amortized as for a zero-coupon bond.  This method is generally used for floating-rate instruments, for which yield is not a well-defined concept.

4. In the **Switches** field, activate the switches that apply to this IR result treatment.

**Note:** For amortized bonds only: Depending on your business needs, you might need to treat discount/premium in the same way as balanced costs. In which case, you must select the switches **Book at Par**, **Revalue Against Par**, and **Discount/Premium as Cost**, and define a setup for balanced costs (Accrual Method and Date Basis). See *3.15.3.7 Defining balanced costs methods* on page 124.

Information	Description
Balance Accrued Interest	Enables interest balancing accounting. If this switch is on, then relevant cashflows are created at the time of a buy (balanced interest) and at the time of a sell (realized interest, closing cashflow for balanced interest). The cashflows are used to generate correct clearing accounting events.
Book At Par	If this switch is on, any discount/premium at purchase or issue is booked on a separate account.
Book Redemption Premium	If this switch is on, any redemption premium is booked up front on a separate account.
Discount /Premium as Cost	If this switch is on, discount/premium is treated as a cost (as defined in the <b>Balanced Costs</b> page). See <i>3.15.3.7 Defining balanced costs methods</i> on page 124.
Revalue Against Par	If this switch is on (and <b>Book At Par</b> is also on): <ul style="list-style-type: none"> <li>• A Book Value (discount/premium) cashflow is generated, and the book value of the transaction is adjusted to the nominal amount. All figures (for example, FX Profit and MtoM Profit) are calculated based on the nominal amount.</li> <li>• Original discount/premium is closed proportionally at de-recognition (re-booking from the Balance Sheet to the Profit/Loss account as Accrued Profit).</li> <li>• The FX Profit Adjustment figure is calculated for the discount/premium, and realized when the <b>Use Book FX Rate</b> switch (see below) is off.</li> </ul>
Separate Accrued Discount Profit	If this switch is on, a separate, simple Accrued Discount Profit figure is calculated (and realized), using the same formula as for <b>Accrued Fee Profit</b> and <b>Accrued Profit (BVC)</b> .
Use Book FX Rate	If this switch is on, the book FX rate is used instead of the daily FX rate when converting foreign currency accruals (discount/premium) into base currency.  When this switch is on, the transaction FX rate is used as a basis for conversion of the accrued profit. This applies for unrealized accrued profit during the life of a transaction, as well as for the realized accrued profit at expiration or maturity of a transaction.

5. Click **Add**.
6. For swap instruments only, repeat the procedure to define the result treatment for the remaining legs.
7. Save the result treatment definition using **File – Save**.

8. Complete the result treatment definition using the information in the following sections.

### 3.15.3.2 Defining yield accrual methods

In Result Editor's **Accrual Yield** page, you define the methods used to calculate yield accrual.

To define the yield accrual method for this result treatment:

1. In the **Accrual Yield** page, fill in the fields using the information in the following table:

Information	Description
Interest Type	Interest type used to calculate yield accrual: Periodic Rate, Compounded Rate, Discount Rate, and so on.
Date Basis	Date basis applied for yield accrual calculations.
Accrued Interest	Method applied for interest accrual: for example, Linear or Actual/Actual Accrual.

2. Save the result treatment definition using **File – Save**.

3. Complete the result treatment definition using the information in the following sections.

---

**Note:** In Instrument Editor's **Accrual Yield** page you can define parameters at instrument level to override the setup defined here (using the **Accrual-Yield-Setup** feature): see the guide *TRM Instruments: Processing and Calculations* for more information.

---

### 3.15.3.3 Defining FX result methods

In Result Editor's **Result FX** page, you specify how the total result of an FX deal should be distributed into FX profit and IR profit.

See *TRM Instruments: Processing and Calculations Guide* for more information.

To define the FX result method for this result treatment:

1. In the **Profit Method** field, select the method you want to use:

Method	Description
FX Forward	With this method there is no calculation of accrued interest; the result is simply split between FX result and IR result. The FX result is calculated as the part of the result caused by changes in the FX Spot Rate. The IR result is the part which cannot be attributed to changes in the FX Spot rate, in other words it can be attributed to changes in the FX Forward Rate.  Since this method does not use interest accrual but uses movements in market prices to calculate result, it corresponds most closely to marking-to-market for IR instruments.
FX/IR Difference	Accrued interest is calculated for the whole FX deal: the difference between the Deal Spot Rate and the Deal Forward rate, accrued linearly. FX result is calculated as for the FX method above. IR result is the part of the result that cannot be attributed to accrued interest or to movements in the FX Spot Rate.
FX/IR Diff. No Discount	This method is a modified version of FX/IR Difference; the FX result is calculated based on changes in the FX rate, assuming that the forward rate does not change. This FX result definition means that if an FX transaction has no FX exposure, then it generates no FX result.

Method	Description
FX Interest	Accrued interest is calculated by accruing the difference between the forward cashflow amount and the spot cashflow amount.  In the case of an FX forward where there is no spot leg settlement amount, the system calculates the 'pseudo' spot leg settlement amount by taking the user-entered currency amount as the 'pseudo' spot leg settlement amount, and calculating the 'pseudo' spot leg settlement amount for the other currency, using the spot rate of the transaction.
FX Implied Interest	Accrued interest is calculated by accruing the difference between the forward cashflow amount and the book reference amount (the cashflow amount discounted by the interest rate of the currency).  This method corresponds most closely to accrual bookkeeping (linear method) for IR instruments.
FX Implied Yield	Accrued interest is calculated by accruing the difference between the forward cashflow amount and the book reference amount (the cashflow amount discounted by the interest rate of the currency).
FX Interest (no realization)	The method calculates unrealized AI figure, as it is done in method <b>FX Interest</b> but with no realization.

- For accounting events only: If you are using the switch **Position Accounting for FX** (Accounting Configuration Editor - Result Mode Configuration), you can suppress FX Profit on FX Profit methods of type 'Interest' by setting the switch **No FX Result**.

---

**Note:** **No FX Result** is only supported for the FX Result methods that calculate interest, not for methods where FX Profit is explicitly required, such as 'FX Forward'.

---

- Save the result treatment definition using **File – Save**.
- Complete the result treatment definition using the information in the following sections.

### 3.15.3.4 Defining option results

In Result Editor's **Result Option** page, you define how results are calculated and treated for option instruments.

To define the option result methods for this result treatment:

- In the **Exercise Treatment** field, select the way in which you want the option's premium flow to be treated when the option is exercised.

Information	Description
Premium as Book Value	Premium amount is added to the book value of the underlying transaction at exercise. In the case of a no exercise, the premium amount is booked as profit or loss.
Premium as Result	Premium amount is realized as profit or loss at exercise or no exercise.

- In the **Accrual Method** field, select the method you want to apply for accrual of the premium.

Information	Description
Linear	Linear accrual of the full option premium until the exercise date.

Note that accrual will not take place in the following cases:

- If an **Accrual Method** is not specified

- If Book Value **Method** = `None` (defined in Result Editor's **Book Value** page). This parameter should be set to one of the invested capital values.

3. In the **Switches** field, activate the switches that apply to this option result treatment.

Information	Description
Separate Intrinsic and Time Value	If this switch is on, at deal entry, the system stores the split between Time Value and Intrinsic Value, so that time value accrual can be done and the premium can be split into its components for accounting purposes.
Use Book FX Rate	If this switch is on, the accrued profit (that is, the premium accrual) is converted using the book FX rate.

4. Save the result treatment definition using **File – Save**.

5. Complete the result treatment definition using the information in the following sections.

### 3.15.3.5 Defining selling methods

In Result Editor's **Selling** page, you define the selling parameters used to match transactions either manually in Transaction Manager, or automatically using the End of Day Processing activity.

**Note:** See 8.4.6 *Matching and unmatching transactions* on page 288 for more information.

To define the selling methods for this result treatment:

1. In the **Method** field, select the selling method you want to apply using the information in the following table:

Information	Description
None	If None is selected, matching will not be available for instruments with this result treatment.
FIFO	FIFO uses the "first in first out" principle to match transactions: therefore, the sold transaction is automatically matched with the first transaction made.
Average	Average is used for average balance transactions. This means that the sold transaction is matched with the average balance transaction. The sold transaction and the average balance transaction are in the same portfolio and the same underlying instrument is used.
Manual	Manual must be selected if you want to manually match sold and bought transactions in Transaction Manager's Matching mode. This method allows you to manually match any sold transaction to any amount of any bought transaction. For example, you can match Transaction A with half of Transaction B and half of Transaction C.

2. In the **Submethod** field, select the selling sub-method you want to use for this result treatment: Choose from:

- Opening Date = Trade Date selling
- Opening Time = Trade Time selling (available when **Method** = `FIFO` only)
- Settlement Date = Value Date selling.

3. In the **Switches** field, activate the switches that apply to this selling method.

Information	Description
Allow P/L Amortization in EE	When this switch is on, it is possible to amortize the Sell Profit resulting from a IRS or loan early expiration linearly between the settlement date of the early expiration and original maturity date of the swap.



Information	Description
Matching By Counterparty	If this switch is on, any buys and sells will be matched against each other only if the counterparty of the transactions is the same.
Matching by Facility	(Commercial loans only) If this switch is on, any buys and sells will be matched against each other only if they have been traded under the same facility.
No Partial Cost Realization	If this switch is on, no partial realization of the discount/premium will take place in the case of a partial buy back.
Payable Sell Profit (Future, Netted Option)	If this switch is on, a payable P/L cashflow will be created for futures and options with future style premium when the position is closed (i.e. long and short positions are matched). If the switch is off, the P/L cashflow will be not payable.

4. Save the result treatment definition using **File – Save**.
5. Complete the result treatment definition using the information in the following sections.

### 3.15.3.6 Defining book value methods

In Result Editor's **Book Value** page, you can define the methods used to establish the book value of each transaction and to update a transaction's book value. See *19.3 Updating the book value of deals* on page 539 for more information.

To define the book value methods for this result treatment:

1. In the **Method** field, select the method you want to use to establish the book value of each transaction, for example, whether fees or accrued interest are included in the book value.

---

**Note:** If fees are going to be settled in different currencies, and you want a separate book value cashflow for each fee settlement currency, use the corresponding method ending with (per ccy).

---

Information	Description
Invested Capital	<ul style="list-style-type: none"> <li>• For On-balance instruments: Book Value of the transaction does not include any transaction costs. Transaction costs are expensed immediately (or balanced separately).</li> <li>• For Options: Option premium is not expensed immediately but balanced, and considered as the book value of the transaction in result and risk calculations. It can be accrued into P/L over the term of the option contract, or balanced and re-booked into P/L at exercise/no-exercise/close-out.  If this method is used for Caps/Floors/Collars, the premium is allocated to the entire option, and realized at maturity.</li> </ul>

Information	Description
Invested Capital and Costs	<ul style="list-style-type: none"> <li>For On-balance instruments: Value of the transaction includes all transaction costs regardless of their attributes. Costs included in the Book Value are amortized as part of the discount/premium amortization, according to the <b>Accrual Method</b> (defined in the Results IR page) used to calculate the Accrued Profit figure. If this method is used and the Result IR switches <b>Book at Par</b> and <b>Revalue Against Par</b> are activated: <ul style="list-style-type: none"> <li>Book Value (original) + embedded fees + discount/premium = Nominal Amount If the asset/liability position account (balance sheet) needs to reflect the par value, the fees should be mapped onto that account at purchase/issue.</li> <li>FX Profit is calculated on the Nominal Amount, and FX Profit Adjustment is calculated on the discount/premium + embedded fees.</li> <li>At de-recognition, Accrued Profit is calculated as: Closing factor * (discount/premium + fees)</li> </ul> </li> <li>For Options: This method is not applicable.</li> </ul>
Invested Capital and Re-Offer Costs	<p>Only fees with the Re-Offer Price attribute will be included in the book value.</p> <ul style="list-style-type: none"> <li>For On-balance instruments: Book Value of the transaction consists of invested capital and transaction costs with the Re-Offer Price attribute. Costs included into the Book Value are amortized as part of the discount/premium amortization, according to the <b>Accrual Method</b> (defined in the Results IR page) used to calculate the Accrued Profit figure.</li> <li>For Options: This method is not applicable.</li> </ul>
Invested Capital and All-In Costs	<p>Only fees with the All-In Price attribute will be included in the book value.</p> <ul style="list-style-type: none"> <li>For On-balance instruments: Book Value of the transaction consists of invested capital and transaction costs with the All-In Price attribute. Costs included into the Book Value are amortized as part of the discount/premium amortization, according to the <b>Accrual Method</b> (defined in the Results IR page) used to calculate the Accrued Profit figure.</li> <li>For Options: This method is not applicable.</li> </ul>
None	<ul style="list-style-type: none"> <li>For On-balance instruments: This method is not applicable.</li> <li>For Options: Option premium is expensed immediately, that is, considered as realized result on the premium payment date. The Option carries no book value affecting result and risk calculations.</li> </ul>
field empty	<ul style="list-style-type: none"> <li>For Options, premium is balanced by default. The default handling for Cap/Floor premium is to divide the premium proportionally between each caplet, and realize per caplet.</li> </ul>

Note that:

- **Deal Price** is the price at which the investor buys the securities before fees, expenses and accrued interest,
- **Re-Offer Price** is the **Deal Price** adjusted for all re-offer qualifying fees.

- **All-In Price** is the **Deal Price** (excluding Accrued Interest) adjusted for all transaction-related fees.
- **Deal Price** is manually entered at deal entry, whereas **Re-Offer Price** and **All-In Price** are calculated by the system.

2. In the **Change Method** field, select the method you want to use to update the book value of a transaction.

Information	Description
Write Down methods	<p>Write Down methods take each profit figure into account individually before changing the book value of the instrument.</p> <p>For example, if MtoM Profit is positive but FX Profit is negative, only the FX Profit is realized and nothing is done for the MtoM Profit figure.</p> <ul style="list-style-type: none"> <li>• Write Down/Up - adjusts the book value either upwards or downwards (that is, whether there is a profit or loss), and whatever the original book value.</li> <li>• Write Down/Up (MtoM only) - same as Write Down/Up but any change will not take FX Profit into account.</li> <li>• Write Down/Up (FX only) - same as Write Down/Up but only FX Profit is realized.</li> <li>• Write Down - same as Write Down/Up, but only losses are realized.</li> <li>• Write Down (MtoM only) - same as Write Down but any change will not take FX Profit into account.</li> <li>• Write Down and Capped Write Back - only losses are realized, but book value can be adjusted back up to the original book value.</li> <li>• Write Down and Capped Write Back (MtoM only) - same as Write Down and Capped Write Back, but any change will not take FX Profit into account.</li> </ul> <p>The following apply to Index-linked Bonds only:</p> <ul style="list-style-type: none"> <li>• Write Down/Up (Residual MtoM only) - same as Write Down/Up but any change will not take Indexation Profit into account.</li> <li>• Write Down (Residual MtoM only) - same as Write Down but any change will not take Indexation Profit into account.</li> <li>• Write Down and Capped Write Back (Residual MtoM only) - only losses are realized, but book value can be adjusted back up to the original book value. Indexation Profit is not taken into account.</li> </ul>
HGB	<p>HGB method takes the sum of the figures into account, before an upward or downward change in book value occurs.</p> <p>For example, if MtoM Profit is positive, but FX Profit is negative and in excess of the MtoM Profit figure, then the book value change will write down and book the figures separately.</p>
Never	If this method is selected, then the instrument's book value will never change.
Manual	If this method is selected, then the book value can be changed manually at transaction level.

3. In the **Switches** field, activate the switches you want using the information in the following table:

Information	Description
Allow Adjustments	<p>Switch on if you want to allow book value adjustments during the life of the transaction.</p> <p>If this switch is on, the <b>Book Value Adjustment</b> action is enabled on the transaction. This action allows you to make book value adjustments to target either cost accruals or fair value changes: see <i>19.3.3 Making book value adjustments</i> on page 540 for more information.</p>

Information	Description
Allow Forward Fixing	Switch on if you want to allow Forward Fixing. This is essentially a book value change done on a transaction value date for securities traded at forward. The change method for this case is always Write Down/Up (MtoM only). Fixing itself is executed either with an action available in the Transaction Manager or with the help of a dedicated Forward Fixing activity (see <i>A.36 Forward Fixing</i> on page 641 for information on the activity parameters).
Amortize from Value Date	Switch on to amortize book value changes since the value date. If this switch is on, amortization figures related to the book value change cashflows will be generated from the value date of a transaction onwards even though a book value change was done before the value date: see also <i>19.3 Updating the book value of deals</i> on page 539 for more information.
Keep Costs Separated	Switch on if you want to specify that costs that are part of the book value are to be booked and realized separately (from discount/premium). If this switch is on, Accrued Profit (Costs) and Accrued Profit (BVC) are calculated separately for closing the books when these figures are defined as bookkeeping entries: see <i>19.4.3 Defining bookkeeping entries</i> on page 545.
No BVC for Pending Transactions	Switch on to suppress Book Value Change within the pending period. If this switch is on, the Book Value Change action is not permitted for pending (spot and pre-spot) transactions before their settlement date. Such transactions will also be skipped when executing the <i>Book Value Change</i> activity: see also <i>19.3 Updating the book value of deals</i> on page 539 for more information.
No FX Realization	Switch on to suppress FX realization for (on-balance) IR/EQ instruments. When used, closing/maturity events are converted using the current FX rate. Note: Only if you are using the switch <b>Position Accounting for FX</b> (Accounting Configuration Editor - Result Mode Configuration)

4. Save the result treatment definition using **File – Save**.
5. Complete the result treatment definition using the information in the following sections.

### 3.15.3.7 Defining balanced costs methods

Sometimes fees that are not part of the book value still need to be accrued/amortized and booked separately on the Balance Sheet.

In Result Editor's **Balanced Costs** page, you define how these costs are handled.

The parameters defined in this page have an impact on the way the following figures are calculated: Accrued Profit (Costs) and Accrued Profit (Excluding Costs).

To define the balanced costs methods for this result treatment:

1. In the **Balanced Costs** field, select the costs (excluded from the book value) that are to be balanced. Select from: None, All Costs, Re-Offer Costs, and All-In Costs.
2. In the **Accrual Method** field, specify how the balanced costs are amortized.

Information	Description
Linear	The fee is amortized linearly from the value date until the maturity date of the transaction using the cashflow date basis.
Actual/Actual	This method is the same as <b>Linear</b> but uses actual days.

3. In the **Date Basis** field, select the date basis you want to use for balanced cost accrual calculations.
4. Save the result treatment definition using **File – Save**.

### 3.15.4 Parallel Result Treatment

Parallel result calculation (parallel accounting) uses the concept of Result Modes. It is possible to calculate different results on a single transaction for different purposes like accounting GAAPs (such as LOCAL, IAS/IFRS, FAS), or to differentiate between front/middle office results and accounting results.

A transaction can belong to one or more of the defined Result Modes. A single result definition is assigned to the transaction in each of its Result Modes.

For parallel result calculation, definitions for the result calculation logic are defined as result treatments in Result Editor (3.15.3 *Defining result treatments* on page 115), and linked to instruments/portfolios, rather than directly in instrument or portfolio definitions.

To link the result treatment to transactions/cashflows, a result context is used. This bit mask is stored as part of the cashflow information (`Cashflow.contexts`) at deal insert, and it is used by the valuation and realization code to calculate parallel results according to the result definitions assigned to the transaction. This information is also used for filtering the displayed/processed cashflows per Result Mode on Transaction Admin, Treasury Monitor, reports and accounting.

Technical setup must be done during implementation (or during upgrade, before instrument and transaction migration) in the ResultContext and ResultContextGroup tables. A setup file `result_contexts` is supplied, and the Wallstreet Suite Installer provides a standard setup as follows:

- three result context groups: AS-LOCAL (default), AS-IFRS, AS-FAS, with 8 contexts each
- eight result contexts in each of the three result modes, with a naming convention as in the example later in this section.

Result contexts are bit values that are defined in the ResultContext table, according to the following logic:

Value	Description
id	Integer value starting from 0 running across all Result Modes; maximum id is 31 (maximum 32 values can be set)
contexts	Bit value defined as power of 2; maximum context value = $2^{31}$
name	Reference name of the result context; it appears as Result Method in Result Editor. In the example below, the name consists of the name of the mode, the number of the context within the mode and the total number of contexts allocated for that mode.
flags	1 = Not Bookable. Only to be used for a special Result Mode for which no accounting is expected. 2 = Not Payable. Normally, only the contexts in the default Result Mode should be payable, to avoid multiple payments.

The number of result contexts assigned to a Result Mode defines the maximum number of different parallel result treatments available per Result Type (see 3.15 *Result types and results* on page 114) within that Result Mode. In the example below, a maximum of eight different results can be configured for each Result Type in Result Mode AS-LOCAL. Result contexts are linked to the actual result treatments in Result Editor.

Result Types are usually set per Instrument Type/Group. For example, BOND-INVEST could be defined as the Result Type used for investments in debt securities, and different results configured for the Result Type could define different selling methods (FIFO, Average Balances), and/or different Accrual Methods (None, Linear, Yield Accrual).

Result Modes are configured in the ResultContextGroup table by grouping the context values defined in ResultContext into named groups according to the following logic:

Information	Description
id	Integer value starting from zero.

Information	Description
contexts	Sum of the context values allocated to Result Mode.
name	Name of the Result Mode
flags	1=Default. One of the Result Modes must be specified as default. If a separate mode is defined for Front or Middle Office, it should be specified as default.

If parallel accounting is not used, only one Result Mode needs to be set up. One or more Classification Groups can be defined for each Result Mode in Classification Group Editor (see 3.20 *Classification groups* on page 130), and linked to Portfolio Owners in Client Editor, implicitly defining the Result Modes used by that Portfolio Owner. If no such setup is done for a Portfolio Owner, only a context in the default Result Mode is assigned to the transactions/cashflows of the Owner.

The following is an example of the setup using multiple Result Modes:

table ResultContext				table ResultContextGroup			
id	contexts	name	flags	id	contexts	name	flags
0		1 AS-LOCAL-1/8	0	0		255 AS-LOCAL	1
1		2 AS-LOCAL-2/8	0	1	65280	AS-IFRS	0
2		4 AS-LOCAL-3/8	0	2	16711680	AS-FAS	0
3		8 AS-LOCAL-4/8	0				
4		16 AS-LOCAL-5/8	0				
5		32 AS-LOCAL-6/8	0				
6		64 AS-LOCAL-7/8	0				
7		128 AS-LOCAL-8/8	0				
8		256 AS-IFRS-1/8	2				
9		512 AS-IFRS-2/8	2				
10		1024 AS-IFRS-3/8	2				

contexts 1 - 128  
contexts 256 - 32768

## 3.16 Instrument types

The notion of instrument class is specific to TRM. Instrument classes denote the different categories of instruments which are supported by TRM. They are pre-defined in the system and cannot be changed by the user.

Classes are only used as a basis on which to define instrument types. Once the types have been defined, the instrument classes are no longer used.

An instrument type inherits all the features contained in the instrument class automatically. Features are system-defined attributes used to give instruments their distinctive functionality and enable deal capture, transaction processing, and position monitoring.

---

**Note:** The concepts of instrument classes, instrument types, and features are explained in the guide *TRM Instruments: Processing and Calculations*.

---

The first step in defining instruments involves creating all the instrument types that are necessary to use the system.

You may wish to create more than one instrument type based on the same class to create more specific instrument definitions. For example, the instrument class Bond is used to define many different types of bond instruments, such as fixed-rate bonds, floating-rate bonds, dual-currency bonds, and so on. Creating and customizing an instrument type for each type of bond makes it easier to define the instruments. Nevertheless, it is still possible to have only one instrument type, and differentiate the setup later, when the instruments themselves are created.

To create and customize an instrument type:

1. In Instrument Type Editor, define the main characteristics of the instrument type.

Information	Description
ID & Name	Unique ID and name for the instrument type.
Class	Instrument class on which the instrument type is based. The instrument class defines which features are attached to the instrument type by default.

2. In the **Features** page, remove any features which are not required in the instrument type.  
By default, the type inherits all the features contained in the instrument class.
3. Modify the characteristics of each feature as necessary using the **Default** and **Frozen** switches.
  - If the **Default** switch is on, the feature is assigned by default to an instrument based on this instrument type. Default features can be deleted in Instrument Editor, but may result in loss of functionality.
  - If the **Frozen** switch is on, the feature cannot be deleted in Instrument Editor. It is usually the main (primary) feature for the instrument.
4. Save the instrument type definition using **File - Save As New**.

## 3.17 Instrument groups

Each instrument is assigned to an instrument group during the setup process. Groups are used as a means of identifying instruments and matching transactions throughout TRM.

Instrument groups are arranged into a simple hierarchy, where each group is assigned one parent. Instruments can only be assigned to a single instrument group in the hierarchy.

The first level of the instrument group hierarchy is pre-defined in the system, but can be modified at implementation according to your organization's requirements. You then create further instrument groups for the lower levels of the hierarchy to reflect the requirements of your organization.

The first level of the hierarchy could typically represent the markets in which you trade; such as Debt Instruments, Foreign Exchange, and Equities. Instrument groups in the second level could correspond to different types of instruments traded in these markets, and any lower levels would usually be created for instruments, which are derived from the same instrument type, but have different characteristics.

Instrument groups from any level in the hierarchy can be used as a parameter when setting up reports or rules, and when monitoring instruments. The instrument group you use depends on how specific the rule, report, or position needs to be.

To create an instrument group:

1. In Instrument Group Editor, define the main characteristics of the instrument group.

Information	Description
System ID	(Information only) System-generated identification number.
Parent Group	ID of the parent of the instrument group.
ID & Name	Unique ID and name for the instrument group.

2. Save the instrument group definition using **File - Save As New**.

## 3.18 Instrument Templates

Instrument type is a mandatory attribute of an instrument template. A template inherits all features of the selected type automatically in the same manner as instrument types inherit their features from instrument class. Just as in instrument types, inherited features can then be modified by removing optional features, adding mandatory features, and changing the default features.

When a feature is identified as default or mandatory in the template, the editor automatically refreshes the loaded data to allow the related setup of the feature to be added to the template in the same way as in the Instrument Editor.

Instruments can be set up either against instrument types or against instrument templates:

- If the instrument is created by selecting the instrument type, default and mandatory features of the type are automatically loaded into the instrument and optional features of the type are made available on the selection list of features. All other setup is made manually in Instrument Editor. See *3.19 Instruments* on page 129 for more information about creating instruments.
- If the instrument is created from an instrument template, the following actions take place:
  - The Instrument Type defined in the selected template is populated
  - Default and mandatory features of the template are automatically loaded for the instrument and optional features of the template are made available in the selection list of features.
  - All values of fields and sub-entities pre-defined in the template are populated
  - Fields and sub-entities identified as not-editable in the template are grayed out and those identified as mandatory are displayed in red.

Instrument templates are created in the Instrument Template Editor. This editor is designed in a similar way to any other static data template editors. It contains the configuration fields and pages that can be found in the Instrument Editor; it can identify the default values and template settings for them. However, there are some special characteristics of instrument entity which are reflected in the template editor as well:

- Due to the potentially large number of pages, sub-entity settings are not identified in the main part of the editor as in other static data template editors, but are identified in the **Subentity Flags** page. All editor pages needed for setup of selected default and mandatory features are automatically available on this page and normal template settings can be assigned to them.
- Pages that relate to setup information that is specific to the instrument, for example, Cashflows page (Bonds), are not available in the template editor.

---

**Note:** These sub-entities are available on **Subentity Flags** page where they can be made mandatory for instruments using the template.

---

- Schedules for bond instruments cannot be created in instrument template. Instead, one or several schedule templates can be selected in **Schedule Template** page as available to be used in Instrument Editor. When an instrument template is selected for an instrument, any one of the identified schedule templates can be selected. If no schedule template is identified in the instrument template, any template can be used in the instrument. If only one schedule template is identified in instrument template, that schedule is automatically selected for the instrument and the associated schedules are automatically created by the system.



To create an instrument template:

1. In the Instrument Template Editor, define the main characteristics of the instrument template in the upper part of the editor.

Information	Description
Template Template Name	Unique ID and name for the instrument template. The Template field mandatory.
Domain	Domain in which the instrument template is available.
Instrument Type	Instrument type on which the instruments will be based. This is a mandatory field. When you select the instrument type, the associated features (flagged as Default and Frozen) are loaded automatically in the <b>Feature</b> page and the subentity flags are added to the <b>Subentity Flags</b> page when further setup is required.

2. In the **Features** page, customize the list of features as necessary:
  - Add or remove features
  - modify the characteristics of each feature as necessary using the **Default** and **Frozen** switches.
3. In the **Subentity Flags** page, customize the the following switches as necessary and click **Update** to save your changes:
  - **Editable**: you have access to the page and can provide a value. All mandatory fields are editable by default.
  - **Ignore Template Value**: you will not override a value which was defined before you applied the template. This means that if a field is blank in the template, if you apply the template to an entity for which a value already exists for that field, the existing value is not replaced.
  - **Mandatory**: you must provide values for mandatory attributes. Labels for mandatory fields are displayed in red in the corresponding editor.
4. Define the specific parameters for each feature that you want to be inherited by the instruments.  
The values you need to enter to define a particular category of instrument are explained in the guide *TRM Instruments: Processing & Calculations*.
5. Save the whole definition by using **File - Save As New**.

## 3.19 Instruments

In TRM, all instruments share several main characteristics and are set up in a similar way in Instrument Editor.

The specific instrument setup required for a particular category of instrument is explained in more detail in the relevant section of the guide *TRM Instruments: Processing and Calculations*.

To set up an instrument:

1. In Instrument Editor, define the main characteristics of the instrument in the upper part of the editor.

Information	Description
ID & Name	Unique ID and name for the instrument.
Instrument Type	Instrument type on which the instrument is based. This is a mandatory field.
Instrument Group	Instrument group to which the instrument belongs (defined in Instrument Group Editor).
Active From Active To	Active period (From/To dates inclusive) to restrict the period in which the instrument can be traded in TRM (optional).
Buy Label Sell Label	Labeling for Buy/Sell transactions (optional) to override the default settings.
Result Type	Result type to use for this instrument. This is a mandatory field (see <i>3.15 Result types and results</i> on page 114). Note: The result type must not be changed once transactions have been created using the instrument as there may be an impact on result calculations.
Domain	Domain in which the instrument is available.
To be checked	Marks that the instrument has a calendar with holiday changes (not yet impacted). This switch is switched on during the processing of the activity <i>Checking Instruments and Transactions Holidays</i> , see <i>A.11 Checking Instruments and Transactions Holidays</i> on page 630 for more information.

2. In the **Features** page, add or remove the features you need for this instrument.  
The addition of some features requires further parameters to be defined in the instrument setup.
3. Define the parameters for each feature that are specific to the instrument.  
The values you need to enter to define a particular category of instrument are explained in the guide *TRM Instruments: Processing & Calculations*.
4. Save the whole instrument definition using **File - Save As New**.

### 3.19.1 Generating reports on instruments

All static data editors have a **Tools - Run report** menu option, from which you can generate a report showing the entities that have been created in that editor (see *3.3.9.5 Generating reports on static data entities* on page 50).

In Instrument Editor, it is also possible to run separate reports according to Instrument and Instrument Type, for example, Instrument Bond report, Instrument Equity report, and so on.

When a report has been generated, it is possible to drill-down further into one of the listed instruments in order to view its underlying attributes in more detail (such as a bond's cashflows or schedules): see *7.2.3 Drilling down into reports* on page 239 for more information.

## 3.20 Classification groups

In TRM, the process of applying different accounting treatments to instruments or transactions can be based on classification. In this case, each transaction needs to be classified appropriately within each accounting standard; for example, Held-to-Maturity (HTM) for FAS, and Available for Sale (AFS) for IFRS.

Transactions are classified once within each applicable classification group. A classification group is usually defined as one accounting standard, with individual classifications set up within the group. It is possible to define an unlimited number of classifications within each group: see *Chapter 19 Managing accounting* on page 533 for more information.

Classification groups are defined in Classification Group Editor.

To set up a classification group:

1. Enter the main attributes for the classification group in the upper part of the editor.

Information	Description
ID & Name	Unique ID and descriptive name for the classification group.
Domain	Domain in which the classification group is available. Domains are used to restrict information access to certain users of TRM.
Result Mode	The specific result mode that the classification is linked to. The groups FO/MO, FAS, IFRS, and Local are preconfigured during implementation.

2. In the **Classification** page, define each individual classification within the group:

Information	Description
ID & Name	Name of the classifications within the group. For IFRS, for example, the classifications may be: IFRS/TRADE; IFRS/HTM; and IFRS/AFS.

3. Save the classification group using **File - Save As New**.

## 3.21 Classification rules

Transactions need to be classified at some point in the transaction flow, but before the transactions reach a state where they can be booked. Classification rules can be defined to provide default classifications for transactions. These rules are defined in Classification Rule Editor.

See *Chapter 19 Managing accounting* on page 533 for more information.

To set up a classification rule:

1. In Classification Rule Editor, enter the main attributes for the classification rule.

Information	Description
ID	(Information only) System-generated identifier of the classification rule.
Priority	Number indicating the priority of a rule in the event that two conflicting rules apply at the same time: the lower the number, the higher the priority.
Classification Group	Classification group to which the rule is applied.
Classification	Classification to which the transaction is classified if the rule matches.
Rule Not Rule	Rule (or not rule) to apply to the transaction. Rules are set up in Rule Editor (see <i>Chapter 5 Managing rules</i> on page 221).

2. Save the classification rule using **File - Save As New**.

## 3.22 Comments and comment rules (optional)

It is possible to attach any number of default comments to either a transaction or a settlement. Default comments can be added either manually using the **Add Comments** action or automatically when the transaction or settlement reaches a particular state in either the transaction or settlement flow (for example when the transaction's state changes from OPEN to VERIFY). In the latter case, comments can be added without explicit user intervention.

The setup of default comments is done in Comment Rule Editor. When a given transaction or settlement matches a transaction or settlement rule, the default comments specified in the editor are added to the transaction or settlement. Once the comments are available within Transaction Manager or Settlement Processing, they can be accessed by TRMSwift and Document Manager.

A comment can be specified as mandatory, meaning that it must have a value if the transaction or settlement is to move past a certain point in the flow.

### 3.22.1 Setting up a comment rule

To set up a comment rule:

1. In Comment Rule Editor, set up a rule as follows:

Information	Description
Name	Identifies the purpose of the comment. When formatting a message, this is used to indicate which comments that have been added to the transaction or settlement should be used.  For a given transaction/settlement, the name should be unique for all comments that are added. If more than one exists, then the rule that matches with the highest priority is the only one that is used.  Typically, many transactions/settlement may have comments with the same name (purpose), but contain different values based on the rule. A transaction rule and a settlement rule can have the same name and will be distinguished based on the type.
Code	Indicates the type of information that the comment contains. TRMSwift uses this value to construct field 72 of the message (Sender to Receiver information). The code to use depends on the context and the type of SWIFT message; for more information, see the SWIFT documentation.
Value	The text value of the comment. If this is blank and the comment is set as mandatory (i.e. a <b>Mandatory Minimum State</b> is specified), the user must supply a comment before the transaction or settlement can be moved further in the flow.
Type	Can be either <b>Transaction</b> or <b>Settlement</b> . This determines which of the two types of entity the comment is for. It also determines which list of rules to show in the <b>Rule</b> field.
Rule	Rule ID of the available transaction or settlement rules (depending on the <b>Type</b> specified).
Mandatory Minimum State	Transaction or settlement state from which the comment is considered mandatory before the transaction or settlement can be advanced in the flow. If a value is set here and if the flow has been set up accordingly, then it will not be possible to move past this point in the flow if the comment value is blank. See the <i>TRM System Administration Guide</i> for information on how to set up transaction and entity flows.
Available Minimum State	Transaction or settlement state from which the comment is available on the transaction or settlement. Before this state the comment is not added. To be added by the flow, the flow needs to be set up accordingly. See the <i>TRM System Administration Guide</i> for information on how to set up transaction and entity flows.  Note: If the transaction is moved past the minimum state and then rejected to before the minimum state, the comment will remain displayed.

Information	Description
Switches	<p><b>Copy to Settlement:</b> Check this to copy the transaction comment to the settlement comment when the settlement is generated. It is available only for transaction comments.</p> <p>Note: The transaction comment will not be copied to the settlement if the comment is empty.</p>

2. Save the rule definition using **File - Save**. The comment is now available to add to a transaction or settlement via the action **Add Comments** or automatically depending on how the transaction and settlement flows have been set up (see the *TRM System Administration Guide* for information on how to set up transaction and entity flows).

For information on how to manually generate transaction comments, see *8.4.7.7 Generating transaction comments* on page 294.

For information on how to manually generate settlement comments, see *18.3.4.3 Generating settlement comments* on page 515.

## 3.23 Bank Account Type Editor (optional)

---

**Important:** Bank account types are optional for TRM and mandatory for CMM.

---

Bank account types are created in the Bank Account Editor.

Bank account types can be added to a bank account (in the Client Editor, **Accounts** page) to define either a bank account's status (for example, Current, Closed, and so on) or function (General, Internal, Disbursement, and so on).

To create a bank account type:

1. In the Bank Account Type Editor, enter a unique **ID** and **Name** for the bank account type.
2. Save the bank account type using **File-Save As New**.

## 3.24 Branch codes (optional)

Branch codes provide a way of grouping entities in monitors and reports. There are 20 possible branch codes, numbered 0-19. You can give each branch code a name, and a set of branches or values.

For example, if you want a way to group instruments by geographical region, you can define **Branch Code 0** as Geographical, and add the names of countries to it to represent the branches. You can then assign the branch code (in this case, Geographical) and branch (the name of a country) to the instrument in the **Branch Code** page of Instrument Editor.

Branch codes are defined in Branch Code Editor.

---

**Note:** To be able to assign branch codes to an instrument, you must first add the **Branch-Code** feature in the instrument definition: see the guide *TRM Instruments: Processing and Calculations*.

---

To create a branch code:

1. From the list of branch codes on the left side of the editor, select the system-defined number of the branch code you want to set up. This is displayed in the **Number** field in the upper part of the editor (for information only).

If you are creating a branch code to use in an accounting rule, you can only use Branch Code 0.

2. Enter the name for the branch code in the **Name** field (for example, Geographical Region).
3. In the **Values** page, define each branch that you want to assign to the branch code.

Information	Description
ID & Name	ID and name for the value: for example, if you are creating a Geographical branch code, enter an ID and name of a region or country.
Order Number	The order in which you want the branches (for example, the geographical regions) to appear in a <b>Branch Code</b> selection list (for example, 1 for first in the list).

4. Save the whole branch code definition using **File - Save As New**.

## 3.25 Calendar groups (optional)

When dealing certain instruments it is necessary to take more than one calendar into account (for example, for cross-currency IR swaps, a calendar is required for each currency). This can be achieved in TRM by creating a calendar group, that is, a set of calendars.

A calendar group assembles the non-business days of the individual calendars contained within the group. TRM will then refer to all the calendars in the group when calculating values, such as payment due dates, and adjust the values accordingly.

Furthermore, applying a calendar group instead of an individual calendar to a currency can be useful when geographical issues arise, for example, when more than one country uses the same currency, such as the Euro, or when there are regional public holidays within one country, for example, in the USA.

Calendar group entities are created in Calendar Group Editor.

To create a calendar group:

1. Enter a unique ID and name for the calendar group. Note that a calendar group cannot be created with the same ID as a calendar (see 3.6 *Calendars* on page 59).
2. Select the **Default Holidays** for the calendar group which correspond to the calendar group's weekly non-working days.
3. In the **Calendar** field, select and add the first calendar you want to add to the group.  
The selection list contains all the calendars you created in Calendar Editor.
4. Repeat the procedure to add the other calendars to the group in the same way.
5. Save the whole calendar group using **File - Save As New**.

### 3.25.1 Generating reports on calendar groups

You can run the Holidays for Period report to view all holidays defined for a calendar group during a specific period.

See B.27 *Holidays for Period Report* on page 669 for details of the report's parameters.

## 3.26 Cashflow charges (optional)

Cashflow charges are charges that are associated with the cashflows of a transaction. A cashflow charge can be a fixed amount or it can be calculated from the cashflow amount. A cashflow charge is usually settled on the value date of the cashflow. An example of a cashflow charge is the taxes that are withheld at each coupon payment.

Cashflow charges can be applied automatically if a cashflow charge rule is assigned to the instrument using the **Cashflow Charges** feature: see the guide *TRM Instruments: Processing and Calculations* for more information.

A cashflow charge rule includes how the charge is calculated and may provide details of payment instructions for the charge. It also includes a standard rule (defined in Rule Editor) which is used to identify the transactions (and possibly even cashflows) to which the charge applies. As with standard rules, you can create several charge rules that share the same name. This means that you can cover several cashflow charge conditions within the same rule. Cashflow charge rules are defined in Cashflow Charges Editor.

Charges can be applied manually to cashflows in Transaction Manager if the **Manual Charges** feature is applied to the instrument at instrument level: see *8.2.1.7 Adding charges and fees* on page 268.

---

**Note:** You should not manually edit rule-based cashflow charges. Rule-based cashflow charges are regenerated if the transaction is modified at a later date (i.e. if a parameter value is added) and any manual changes may be overwritten.

---

To set up a cashflow charge rule:

1. In Cashflow Charges Editor, define the main attributes of the rule.

Information	Description
ID	ID for this cashflow charge.
Domain	Domain in which this cashflow charge applies.
Rule Not Rule	Rule that defines to which type of transaction this charge applies ( <b>Rule</b> ), and rule that defines to which type it does not apply ( <b>Not Rule</b> ).
Cashflow Main Type	Main type of cashflow to which this charge applies. This is a mandatory field.
Cashflow Type	Type of cashflow (optional). If you do not specify a cashflow type, then this charge will apply to all cashflows of the same <b>Cashflow Main Type</b> which meet the rule criteria. For example, if <b>Cashflow Main Type</b> = <i>Interest</i> , and <b>Cashflow Type</b> is not defined, the cashflow charge will apply to all interest flows which meet the rule criteria. Alternatively, if <b>Cashflow Main Type</b> = <i>Interest</i> , and <b>Cashflow Type</b> = <i>Coupon</i> , the cashflow charge will only apply to any coupon cashflows which meet the rule criteria.
Minimum Figure Value Maximum Figure Value	The maximum and minimum cashflow amount between which a cashflow charge is matched.
Active From Active To	Start and end dates for the period when the charge is active. The charge is only applied to cashflows where the <b>Active From</b> date is earlier than the cashflow's value date. If the <b>Active To</b> field is left blank: this charge is assumed to be valid indefinitely.

2. Specify the cashflow charge payment details.

Information	Description
Date Type	Date type (for example, Payment Date, Fixing Date, or Value Date) of the cashflow used to calculate the payment date of the charge.
Date Offset	Number of business days that are added to the date type selected. This is used to calculate the payment date of the charge. If you specify a date offset, you should also specify a calendar (in the following field).
Calendar	Calendar or calendar group that is used to calculate the payment date of the charge. You only need to specify a calendar if you specified a date offset.
Charge Type	Type of cashflow charge. You can select from a list of charges that have been created in Cashflow Type Editor: see 3.28 <i>Cashflow types (optional)</i> on page 139.
Currency	Currency of the charge if this is different from the currency of the cashflow.
Our Bank Our Account	Your organization's bank ( <b>Our Bank</b> ) and that bank's account ( <b>Our Account</b> ) that is used to pay or receive the fee, if you do not want the account rules defined in Client Editor to select the bank (or bank account) for you. If you leave either of these fields empty, the local bank (or bank account) is selected according to the account rules in Client Editor's <b>Settlement Instructions</b> page.



Information	Description
Counterparty Counterparty Bank Counterparty Account	Same principle as for <b>Our Bank</b> , and <b>Our Account</b> : all of these fields are optional, and give you the means of overriding the counterparty, bank of the counterparty, or account of the counterparty, that are automatically selected for you by the account rules in Client Editor's <b>Settlement Instructions</b> page.

3. In the **Calculation Type** field, specify how the amount of the cashflow charge is calculated.

Type	Description
Amount	The fixed amount of the charge.
Amount Per Unit	The amount of the charge per one unit.
Percent	If the cashflow charge is a percentage of the cashflow, enter the percentage of the charge.  The maximum number of decimal places which will be taken into account before rounding is 12.
Percent Per Annum	Percentage per annum of the cashflow specified. The charge amount depends on the period between the <b>From When</b> and <b>Until When</b> dates of the cashflow.

4. Enter any further information about the cashflow charge.

Information	Description
Value	Value to be used by the <b>Calculation Type</b> field.  For example, if <b>Calculation Type</b> = <b>Percent</b> , and <b>Value</b> = 5, then the value is interpreted as 5%.
Expression	The perl expression that is used to calculate the amount of the cashflow charge.  In the expression, <code>\$figure_value</code> is the cashflow amount; <code>\$maturity</code> is the number of days between the contract maturity and the transaction value date; and <code>\$cf_maturity</code> is the number of days between the contract maturity and the cashflow value date.  You can access the transaction columns using the syntax: <code>\$transaction-&gt;{"deal_rate"}</code> and cashflow columns can be accessed using the syntax: <code>\$cashflow-&gt;{"fixing_price"}</code>
Minimum Charge Amount Maximum Charge Amount	The minimum or maximum amount that can be charged.
Amount Rounding Rounding Method	Choices are: <b>Down</b> , <b>Nearest</b> or <b>Up</b> . The amount is rounded up, down, or to the nearest figure as calculated using the specified Amount Rounding value. <ul style="list-style-type: none"> <li>• If rounding settings are defined, then these settings are used.</li> <li>• If no rounding settings are defined, then the rounding specified at the currency level is used.</li> </ul>

5. Save the cashflow charge rule definition using **File - Save As New**.

## 3.27 Cashflow groups (optional)

Cashflows can be grouped together to be used for reporting or analysis purposes in Report Generator and Treasury Monitor, respectively.

For example, by specifying a cashflow group when monitoring portfolios in Treasury Monitor, a global amount can be broken down into its different components (such as Principal, Fee, and Interest). These cashflows can then be broken down even further. Fees, for example, could be broken down into Issuer Fee and Tax.

Each type of cashflow needs to be defined individually in the main cashflow group, with a priority. The priority defines the order in which the rule matching is done.

Group rules are set up for the cashflow group to define how the cashflows are identified. You can define more than one rule within a group and specify different criteria that the cashflow should or should not meet. All criteria need to be matched in order to include the cashflow within the group.

When all excluding criteria is matched, the cashflow is excluded from the group. Inclusive or exclusive criteria can be used in the same rule. You can also set up a miscellaneous group rule for all other cashflows. This rule would have the lowest priority and be completely open.

Cashflow groups are defined in Cashflow Group Editor.

To define a cashflow group:

1. Define the main attributes of the cashflow group in the upper part of the editor.

Information	Description
ID & Name	Unique ID and name for the cashflow group.
Domain	Domain in which this cashflow group applies.
Switches	(Commercial loans only) Payment Reminder Grouping: switch on so that this cashflow group is used for grouping the cashflows in the Payment Reminder entities. Only one cashflow group can be used at a time for grouping cashflows. To use a different cashflow group, the switch must set to off for this cashflow group.

2. In the **Groups** page, define the main group using the information in the following table:

Information	Description
Group	ID of the main cashflow group.
Group Name	Name of the main cashflow group.
Priority	Number used to determine the priority if two or more cashflow groups meet the conditions for the selected rules.

3. In the **Group Rules** page, define the criteria that each cashflow should or should not meet to match the group rule, using the information in the following table:

Information	Description
Group	ID of the main group you created in the <b>Groups</b> page.
Group Name	(Information only) Name of the main group.
Main Type	Main type of cashflow, such as Principal or Fee/Tax.
Type	Cashflow type as defined in Cashflow Type Editor.
Attributes Attributes 2nd Kinds	Different attributes that the cashflow must have (or not have) to meet the rule criteria.

Information	Description
Sign	Sign that the cashflow must have to meet the rule criteria.

4. Save the cashflow group using **File - Save As New**.

## 3.28 Cashflow types (optional)

It is possible to create different types of cashflows in Cashflow Type Editor. These cashflow types can then be used to create charges (for example, fees or taxes).

Any charges you define can be applied to a transaction either automatically, using rules assigned at instrument level (see *3.26 Cashflow charges (optional)* on page 135 and *3.46 Transaction charges (optional)* on page 155), or they can be applied manually in Transaction Manager to a specific cashflow (see *8.2.1.7 Adding charges and fees* on page 268).

For certain instruments, it is also possible to specify whether a charge needs to be taken into account in yield/price calculations: see also *8.2.1.7.1 Transaction charges and yield/price calculations* on page 269.

---

**Note:** To be able to attach cashflows to an instrument on the transaction level of Transaction Manager, you must first add the relevant feature to the instrument: see the guide *TRM Instruments: Processing and Calculations* for more information.

---

To create a cashflow type:

1. In Cashflow Type Editor, fill in the fields using the information in the following table:

Information	Description
Type	Unique name for the cashflow type you want to create.
Main Type	Main type of the cashflow type you are creating. Choose from: Principal, Interest, or Fee/Tax.

2. Activate the relevant switches to define how any cashflows of this type are treated in accounting or in price/yield calculations.

Switch	Description
Taxable	Enables you to define whether an interest cashflow is taxable.
All-In Price	The fee cashflow needs to be included in the All-in Price/Yield.
Re-Offer Price	The fee cashflow needs to be included in the Re-offer Price/Yield.

3. Save the cashflow type using **File - Save As New**.

## 3.29 Cash pools (optional)

In TRM, you can set up automatic leveling, namely the periodic movement of funds, often within a cash pool, to manage cash centrally. This functionality is closely related to zero balancing, which is a bank process where the bank adjusts at the end of each period (day, week, month) an account's balance to zero by transferring funds to or from another designated account.

Accounts involved in a cash pool are organized into a hierarchy of master accounts and sub-accounts. These master and sub-account relationships within a cash pool, together with various other attributes of the cash pool are defined in Cash Pool Editor.

See *18.1.3 Managing cash pool leveling* on page 502 for more information.

To define the properties of a cash pool:

1. In Cash Pool Editor, enter the main attributes of the master and sub-accounts relationship in the upper part of the editor.

Information	Description
ID & Name	Unique ID and name of the master and sub-account relationship.
Cash Pool	Cash pool to which the master and sub-account relationship belongs. Note: Cash pool IDs are set up for you at implementation, but can be changed.
Cash Pool Type	Cash pool type (Leveling).
Account	Account number of the master account. After the account has been selected, the fields <b>Bank</b> , <b>Currency</b> and <b>Owner</b> will automatically become available. Only accounts that belong to the cash pool selected in the <b>Cash Pool</b> field are in the selection list and are allowed in this field.
Cut Off Days	Number to determine which cashflows the treasury needs to consider, in addition to today's balance, when making payments out of the accounts in this cash pool. The resulting balance (today's balance plus any cashflows included or excluded by the number of cut-off days you select) is called the estimated balance: <ul style="list-style-type: none"> <li>• Enter -1 to use today's opening balance only when sweeping the cash pool</li> <li>• Enter 0 to use today's opening balance plus today's cashflows</li> <li>• Enter 1 to use today's cashflows and the cashflows from the next business day.</li> </ul> Note that you can have today's cashflows from today plus any number of business days; for example, for the next two business days enter 2, and so on. The higher the number, the less practical the cash pooling becomes; two days is a sensible limit.
Domain	Domain in which this cash pool is available.

2. In the **Default Target** page, define the default target balance amounts for the sub-accounts in this cash pool; in other words, the data that is used for a sub-account if you do not give any target balance amounts for the sub-account itself (in the editor's **Sub-accounts** page).

Information	Description
Minimum Balance	Minimum balance that is allowed on the sub-accounts of this relationship. If the estimated balance of any of the sub-accounts is below this value, TRM sweeps a certain amount (determined by the currency, and the settings you give for <b>Target Balance</b> and <b>Denomination</b> ) from the master account to the specific sub-account.
Maximum Balance	Maximum balance that is allowed on the sub-accounts of this relationship. If the estimated balance of any of the sub-accounts is above this value, TRM sweeps a certain amount (determined by the currency, and the settings you give for <b>Target Balance</b> and <b>Denomination</b> ) from the master account to the specific sub-account.
Target Balance	Balance required on the sub-account. The amount that will be swept is the difference between the target balance and the estimated balance (allowing for any value entered in the <b>Denomination</b> field). The estimated balance is determined by the number of cut-off days.

Information	Description
Denomination	Basic unit of funds to be swept: for example, if you want the funds to be swept in multiples of 25,000, enter 25,000. If you want the exact amount to be swept, enter 0.

3. Save the whole cash pool definition using **File - Save As New**.
4. In Cash Pool Editor's **Sub Accounts** page, define the properties of the individual sub-accounts.

Information	Description
Account	Account number of the master account. After the account has been selected, the fields <b>Bank</b> , <b>Currency</b> , and <b>Owner</b> will automatically be displayed. Only accounts that belong to the cash pool selected in the field <b>Cash Pool</b> are in the selection list and are allowed in this field.

5. In the **Relation Type** field, specify the master and sub-account relationship, namely whether the master and sub-account are owned by the Treasury Center, an affiliate, or owned by an affiliate that is not a portfolio owner (meaning that the accounts are set up under the Treasury Center as memorandum accounts).

Relationship type	Master account is held by	Sub-account is held by
TC - TC or Affiliate - Affiliate	Treasury Center	Treasury Center
	Affiliate (portfolio-owner)	Affiliate (portfolio-owner)
TC - Affiliate or Affiliate - TC	Treasury Center	Affiliate (portfolio-owner)
	Affiliate (portfolio-owner)	Treasury Center
TC - TC(Affiliate)	Treasury Center	Affiliate (not a portfolio-owner).
TC(Affiliate) - TC	Affiliate (not a portfolio-owner)	Treasury Center
TC(Affiliate) - Affiliate	Affiliate (not a portfolio-owner)	Affiliate (portfolio-owner)
Affiliate - TC (Affiliate)	Affiliate (portfolio-owner)	Affiliate (not a portfolio-owner)
Identical TC(Affiliate) - TC(Affiliate)	Affiliate (not a portfolio-owner)	Same affiliate as master account
Different TC(Affiliate) - TC(Affiliate)	Affiliate (not a portfolio-owner)	Affiliate (not a portfolio-owner), but a different affiliate from the one holding the master account.

The remaining fields in this page (**Minimum Balance**, **Target Balance**, **Maximum Balance**, and **Denomination**) are the same as their equivalents in the **Default Target** page, except that they only apply to the individual sub-accounts.

6. Click **Add** to add the sub-account for the master account.
7. Repeat this procedure until you have added all the sub-accounts to the master account.
8. Save the whole cash pool definition using **File - Save**.

## 3.30 Country groups (optional)

Using country groups, you can create trading limits for a group of countries, rather than trading limits for individual countries. For example, a company in Europe decides that the limit for the country group South America is \$500 million. This means that traders can only trade to a total of \$500 million with all countries in the group South America.

Countries can belong to more than one group. For example, you can create geographical groups (such as continents), economy groups (such as stable or high inflation), so the same country could belong to two groups: one showing which continent it is in, and the other its economic stability or otherwise.

To create a country group:

1. Enter a unique ID and name for the country group in Country Group Editor.
2. Save the country group definition using **File - Save As New**.

## 3.31 Credit ratings (optional)

You can create credit ratings, and assign those ratings to clients. A client's credit rating serves as another risk parameter, since a transaction with a low-risk client obviously carries less risk than exactly the same transaction with a high-risk client: the higher the credit rating, the lower the risk.

You use credit ratings in limits. For an explanation of limits: see *Chapter 16 Managing limits* on page 447.

To create a client rating:

1. In Credit Rating Editor, enter the main attributes of the credit rating in the upper part of the editor.

Information	Description
ID & Name	Unique ID and name for the credit rating agency: for example, ID = MOODY'S and Name = Moody's; or ID = S&P and Name = Standard and Poor's.
Domain	Domain in which this credit rating applies.

2. In the **Rating Codes** page, enter and add each rating code and corresponding rating level which applies to the agency.

The rating level identifies how much risk is carried by the code: the lower the level, the less risk is involved. For example, a level 1 credit code of AAA carries less risk than a level 7 rating code of A-.

3. Save the credit rating definition using **File - Save As New**.

## 3.32 Currency classes (optional)

Currency classes allow you to aggregate currencies (in Treasury Monitor and certain kinds of reports) as if they were one currency (for example, as was the case with EMU currencies before the introduction of the Euro). The way that you do this is by selecting Currency Class as the grouping criterion.

You can also use Currency Class as a display-grouping criterion for other sets of currencies: for example USD and CAD, or Gulf currencies.

You can create currency classes containing any currencies you like, but the same currency cannot belong to more than one currency class.

To create a currency class:

1. Enter the main attributes of the currency class in Currency Class Editor.

Information	Description
ID & Name	Unique ID and name for the currency class.
Currency	Currency in which currencies belonging to this class are expressed (for some key-figures).  For example, if a currency belongs to a currency class for which Currency = EUR, then for the key-figures; Figure Class Equivalent Amount, Figure Class Equivalent Amount (cum), and Figure Class Equivalent Spot Value, any transactions denominated in that currency will be expressed in EUR.  This is a mandatory field.
No FX Exposure	No FX exposure between the currencies in the class to be calculated: some currencies, for example, can be considered to have no FX exposure between each other, because each one of them has a fixed value against another currency, and therefore against each other.
Net Exposure	Nets the exposure of all the currencies within the currency class.  Normally (switch off), any currency movement is regarded as creating exposure against your own currency. But this does not apply for currencies with no exposure between themselves.

2. Save the currency class using **File - Save As New**.

### 3.33 Ladder sets (optional)

A ladder set is a set of interest rates (ladders) that can be applied to a transaction; the interest rate used then depends on the amount. In this way you can automatically apply different interest rates if the amount changes.

Ladder sets are typically used in call transactions, or for calculating interest on bank account balances.

Ladder sets are defined in Ladder Set Editor.

To define a ladder set:

1. Define the main attributes of the ladder set in the upper part of the editor.

Information	Description
ID & Name	Unique ID and name for this ladder set.
Domain	Domain in which this ladder set applies.
Active Date	The date when the new ladder definitions should replace the old ladder definitions. See the description of the <b>Duplicate All</b> button below.

2. In the **Ladders** page, enter the attributes for each ladder using the information in the following table:

Information	Description
Description	Descriptive name for the individual ladder rate.

Information	Description
Lower Boundary Upper Boundary	The ladder rate applies to balances that are lower than the upper boundary and greater than the lower boundary.
Currency	Ladder set currency. Note that you can add multiple currencies to a ladder set. The ladder set can then be used to calculate the interest for multi-currency bank accounts.
Rate	Ladder rate. This rate will be added to the rate derived from the yield curve. By default, this is an absolute value. For example, if you enter 0.25 in this field, then 0.25 percentage points will be added to the yield curve rate (if the yield curve rate is 5%, the total rate will be 5.25%). If you want to use relative rates, turn on the <b>Relative Rate</b> switch in the <b>Switches</b> page.
IR Reference	The ladder set yield curve.
Period	The period to be applied.
Scenario	The pricing scenario for the ladder set.
Active Since Active Until	The period within which this ladder rate and set are active (used in calculations). Leave these fields blank if you want the rate to apply indefinitely.
Duplicate All	Click <b>Duplicate All</b> to set the <b>Active Until</b> date of all active ladders to the <b>Active Date</b> - 1 and to create a duplicate set of ladders with the <b>Active Since</b> date equal to the <b>Active Date</b> . This is a simple way to manage time-dependent ladders.

3. Click **Add** to add the ladder to the ladder set.
4. Repeat the procedure to add further ladders to the ladder set.
5. If necessary, modify the switch settings in the **Switches** page using the information in the following table:

Switch	Description
Absolute Boundary Amounts	Switch on so that the <b>Lower Boundary</b> and <b>Upper Boundary</b> values apply to both positive and negative balances. For example, if this switch is on for boundaries defined as 1M to 5M, this ladder rate will also apply to balances from -1M to -5M.
Apply Rates per Ladder	Switch on so that rates of the ladder set are applied cumulatively rather than absolutely.
Exclude Lower Boundary Exclude Upper Boundary	Switch on to exclude boundary values when checking the balance range. For example, if you have two ladders defined as 0 to 1M, and 1M to 5M, and you turn on <b>Exclude Upper Boundary</b> then a balance of 1M will only belong to the second ladder.
Fund Fee	Switch on to create a Fund Fee ladder set.
Relative Rate	Switch on so that the ladder rate is treated as a relative figure (and not an absolute figure). For example, if you enter 5 in the <b>Rate</b> field, this means that the total rate will be 5% higher than the yield curve rate; if the yield curve rate is 4%, the total rate will then be 4.2%.
Floor Rate to 0	Switch on to specify that the final ladder rate should never be negative.

6. Save the whole ladder set using **File - Save As New**.



## 3.34 Ladder rules (optional)

Ladder rules determine which set of interest rates (ladder set) to use in specific circumstances. For example, if you want to use different interest rates for different currencies, you specify in the ladder rule which ladder set to use with which currency.

Ladder rules are defined in Ladder Rule Editor.

To define a ladder rule:

1. In Ladder Rule Editor, define the main attributes for the ladder rule in the upper part of the editor.

Information	Description
ID & Name	Unique ID and name for this ladder rule.
Domain	Domain in which this ladder rule applies.

2. In the **Ladder Rule** page, fill in the fields using the information in the following table:

Information	Description
Ladder Set	ID for the ladder set (defined in Ladder Set Editor).
Description	Description of the ladder set.
Rule Not Rule	Rule that determines when the ladder set will be used or the rule that determines when the ladder set will not be used. Rules are defined in Rule Editor.
Order Number	This number is used to determine which ladder set has priority if there are two or more ladder sets that meet the conditions for the selected rules.

3. Click **Add**.
4. Save the whole ladder rule using **File - Save As New**.

## 3.35 Option schedule templates (optional)

In TRM, an option schedule drives the creation of the exotic structure of an FX option or any instrument belonging to the FX Option/Exotic instrument class.

Option schedules contain a number of values that determine how the cashflows of these instruments are generated. They can be assigned to the instrument in Instrument Editor or at deal entry in Transaction Manager.

As well as creating simple option templates, you can also create complex user templates by combining multiple system templates together in one user-defined template. This allows you to build composite template structures like double barriers, in and out barriers (corridors), with or without rebates, bermuda barrier options and so on.

Please note that it is also possible to create these complex structure by combining several simple templates at deal entry: It is possible to add a s many templates as you want to a deal...

TRM is delivered with a set of system-defined templates. However, it is also possible for users to define their own templates but with some constraints:

- User-defined templates must be derived from a system template
- The default setup for system-defined templates cannot be changed when the user templates are created.

Option schedules are defined in Option Schedule Template Editor.

### 3.35.1 Defining simple option schedules

To define an option schedule:

1. In Option Schedule Template Editor, select the system template on which you want to base your own option schedule from the left part of the editor.
2. Define the main attributes of the option schedule template in the upper part of the editor.

Information	Description
ID & Name	Unique ID and name for the option schedule.
User/System	(Information only) Shows if the template is system-defined or user-defined.
Domain	Domain in which this option schedule is available.

3. In the **Option Schedule Templates Item** page, define the parameters for the option schedule.  
The information that can be defined in an option schedule is explained in the guide *TRM Instruments: Processing and Calculations*.
4. In the **Groups** page, select and add the option schedule template group or groups that you want this option schedule template to belong to: see *3.36 Option schedule template groups (optional)* on page 146.
5. Save the whole option schedule template using **File - Save As New**.

### 3.35.2 Defining complex option schedules

To define complex option schedules:

1. In Option Schedule Template Editor, select the system template on which you want to base your own option schedule from the left part of the editor.
2. Rename the ID and name of the selected system template and save the new user-defined template using **File - Save As New**.
3. In the **Option Schedule Templates Item** page, click **Add Template** to merge the structure of another template with your existing template.
4. In the resulting dialog, select the template you want to merge and click **OK**. The new template is added to the item list.
5. Save the whole option schedule template.

## 3.36 Option schedule template groups (optional)

Option schedule templates can be organized into groups according to their category or function in Option Schedule Template Group Editor.

There are two main advantages to grouping option schedules: option schedule groups can be used to restrict availability of the templates, and also can be used to make the template list easier to navigate.

Any option schedules that have not been organized into a group are placed into an unclassified group.

To define an option schedule template group:

1. In Option Schedule Template Group Editor, define the main attributes of the option schedule template group in the upper part of the editor.

Information	Description
ID & Name	Unique ID and name for the option schedule group.
Instrument setup only	Switch on so that this option schedule group is only available during instrument setup. This ensures that the group (and therefore the schedules within the group), are not available for selection at transaction level.

2. In the **Option Schedule Templates** page, select and add each option schedule you want to add to the group from the ID field.
3. Save the whole option schedule group using **File - Save As New**.

## 3.37 Package types (optional)

It is possible to group transactions, which would otherwise have no attributes in common, into a package. A package could include, for example, transactions that hedge each other, or transactions forming option or arbitrage strategies (such as covered call, bull spread, or butterfly).

Packaging allows you to analyze the grouped transactions for position monitoring in Treasury Monitor, or for reporting purposes.

To group transactions into a package, you first need to create a package main type with one or more package types. Packages are basically containers into which you add whichever transactions you want. A transaction can belong to one or several packages as long as the packages have different package main types.

You add a transaction to a package type within Transaction Manager. See *8.4.7.2 Packaging transactions* on page 290 for more information.

To create a package main type with one or more package types:

1. In Package Type Editor, enter a unique ID and name for the package main type.
2. In the **Domain** field, specify the domain in which this package main type is available.
3. Define the attributes of the package main type:

Information	Description
System	System main types are manipulated by programs (such as activities and services) and cannot be changed through a user interface.
Hidden	Hidden main types are not visible in Transaction Manager.
Selling	Selling defines the package main type to be used by the Selling activity (only one selling main type can be defined).
Non Cancellable	Transactions in a non-cancellable package cannot be cancelled. In order to cancel such a transaction you need to remove it from the package.

4. In the **Package Type** page, enter a unique ID and name for the package type.
5. Click on **Add** to add the package type. You can add as many package types as you wish.
6. Save the package main type using **File - Save As New**.

## 3.38 Parameters (optional)

When someone enters a deal in Transaction Manager, or a stand-alone payment in Settlement Processing, they can specify the currency, the portfolio, and a variety of other fixed parameters.

To meet any extra transaction specification needs your organization may have, you can define your own custom parameters for transactions (Type = Transaction, Number = 0-19), for payments (Type = Payment, Number = 0-9), for guarantees (Type = Guarantee, Number = 0-9), and for collateral (Type = Collateral, Number = 0-9).

Each parameter can contain a set of your own custom values. You can use these parameters in rule definitions for selecting transactions, or as grouping criteria in reports and monitors.

Parameters are defined in Parameter Editor.

To define a parameter with its associated values:

1. From the list of parameters on the left side of the editor, select the number/type of the parameter you want to define.
2. In the **Name** field, give a new name to the parameter.

---

**Note:** You can only rename a parameter, not create a new one.

---

3. In the **Parameter** page, enter the values that you want to assign to this parameter.

Information	Description
Value	Name that you want each value to have throughout TRM: for example, in selection lists, report columns, and so on.
Description	Description of the purpose of this individual parameter.
Order Number	Order in which you want the value to appear in selection lists for this parameter.

4. Click **Add** to add the value to the parameter definition.
5. Save the entire parameter definition, using **File - Save As New**.

## 3.39 Properties (optional)

TRM should normally provide all the data possibilities you need to define clients, instruments, and portfolios. If it does not, you can create extra values for almost any type of information (for example, a boolean value, date, integer, or character string).

These extra values are called properties and you create them in Property Editor. Any properties that you create are added to the standard list of properties that appears in the **Properties** page of the respective editor.

In Property Editor, you can also define extra parameters for a specific activity. You can make these parameters invisible to the person using the activity, or make them appear as optional or mandatory fields.

You can choose from two different categories of value types when you define the values for a property.

- The first group consists of all the values ending with ID (for example Client ID, Portfolio ID, and so on). These all serve the same basic purpose: they are for properties where you select the relevant entity. For example, if you select Client ID, you will produce a property where the user applying that property has to select a client ID.

- The second group of value types consists of the following standard types: Boolean, Date, Date Time, Integer, Money, Number, and String. For all of these value types, the possible values are either Yes or No.

---

**Note:** New properties require underlying programming within TRM.

---

### 3.39.1 Creating properties

To create an extra property:

- In the upper part of Property Editor, define the main attributes of the property using the information in the following table:

Information	Description
Object	The object to which the property applies, such as UMI (for an instrument) or activity. Note: To add a property to a payment advice, you need to use the <b>Settlement Property</b> object.
Key Key 2 Key 3	(Activity properties only) ID of the activity to which the property applies.
Type Name	ID and name that you want to give to the property. These appear in the Property selection lists of the relevant editor's <b>Properties</b> page. For properties belonging to an activity, the name also appears as the field label. Because you can use the same property in more than one editor, the ID does not have to be unique to this one property.
Value Type	Type of value to be input for the property, such as Portfolio ID.
Order Number	Number determining the order in which the properties appear (1 for first property listed, 2 for the second property listed, and so on): <ul style="list-style-type: none"> <li>For activities, this is the order in which the fields are displayed in the <b>Parameters</b> page.</li> <li>For clients, instruments and portfolios, this is the order in which the properties appear in the selection list for the relevant editor's Properties field.</li> </ul>

- Save the property definition using **File - Save As New**.
- In the **Switches** page, set the attributes you need for the whole property using the information in the following table:

Switch	Description
Default	If no property is selected, then this is the default.
Hidden	Property cannot be viewed. The property is not displayed in the property selection list, but if you type the name of the property, the property is available.
Mandatory	Property is a mandatory field for the entity or activity. Mandatory fields are shown in red, and anyone using the activity or setting up the entity will not be able to save the activity or entity until they have supplied a value for this field.
Must Match	Property must exactly match one of the values specified in the <b>Values</b> page.
Selectable	<b>Property</b> field (as it appears in the activity or editor) will contain a selection list containing all the values created for the property.
Unique	Switch on to prevent two or more activities or editors from having the same value for this property.

4. Save the whole property definition using **File - Save**.
5. Complete the property definition using the information in the following section.

### 3.39.1.1 Defining property values

Once you have defined the main attributes for a property, you then need to set the various values that the property is allowed to take.

For example, if you have defined value type String for the property, then you can specify the character strings to be accepted as input, and how they are interpreted by TRM.

Note that the value type of the property defined here may be different from the value type defined for the property itself.

To define the property values:

1. In the **Property Item** page, specify the property values using the information in the following table:

Information	Description
Value Type	Type of value that can be selected for this property. The value type you select here can differ from the one you selected in the upper part of the editor.
String Value	Value ID that will be shown in the selection list in the <b>Value</b> field of the <b>Properties</b> page of the relevant editor or in the parameter field of the activity.
Name	Name of the value that can be entered. The name appears next to the Value ID in the property value selection list, or as the field label for the activity
Order Number	Number determining the order in which the values will appear (1 for the value you want to be shown first, 2 for the second value, and so on): <ul style="list-style-type: none"> <li>• For activities, this is the order in which the fields are displayed in the <b>Parameters</b> page.</li> <li>• For clients, instruments and portfolios, this is the order in which the properties appear in the selection list for the relevant editor's <b>Properties</b> field.</li> </ul>
Integer Value	If the value type is Integer, enter the integer value here.
Number Value	If the value type is Number, enter the number value here.
Money Value	If the value type is Money, enter the amount here.
Date Value	If the value type is Date, enter the date here.

2. Click **Add** to add this value definition.
3. Repeat the procedure to add any further value definitions that you need for this property.
4. Save the whole property definition using **File - Save**.

## 3.40 Schedule templates (optional)

In TRM, a schedule drives the generation of a set of cashflows of the same type (for example, interest flows).

Schedules are directly used to generate the cashflows for instruments belonging to the following instrument classes: Asset Backed Securities, Bonds, Caps, Floors, and Collars, Generic Loans, and Commercial Loans.

Schedules are also indirectly used for structured products which comprise the above-mentioned instrument classes, namely: Swaps, Total Return Swaps, and Swaptions.

Schedules contain a number of values that determine how the cashflows of these instruments are generated. They can be assigned to the instrument in Instrument Editor or at deal entry in Transaction Manager.

TRM is delivered with a set of system-defined templates. However, it is also possible for users to define their own templates but with some constraints:

- User-defined templates must be derived from a system template
- The default setup for system-defined templates cannot be changed when the user templates are created.

Schedules are defined in Schedule Template Editor.

To define a schedule:

1. In Schedule Template Editor, select the system template on which you want to base your own schedule from the left part of the editor.
2. Enter the ID and Name for the new schedule. Note that both must be unique.

Information	Description
ID	Unique ID for the schedule.
Name	Unique Name for the schedule.
User/System	(Information only) Shows if the template is system-defined or user-defined.
Primary/Secondary	(Information only) Shows if the template is a primary or secondary template.

3. Click **File - Save As New**, then click **Yes** to confirm.
4. In the **Schedule Template Item** page, click **New...** to define a new schedule item. In the displayed dialog, select the relevant parameters and click **OK**.

These parameters are explained in the guide *TRM Instruments: Processing and Calculations*.

---

**Note:** To view the parameters of the selected schedule item, right-click anywhere in the **List** field and select **Select Columns...** You can select the information that you frequently use so that it is always visible.

---

5. In the **Groups** page, select and add the schedule template group or groups that you want this schedule template to belong to: see *3.41 Schedule template groups (optional)* on page 151.
6. Save the whole schedule template using **File - Save As New**.

## 3.41 Schedule template groups (optional)

Schedule templates can be organized into groups according to their category or function in Schedule Template Group Editor.

There are two main advantages to grouping schedules: schedule groups can be used to restrict availability of the templates, and also can be used to make the template list easier to navigate.

Any schedules that have not been organized into a group are placed into an unclassified group.

To define a schedule template group:

1. Define the main attributes of the schedule template group in the upper part of the editor.

Information	Description
ID & Name	Unique ID and name for the schedule group.
Instrument setup only	Switch on so that this schedule group is only available during instrument setup. This ensures that the group (and therefore the schedules within the group), are not available for selection at transaction level.

2. In the **Schedule Templates** page, select and add each schedule you want to add to the group from the **ID** field.
3. Save the whole schedule group using **File - Save As New**.

## 3.42 Security Basket Editor (optional)

The Security Basket Editor allows you to group securities in a security basket. You can then use this basket instead of single securities in TRM, for example, for benchmarks.

Each basket is associated to security criteria. The criteria serves as an **IF** condition and the security basket as the **THEN** part. You can set the basket so that you include or exclude securities from the basket, similar to TRM rules (rule and not rule).

You must first set up the security criteria in Security Criteria Set Editor, see *3.43 Security Criteria Set Editor (optional)* on page 153.

To define security baskets:

1. In Security Basket Editor, click **New** to create a new security basket.
2. Enter the main attributes of the security basket in the upper part of the editor:

Information	Description
ID Name	Enter a meaningful identifier and name for the security basket.
Domain	Domain in which this basket applies.
Usage	Select the purpose of this security basket. Choices are: <ul style="list-style-type: none"> <li>• Benchmark: Select if you are setting up a security basket to be used for benchmarking.</li> <li>• Collateral Eligibility and Collateral Haircut: used for Repos.</li> </ul> Note: Use <b>All</b> or <b>None</b> to respectively select all of the choices or to clear the selection.

3. In the **Criteria Sets** page, select the remaining attributes to use with this basket:

Information	Description
Security Criteria Set	Select the security criteria set (previously defined in the Security Criteria Set Editor) you want to use with this basket.

4. If you want to use this criteria to exclude securities from the basket, switch on the **Not Criteria** switch. All securities that do not match the criteria are included in the basket.
5. Click **Add** to add the basket definition.
6. Repeat this procedure until you have added all criteria to the security basket.



7. Save the basket.

### 3.43 Security Criteria Set Editor (optional)

The Security Criteria Set Editor allows selecting several criteria, which can be used to include or exclude a set of securities.

To define security criteria:

1. In Security Criteria Set Editor, click **New** to create a new security criteria set.
2. Enter the main attributes of the security basket in the upper part of the editor:

Information	Description
ID Name	Enter a meaningful identifier and name for the criteria set.
Domain	Domain in which this criteria set applies.

3. Select the main criteria you want to use to match securities:

**Note:** The more criteria you select, the more refined the result.

Information	Description
Instrument Group Instrument	Matching instrument group and instrument to which the criteria set applies.
Instrument Rating Instrument Rating Type (Code)	Matching rating and rating code to which the criteria set applies.
Gap Set	Matching gap set to which the criteria set applies.
Maturity Gap From/To	Matching maturity Gaps to which the criteria set applies.
Currency Class Currency	Matching currency class and currency to which the criteria set applies.
Issuer	Matching issuers (clients with the role: <code>Issuer</code> ) to which the criteria set applies.
Parent Issuer	Matching issuers (clients defined as parents) to which the criteria set applies.
Issuer Main Group Issuer Group	Matching issuer Main Groups and groups to which the criteria set applies.
Issuer Rating Issuer Rating Type (Code) Min/Max Issuer Rating Level	Matching issuer rating, rating code, and minimum and maximum level to which the criteria set applies.

4. Optionally, select branch codes as criteria:

Information	Description
Branch Codes	Matching branch codes to which the criteria set applies. There are 20 possible Branch Codes.

5. Save the criteria set.

## 3.44 Security identifier types (optional)

Security identifier types are systems used to uniquely identify financial instruments: for example, ISIN (International Securities Identification Number), CUSIP (Committee on Uniform Security Identification Procedures), or SEDOL (Stock Exchange Daily Official List). Security identifier types are defined in the Security Identifier Type Editor. When adding a security identifier to an instrument, you select the type to which the identifier belongs.

For example, a bond may have more than one security identifier, in which case, you can add each one (along with its type) to the bond instrument through the feature Security Identifier - **Security Identifiers** page. See the *TRM Instruments: Processing and Calculations* guide for more information.

---

**Note:** You can query transactions by their security identifier or security identifier type in Transaction Manager's **Query** view.

---

To define a security identifier type:

1. In Security Identifier Type Editor, click **New** to create a new identifier type.
2. Use the following table to define the security identifier type:

Information	Description
ID	Enter the ID of the security identification system, for example: Bloomberg identifiers (such as, BB TICKER, TICKER, BB_UNIQUE), ISIN, CUSIP, SEDOL, and so on.
Name	Enter a meaningful name, for example, International Securities Identification Number.

3. Save the new type using **File - Save As New**.
4. Repeat this procedure to define more identifier types.

## 3.45 Time zones (optional)

If your TRM users are located in different parts of the world, you need to define each time zone in Time Zone Editor.

You define the time zones as offsets compared to UTC (universal time coordinated, formerly known as Greenwich mean time or GMT).

---

**Note:** Your system administrator can define the (default) time zone for each user in User Administration Editor.

---

To define a time zone:

1. In Time Zone Editor, enter a unique ID and name for the time zone.
2. In the **Offset** page, define the first offset for the time zone using the information in the following table:

Information	Description
Active From	Select or enter the date and time from which this offset applies.  For each time zone, you should have one offset entry where the <b>Active From</b> date is empty. This entry applies to all dates in the history, before other entries.  For time zones where daylight saving time is used, two entries per year are needed: one for winter time and one for summer time. The time you enter is the time you are changing to.  For example, daylight saving time starts at 2am on 25 March 2001, when the clock is moved forward to 3am. So, enter here (depending on the date format you use) 03/25/01 03:00:00.
Offset	Enter the offset (in minutes) from UTC: for example, 120 for daylight saving time in CET.
Comment	Any comment that you want to add about this time zone offset.
Active From (UTC)	(Information only) The date/time of the offset in UTC.

3. Click **Add** to add this offset.
4. Repeat the procedure to add further offsets that apply to this time zone.
5. Save the whole time-zone definition using **File - Save As New**.

## 3.46 Transaction charges (optional)

Transaction charges are charges that relate to the transaction itself. A transaction charge can be a fixed amount or it can be calculated based on the book value, nominal amount or traded units. A transaction charge is usually settled on the value date of the transaction. Examples of transaction charges are broker fees and issue fees.

Transaction charges can be applied automatically if a transaction charge rule is assigned to the instrument using the **Transaction Charges** feature: see the guide *TRM Instruments: Processing and Calculations* for more information.

A transaction charge rule includes how the charge is calculated and may provide details of payment instructions for the charge. It also includes a standard rule (defined in Rule Editor) which is used to identify the transactions to which the charge applies. As with standard rules, you can create several charge rules that share the same name. This means that you can cover several transaction charge conditions within the same rule. Transaction charge rules are defined in Transaction Charges Editor.

Charges can be applied manually to transactions in Transaction Manager if the **Manual Charges** feature is applied to the instrument at instrument level: see *8.2.1.7 Adding charges and fees* on page 268.

---

**Note:** You should not manually edit rule-based transaction charges. Rule-based transaction charges are regenerated if the transaction is modified at a later date (i.e. if a parameter value is added) and any manual changes may be overwritten.

---

To set up a transaction charge rule:

1. In Transaction Charges Editor, define the main characteristics of the rule.

Information	Description
ID	ID for this transaction charge.
Domain	Domain in which this transaction charge applies.
Rule Not Rule	Rule that defines to which type of transaction this charge applies ( <b>Rule</b> ), and rule that defines to which type it does not apply ( <b>Not Rule</b> ).
Key-Figure	The key-figure based on the Figure Currency (either Nominal Amount, Nominal Amount 2nd, Book Value, or Units). If the charge rule is applied to a leg instrument, it applies to the leg-specific values. Note: Nominal Amount 2nd can be used if you need to define a rule to calculate charges as an annualized percentage of the nominal amount (and currency) of the second leg of a (cross-currency) swap.
Figure Currency	The key-figure specified in the <b>Key-Figure</b> field is converted to figure currency before it is compared to <b>Minimum Figure Value</b> and <b>Maximum Figure Value</b> , or used in the calculation of the charge. Transaction currency is used if no figure currency is specified.
Minimum Figure Value Maximum Figure Value	The maximum and minimum figure values between which a transaction charge is matched.
Maturity Gap Set	The gap set to be used.
Maturity Gap From Maturity Gap To	This transaction charge is only applied for transactions that reach maturity between these dates.
Active From Active To	Start and end dates for the period when the charge is active. The charge is only applied to transactions where the <b>Active From</b> date is earlier than the transaction's value date. If the <b>Active To</b> field is left blank: this charge is assumed to be valid indefinitely.

2. Specify the transaction charge payment details.

Information	Description
Date Type	Date type (for example, Opening Date, Value Date, Maturity Date) of the transaction used to calculate the payment date of the transaction charge.
Date Offset	Number of business days that are added to the date type selected. This is used to calculate the payment date of the charge. If you specify a date offset, you should also specify a calendar (in the following field).
Calendar	Calendar or calendar group that is used to calculate the payment date of the transaction charge. You only need to specify a calendar if you specified a date offset.
Cashflow Type	Type of transaction charge. You can select a charge from a list of the cashflow types that have been created in Cashflow Type Editor.
Currency	Currency of the charge if this is different from the transaction currency.
Our Bank Our Account	Your organization's bank ( <b>Our Bank</b> ) and that bank's account ( <b>Our Account</b> ) that is used to pay or receive the charge, if you do not want the account rules defined in Client Editor to select the bank (or bank account) for you. If you leave either of these fields empty, the local bank (or bank account) is selected according to the account rules in Client Editor's <b>Settlement Instructions</b> page.

Information	Description
Counterparty Counterparty Bank Counterparty Account	Same principle as for <b>Our Bank</b> , and <b>Our Account</b> : all of these fields are optional, and enable you to override the counterparty, bank of the counterparty, or account of the counterparty, that are automatically selected for you by the account rules in Client Editor's <b>Settlement Instructions</b> page.

**3.** Activate the switches that apply to this transaction charge.

Information	Description
All-In Price	Switch on when the charge cashflow needs to be included in the All-in Price/Yield.
Re-Offer Price	Switch on when the charge cashflow needs to be included in the Re-offer Price/Yield.
No Payment Netting	Switch on in order to have the charge cashflow settled separately.

See also *8.2.1.7.1 Transaction charges and yield/price calculations* on page 269.

**4.** In the **Calculation Type** field, specify how the amount of the transaction charge is calculated.

Type	Description
Amount	The amount of the transaction charge if the charge is not dependent on the size or the maturity of the transaction.
Amount Per Unit	The amount of the charge per one unit.
Percent	If the transaction charge is a percentage of the nominal amount of the transaction, enter the percentage of the charge. The maximum number of decimal places which will be taken into account before rounding is 12.
Percent Per Annum	Percentage per annum of the key-figure specified in the <b>Key-Figure</b> field. The charge amount depends on the maturity of the transaction.

**5.** Enter any further information about the transaction charge.

Information	Description
Value	Value to be used by the <b>Calculation Type</b> field. For example, if <b>Calculation Type</b> = Percent, and <b>Value</b> = 5, then the value is interpreted as 5%.
Expression	The perl expression that is used to calculate the amount of the transaction charge. In the expression, <code>\$figure_value</code> is the value of the key-figure specified in the <b>Key-Figure</b> field; <code>maturity</code> is the number of days between the contract maturity and value dates. For example: <code>\$figure_value * \$maturity / 365</code> (if the key-figure is Nominal Amount, the fee will be <code>Nominal Amount * (maturity date - value date) / 365</code> ). The transaction column is used to implement the transaction charge requirement and contains the whole transaction information. Note that a decimal point is used as a decimal separator in the expression whatever your system configuration for decimal points. For example, you can access each parameter using the syntax: <pre>\$transaction-&gt;{"deal_rate"} \$transaction-&gt;{"deal_price"} \$transaction-&gt;{"units"}</pre>

Information	Description
Minimum Charge Amount Maximum Charge Amount	The minimum or maximum amount that can be charged.
Amount Rounding Rounding Method	Choices are: <b>Down</b> , <b>Nearest</b> or <b>Up</b> . The amount is rounded up, down, or to the nearest figure as calculated using the specified Amount Rounding value. <ul style="list-style-type: none"> <li>• If rounding settings are defined, then these settings are used.</li> <li>• If no rounding settings are defined, then the rounding specified at the currency level is used.</li> </ul>

6. Save the transaction charge rule definition using **File - Save As New**.

## 3.47 Volatilities (optional)

You use IR Volatility Reference Editor to define volatility structures for instruments. TRM supports usage of the volatility surface by taking into account: the time to expiry, delta correction, and the underlying maturity, and linking them to real-time price sources (such as Reuters). You can view and edit the volatilities in Rate Monitor.

You can price Caps, Floors, and Collars by using a volatility structure with ATM volatility or skew (flat or forward), Swaptions with ATM straddle volatility or three dimensional structure, and Bond Options by using a three dimensional structure.

To set up a volatility structure:

1. In IR Volatility Reference Editor, enter the main attributes of the volatility structure in the upper part of the editor.

Information	Description
ID & Name	Unique identifier and name for the volatility structure.
Domain	The domain in which this volatility structure applies.
Currency	The currency in which the implied volatility of the basket of instruments of the volatility surface is defined.
Type	The type of volatility structure: Cap, Floor, Swaption, or Bond Option.
Gap Set	The gap set used to define the time to expiry period.
Underlying Gap Set	The gap set used to define the time to maturity periods of the Cap or the expiry tenor of the caplet depending on the surface type.
Yield Curve	The yield curve used to estimate the forward rate according to the frequency. If this field is empty, the yield curve of the volatility surface currency is used.
Rounding Precision	The number of decimal places to which the volatility structure is rounded in calculations.
Fixed Coupons Per Year	The number of coupons per year of the fixed leg of the underlying swaps. This is used for swaption volatility to calculate the ATM swap rate.
Floating Coupons Per Year	The number of coupons per year of the floating leg of the underlying swaps used to define the tenor of each Libor. This is used for swaptions and cap/floor volatilities to evaluate the fixing rate for Cap/Floor volatility, as well as the ATM swap rate for swaptions volatilities.

Information	Description
Date Basis	The date basis used to convert the time to expiry period calculated with the gap set, into time.
Underlying Date Basis	The date basis used to calculate Libor according to the frequency.
Underlying Volatility Reference	The underlying Cap/Floor surface used to derive the Caplet/Floorlet surface.
Caplet Stripper	The Calculation module used for the Valuation, either NumeriX or TRM.
Caplet Interpolation Type	Interpolation method used to define how the volatilities are interpolated.
Calendar	Calendar used to calculate the dates.
Spot Days	Number of business days until the spot date of the yield curve.
Logarithmic Period Scale	The default setting is time to expiry. Switch on to use the logarithm of the time to expiry in the interpolation.
Logarithmic Underlying Period Scale	The default setting is time to maturity. Switch on to use the logarithm of the time to maturity in the interpolation.
Skew	The default setting is to use the ATM volatilities. Switch on to use the skew volatility for Caps/Floors and Swaptions.
Forward	The default setting is to use the flat volatilities. Switch on to use the forward volatility for Caps/Floors.

2. In the **Volatility Strike** page, fill in the fields using the information in the following table:

Information	Description
Strike	The identifier used to define the strike value. <ul style="list-style-type: none"> <li>For Cap/Floor Volatilities, the Strike axis is defined by the delta. In this field, you select the identifier S0.x according to the delta (see also <b>Strike Value</b> below).</li> </ul> <p>Note: If you select ATM or STK, the remaining fields in this page are unavailable.</p>
Strike Value	The value of the strike. <ul style="list-style-type: none"> <li>For Cap/Floor Volatilities, enter the delta points that correspond to the <b>Strike</b> identifier (see above): for example, 0.015 for S01, 0.0175 for S02, 0.02 for S03, and so on.</li> </ul> <p>Note: For FX volatilities, when defining the RIC, you specify the identifier in Market Info Source Editor, and not the value of the strike: see <i>4.1 Defining real-time quotations</i> on page 161.</p>
Rate Type	The strike can be given either in absolute value, like in Cap volatility, or as delta in the case of FX volatility.
Variable Strike	Switch on in the case of time dependent strike, such as in Cap volatility.

3. Save the volatility structure using **File - Save As New**.

3 Managing static data  
3.47 Volatilities (optional)



The quotations you use in TRM can come from three sources:

- Live market feeds that you import from external market information sources such as Reuters.
- Files which TRM imports (from various possible sources, depending on your implementation).
- Rates that you manually enter in Rate Monitor.

If quotations come from a live market feed, position monitoring in Treasury Monitor can take place in real-time; TRM constantly checks the market feeds, and can therefore instantly recalculate the market value of each transaction.

Furthermore, it is possible to set up quotation and interest rate movement simulations for “what if?” measuring in Treasury Monitor.

In TRM, you can also trade any priced structure, including complex derivatives, using complex pricing models.

## 4.1 Defining real-time quotations

This section describes how to define real-time quotations (for example, quotations received from Reuters), and assign those quotations to whatever they apply to (for example, instruments, yield curves and so on). You can also define filtering rules to control how the rates are distributed in the system.

### 4.1.1 Defining the source market quotations

Quotations are defined in Market Info Source Editor. This editor layout is based on the application Static Data Editor (see 3.2 *Static Data Editor* on page 41 for more information).

To import real-time quotations:

1. In Market Info Source Editor, define the market quotation information using the information in the following table:

Information	Description
Type	<p>What the quotation applies to: for example, FX-Rate if this is a quotation for a currency exchange rate, or FX-Cross-Rate if this is a quotation for a currency pair, and so on.</p> <p>Note: Type <b>CHAIN (Interest Rate Futures Chain)</b> should only be used for MM Future Chains. For these instruments, periods and items are generated dynamically, so it is necessary to only specify the name of instrument in Market Info Source Editor and leave Period and Item fields empty.</p>
Name	<p>Equity, currency pair, index, IR instrument, chain instruments, or interest rate (yield curve) to which you want to assign this quotation.</p> <p>The selection list for this field remains empty until you have selected a value in the <b>Type</b> field.</p>

Information	Description
Period	<p>Period to which the quotation applies; for example, 3M for a three-month quotation, and so on.</p> <ul style="list-style-type: none"> <li>For equities and IR instruments, select <b>SPOT</b>.</li> <li>For chain instruments, you can leave this field empty.</li> <li>For CDS instruments, you can enter <b>RECOVERY</b> in this field.</li> </ul>
Source	<p>Market information source (provider) that is supplying the quotation: for example, Reuters.</p> <p>The actual market sources available to you depend on which ones you use, and your configuration of TRM.</p>
MI Group	<p>Name of the group to which you want this quotation to belong. You use quotation groups if you want to freeze quotations in batches rather than all at once. For more information, see <i>4.3 Freezing rates automatically</i> on page 166.</p> <p>If the group name does not already exist in the selection list, simply type the name into the field. When you save this quotation definition, the group name will be added to the selection list.</p>
Producer	<p>The provider of the quotations. For quotes with a Bloomberg source, you can state the producer from which the price should be obtained. The Data License Prices activity will then explicitly ask for this producer price. This however does not apply to historical prices.</p>
Item	<p>Code identifying the market quotation.</p> <p>For the actual codes, refer to the documentation supplied by the market information provider.</p> <p>Note: For chain instruments, you can leave this field empty.</p>
Bid Tag Ask Tag	<p>Fields in the market quotation that you want to use to supply the bid and ask quotations.</p> <p>Usually, you can leave these two fields blank: they are only necessary if you want to use fields from the market quotation other than the default bid and ask fields.</p>
Date Tag	<p>Field in the market quotation that you want to use to supply a date (for example, trade date or maturity date) in the quotations.</p> <p>In particular, this field is used to retrieve the quotations for OTC bonds.</p>
Underlying Period	<p>Underlying maturity of the instrument.</p>
Strike	<p>The strike corresponding to the quotation. For FX volatility surfaces, the available strike points are predefined in the system (from Put 5% to Call 5%). For IR volatility surfaces, the available strike points are defined in IR Volatility Reference Editor.</p>
Scenario	<p>Name of the scenario that is updated by the retrieved quotations.</p>
Subscenario	<p>Name of the subscenario that is updated by the retrieved quotations.</p>
Rate Type	<p>Price type for the quotation.</p>
Divider	<p>(Turkish market only)</p> <p>Number by which the incoming quotation has been divided: for example, if <b>Divider</b> = 1000, a quotation of 1000 TRL is interpreted by TRM as actually being 1,000,000 TRL.</p>

2. Turn on the switches you need using the information in the following table:

Switch	Description
Enabled	<p>Allows the quotation to be retrieved.</p> <p>Turn off this switch if you want to disable the quotation without deleting its definition.</p>
Delayed	<p>Prices from your market feed to be stored as of yesterday.</p>

Switch	Description
Ignore Zero Zero is Null	<p>These two switches work together, and must both be on for equities and equity derivatives:</p> <ul style="list-style-type: none"> <li>• <b>Ignore Zero</b> forces TRM to ignore all zeros in the quotation.</li> <li>• <b>Zero is Null</b> changes zeros to nulls (non-defined quotations) which are then ignored because of the <b>Ignore Zero</b> switch.</li> </ul> <p>You need to ignore zeros in equity quotations, because sometimes a quotation contains a zero as a delimiter saying "this is the end of the transmission": if this delimiter is read as an actual quotation value of zero, it distorts the valuation.</p> <p>Note: The only time these switches should not be on is for FX forward quotations, where the points can be 0.</p>
Variable Strike	<ul style="list-style-type: none"> <li>• If the switch is off, the strike is constant.</li> <li>• If the switch is on, the strike changes, as in the case of a Cap/Floor volatility.</li> </ul>

3. Save the quotation definition using **File - Save As New** (note that the market information source only takes effect when you save the entity).

The rates are now available in Rate Monitor, where you can view and (if necessary) adjust the quotation.

## 4.1.2 Defining filtering rules for real-time quotations

This section describes how to define filtering rules to control how the rates are distributed in the system. These rules are defined in the Market Info Filter Editor. Rules can be defined either in a general way (for example for all FX rates), or very specifically for one individual rate or source. Therefore, giving you a lot of flexibility in how you want to filter the rates. An advantage of correctly defined filtering rules is to ensure a better usage of system resources.

To define filtering rules for real-time quotations:

1. In Market Info Filter Editor, define the rules using the information in the following table:

Information	Description
Name	The name of the filtering rule.
Source	<p>Market information source that is supplying the quotation: for example, provider name (i.e. Reuters), CALCULATED or MANUAL).</p> <p>The actual market sources available to you depend on which ones you use, and your configuration of TRM.</p>
Type	The type of the filtered rate, for example, FX-RATE, IR-RATE, and so on.
Scenario	Name of the scenario of the filtered rate.
Subscenario	Name of the subscenario of the filtered rate.
Producer	The provider of the filtered rate.
Item	<p>Code identifying the market quotation.</p> <p>For the actual codes, refer to the documentation supplied by the market information provider.</p>
Period	Period of the filtered rate, for example, SPOT, 7Y, and so on.
Underlying Period	Underlying maturity of the filtered rate.
Strike	The strike of the filtered quotation.
Priority	The priority of the rule.

2. Then, use the following parameters to define how the rates are processed by the filtering rule:

Information	Description
Limit Throughput	Rates per minute. The default is 0, i.e. no filtering. Rates are sent according to this frequency per minute. This should help to limit the throughput of the most volatile rates, typically IR rates.
Maximum Period	Time in seconds. The default is 60 (e.g. when left empty). The time after which a new incoming rate will be sent regardless of the change percentage condition ( <b>Change Percent</b> field). That is, the rate is stored even when the previous value is smaller than the predefined minimum change percentage. The exact time that the rate is sent depends on the frequency of incoming rates. In the case where there are no new rates incoming, then the rates are sent in the longer period.
Change Percent	Rate is sent only if the change from its previous value is bigger than the predefined percentage. The default change percent is 0.01 (e.g. when left empty).

3. Save the filtering rule using **File - Save As New**.

The following example demonstrates the business filtering logic:

- If `Current Rate = Last Stored Rate`, then do not send the rate.
- If `(Current Time - Last Stored Time) < =1/Limit Throughput`, then do not send rate.
- If `(ABS(Current Rate - Last Stored Rate) / Last Stored Rate) > Change Percent`, then send rate.
- If `(Current Time - Last Stored Time) > Maximum period`, then send rate.

You can combine these conditions in one condition, for example:

```

If ((Current Rate != Last Stored Rate)
AND
(Current Time - Last Stored Time) > 1/Limit Throughput)
AND
(( (ABS(Current Rate - Last Stored Rate) / Last Stored Rate) > Change %)
OR
((Current Time - Last Stored Time) > Maximum period))
THEN send rate

```

Otherwise, store in filter, and if applicable, delete the previously not sent rate message.

### 4.1.3 Quoting the rates

To start with and during a short period, it may be useful to investigate each rate update and to evaluate the frequency of updates on a daily basis. This period is called the investigation period and should be kept short. At the end of the investigation period, you can then optimize the filtering rules accordingly in order to keep a good balance between system performance and update frequency of the rates.

---

**Important:** It is important that the filtering rules be properly optimized in order to reduce any impact to system performances.

---

To switch on quoting rates during the investigation period, you need set up the following:

- The parameter **keep quotes days** is set in the Configuration Table Editor to the specified number of days that you want to store the quotes in the system. See *TRM System Admin Guide*.

---

**Note:** This value is used by the activity **Purge Market Quotes** when the **Keep Quotes Days** is not set directly in the activity. You can schedule this activity to run on a regular basis, for example, daily, to keep the quotes only the number of days defined by these two parameters. See *A.57 Purge Market Quotes* on page 651.

---

- The switch **Log Changes** is selected for the scenario that you want to use for the quoting in the Scenario Editor, for example, DEFAULT.

---

**Important:** After you have completed the investigation period and optimized your filtering rules, you can switch off the quoting the rates, i.e. switch off **Log Changes** at the scenario level and set keep quote days to 0.

---

## 4.2 Defining scenarios and subscenarios

In TRM, you can specify multiple scenarios and subscenarios to identify more specifically the quotation to be used for an instrument.

Subscenarios are useful for fixing of floating-rate cashflows and for calibration of complex pricing models, for example when different sets of market prices must be captured at different times of day. A single fixing scenario may be used, with subscenarios for fixings during the Tokyo, London and New York trading days. The use of subscenarios avoids the need for separate fixing scenarios for each fixing time/location. For example, you can define the following: EUR/USD spot 9:00 fixing London, EUR/USD spot 9:00 fixing Tokyo, GBP LIBOR 3M fixing London, MSFT NYSE close, or MSFT NASDAQ close, and so on.

When specifying events or cashflows (fixing, exercise, and trigger) for structured products, you can link the event to any of the specific subscenarios. You can also specify whether the eventual outcome of an event depends on the mid (default), bid, or ask quotation of the market variable to which the event or cashflow is linked.

Subscenarios are independent of scenarios: each subscenario may be used with any scenario. Scenarios are defined in Scenario Editor and subscenarios are defined in Subscenario Editor. Note that both these editor layouts are based on the application Static Data Editor (see *3.2 Static Data Editor* on page 41 for more information).

## 4.2.1 Defining scenarios

To define a scenario:

1. In Scenario Editor, fill in the fields using the information in the following table:

Information	Description
Int ID	Number of the scenario. This number is automatically generated by TRM: the first scenario is 1, the second 2, and so on.
ID & Name	ID and name for the scenario.
Fallback	Substitute scenario to fall back on.
Permission	(Technical use only) Access parameter related to the TRM database <i>ObjectPermission</i> table: see the <i>TRM System Administration Guide</i> for more information.
Domain	Domain in which this scenario is available.
Log Changes	Switch on if you want to log any changes in a scenario.

2. Save the scenario using **File - Save As New**.

## 4.2.2 Defining subscenarios

To define a subscenario:

1. In Subscenario Editor, fill in the fields using the information in the following table:

Information	Description
Int ID	Number of the subscenario. This number is automatically generated by TRM: the first subscenario is 1, the second 2, and so on.
ID & Name	ID and name for the subscenario.
Permission	(Technical use only) Access parameter related to the TRM database <i>ObjectPermission</i> table: see the <i>TRM System Administration Guide</i> for more information.
Domain	Domain in which this subscenario is available.

2. Save the subscenario using **File - Save As New**.

## 4.3 Freezing rates automatically

For the calculation of profit/loss, generation of bookkeeping entries, and so on, you need rates that are not constantly changing with market fluctuations; you need a snapshot of the rates as they were at a pre-agreed time each day. These saved rates are called frozen rates.

- To set up TRM to freeze rates automatically, use the activity Copy Market Information (see *Note: This activity type is reserved for use by technical support staff - it is not intended for use by end users.* on page 631 for details of the activity's parameters).

---

**Note:** Activities are set up and managed in Activity Manager: see *Chapter 6 Managing activities* on page 227 for more information.

---

## 4.4 Defining simulation scenarios

In TRM, it is possible to set up quotation and interest rate movement simulations for “what if?” measuring in Treasury Monitor.

You can define hypothetical changes in quotations and interest rates using scenarios. This enables you to simulate the impact of these changes on your position.

This section describes how to set up the different simulation scenarios:

- FX simulation scenarios
  - FX spot simulation
  - FX cross simulation
- IR simulation scenarios
  - Offsets to be applied to a yield curve
  - Offsets to be applied to a spread curve
- Volatility simulation scenarios
  - Offsets to be applied to the volatility of a currency pair
  - Offsets to be applied to a volatility reference.

Note that all simulation editor layouts mentioned in the following sections are based on the application Static Data Editor (see 3.2 *Static Data Editor* on page 41 for more information).

See also 12.1.5 *Simulating movements in Treasury Monitor* on page 387.

### 4.4.1 Defining FX simulation scenarios

In FX simulation, the spot rates of the simulated currencies are changed against the reference currency, so that the simulated change is equivalent to changing the market quotes.

There are two types of FX simulation available in TRM:

- FX spot simulation
- FX cross simulation.

#### 4.4.1.1 FX spot simulation scenarios

The object of FX spot simulation is to simulate the spot rate of a currency pair.

FX spot simulation scenarios can be set up in FX Simulation Editor. Once the scenarios have been defined, they can be selected in Treasury Monitor.

The steps and the simulation currency for FX spot simulation can also be defined in Treasury Monitor: see 12.1.5 *Simulating movements in Treasury Monitor* on page 387.

To define FX spot simulation scenarios in FX Simulation Editor:

1. Enter a unique ID and name for the FX spot simulation in the upper part of the editor.
2. In the **Scenarios** page, define the simulation currency and steps for the scenario using the information in the following table:

Information	Description
Currency Class	Specific currency class to which the scenario applies.
Currency	Currency used in the simulation. If a currency class has been specified in the <b>Currency Class</b> field, only the currencies belonging to that class are available for selection.
Change	Step to be applied during the simulation. For example, to see the FX fluctuations in 1% intervals, enter 1.

Information	Description
Switches	By default, the change is a percentage of the absolute value. Switch on <b>Absolute Change</b> if you want the change to be considered as absolute.

- Repeat the procedure to add further scenarios.
- Save the FX spot simulation definition using **File – Save As New**.

#### 4.4.1.2 FX cross simulation scenarios

While the steps and the simulation currency for FX spot simulation can be defined in both FX Simulation Editor and in Treasury Monitor, the steps for FX cross simulation can only be defined in Treasury Monitor (see *12.1.5 Simulating movements in Treasury Monitor* on page 387).

### 4.4.2 Defining IR and volatility simulation scenarios

You can define hypothetical changes in interest rate curves and volatilities to use “what if” simulations in Treasury Monitor.

Although some of the required values vary between simulation editors, the general procedure for setting up an IR or volatility simulation scenario is the same.

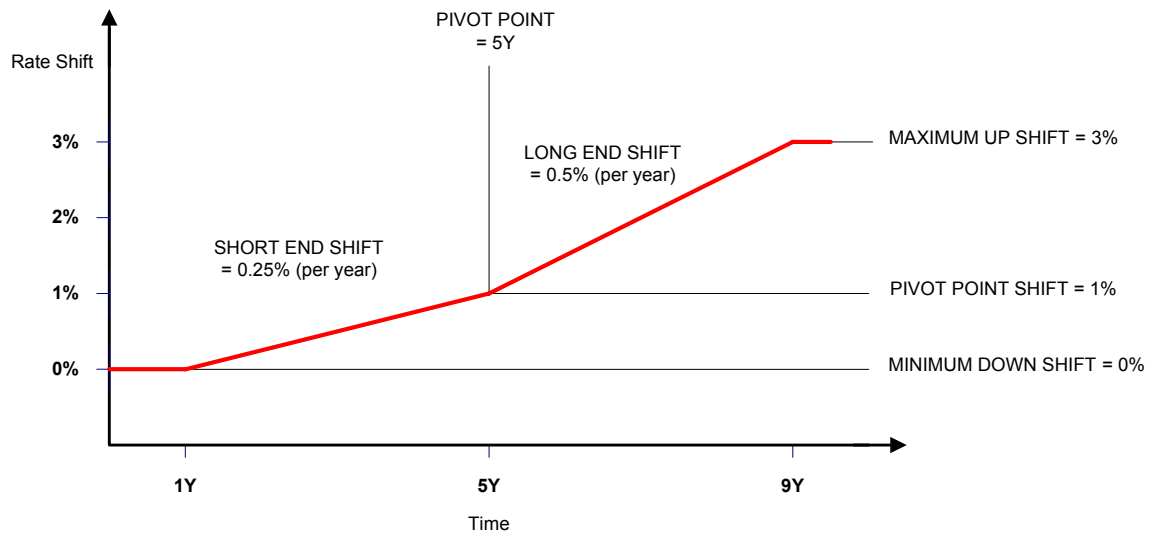
- Enter a unique ID and name for the simulation scenario in the upper part of the editor.
- In the **Scenarios** page, enter the parameters used to define the offset used in the simulation scenario.

The simulation is defined around the coordinates of the pivot point. The pivot point is defined as a time and a rate corresponding to this time.

Information	Description
Pivot Point	The time (expressed in years) from the valuation/simulation date to the pivot point of the curve/surface, i.e. the point around which the simulation parameters are defined and simulated rates are calculated.
Pivot Point Shift	Rate (expressed as a percentage) added to the underlying rate to get the simulated rate, i.e. the entire underlying curve/surface is shifted according to this rate.
Short End Shift	For dates before the <b>Pivot Point</b> , this is the rate (expressed as a percentage) per year at which the underlying curve/surface, already shifted by the <b>Pivot Point Shift</b> , is further shifted downwards. For example, for a <b>Pivot Point Shift</b> of 1% and a <b>Pivot Point</b> of 5Y, a <b>Short End Shift</b> of 0.25% results in a shift of 0.75% for the 4Y rate ( $= 1\% + (4 - 5) * 0.25\%$ ), and 0.50% for the 3Y rate ( $= 1\% + (3 - 5) * 0.25\%$ ), and so on. See also <b>Long End Shift</b> .
Long End Shift	For dates after the <b>Pivot Point</b> , this is the rate (expressed as a percentage) per year at which the underlying curve/surface, already shifted by the <b>Pivot Point Shift</b> , is further shifted upwards. For example, for a <b>Pivot Point Shift</b> of 1% and a <b>Pivot Point</b> of 5Y, a <b>Long End Shift</b> of 0.5% results in a shift of 1.5% for the 6Y rate ( $= 1\% + (6 - 5) * 0.5\%$ ), and 2% for the 7Y rate ( $= 1\% + (7 - 5) * 0.5\%$ ), and so on. See also <b>Short End Shift</b> .
Maximum Up Shift	The largest value (expressed as a percentage) that the underlying curve/surface is ever shifted. A <b>Maximum Up Shift</b> of 3% means that the underlying curve is never shifted more than 3% upwards.
Minimum Down Shift	The smallest value (expressed as a percentage) that the underlying curve/surface is ever shifted. A <b>Minimum Down Shift</b> of 0% means that the underlying curve is never shifted downwards.



The following diagram illustrates how the parameters you set are used in the simulation:



3. Enter the remaining values (for example, currency or yield curve) for the scenario, as described in the following sections.
4. Click **Add** to add the scenario.
5. Repeat the procedure to add any other scenarios you need for the simulation.
6. Save the simulation definition using **File - Save As New**.

#### 4.4.2.1 IR simulation scenarios

In the simulation, TRM adjusts all interest rates used for the valuation with the offsets defined for the scenario.

The editors used to define the different IR simulation scenarios are as follows:

- IR Simulation Editor to define the offsets to be applied to the yield curve
- Spread Simulation Editor to define the offsets to be applied to the spread curve.

Once the scenarios have been defined, they can be selected in Treasury Monitor.

IR simulation can also be configured in Treasury Monitor: see *12.1.5 Simulating movements in Treasury Monitor* on page 387.

##### 4.4.2.1.1 Yield curve simulation scenarios

Offsets to be applied to the yield curve can be defined in IR Simulation Editor.

The values specific to this type of scenario are as follows:

Information	Description
Currency Class	Specific currency class to which the scenario applies.
Currency	Currency used in the simulation. If a currency class has been specified in the <b>Currency Class</b> field, only the currencies belonging to that class are available for selection.
Yield Curve	Yield curve used in the simulation.

##### 4.4.2.1.2 Spread curve simulation scenarios

Offsets to be applied to the spread curve can be defined in Spread Simulation Editor.

The values specific to this type of scenario are as follows:

Information	Description
Currency Class	Specific currency class to which the scenario applies.
Currency	Currency used in the simulation. If a currency class has been specified in the <b>Currency Class</b> field, only the currencies belonging to that class are available for selection.
Spread Curve	Spread curve used in the simulation.

#### 4.4.2.2 Volatility simulation scenarios

In the simulation, TRM adjusts all volatilities used for the valuation with the offsets defined for the scenario.

The editors used to define the different volatility simulation scenarios are as follows:

- FX Volatility Simulation Editor to define the offsets to be applied to the volatility of the currency pair
- IR Volatility Editor to define the offset to be applied to the volatility reference.

Once the scenarios have been defined, they can be selected in Treasury Monitor.

Volatility simulation can also be configured in Treasury Monitor: see *12.1.5 Simulating movements in Treasury Monitor* on page 387.

##### 4.4.2.2.1 FX volatility simulation scenarios

Offsets to be applied to the volatility of a currency pair can be defined in FX Volatility Simulation Editor.

The values specific to this type of scenario are as follows:

Information	Description
Currency Pair	Currency pair used in the simulation.
Switches	By default, the change is a percentage of the absolute value. Switch on <b>Absolute Change</b> if you want the change to be considered as absolute.

##### 4.4.2.2.2 IR volatility simulation scenarios

Offsets to be applied to the volatility reference can be defined in IR Volatility Simulation Editor.

The values specific to this type of scenario are as follows:

Information	Description
Currency Class	Specific currency class to which the scenario applies.
Currency	Currency used in the simulation. If a currency class has been specified in the <b>Currency Class</b> field, only the currencies belonging to that class are available for selection.
Volatility Reference	Volatility structure used in the simulation.
Simulation Axis	The axis used to which the simulation applies: Expiry or Underlying.
Switches	By default, the change is a percentage of the absolute value. Switch on <b>Absolute Change</b> if you want the change to be considered as absolute.

## 4.5 Rate Monitor

Rate Monitor is used for viewing and managing all sorts of quotations, for example interest rates, instrument prices, index values, FX rates, and volatilities. These quotations can be (real-time) market quotations, quotations captured by the used, or quotations derived/calculated from other quotations.

### 4.5.1 Rate Monitor menus

The following tables describe the menu items which are specific to Rate Monitor and any layout which is based on this application.

Other menu items which are common to all applications are described in *2.2.6 Using application menus* on page 34.

#### 4.5.1.1 View

Menu item	Description
Zoom In Zoom Out Zoom to Default	Allows you to zoom into the display (to enlarge the figures), zoom out (to see more of the display), or zoom to default (to reset the original zoom).
Toggle Tab Orientation	Moves page names either to the top or the bottom of the display.

#### 4.5.1.2 Page

Menu item	Description
New Page	<p>Adds a new page with the default layout. Select from:</p> <ul style="list-style-type: none"> <li>• <b>Instrument</b> - to display quotations for quoted instruments such as Bonds, Equities, or Indexes. If you have a list of <i>1</i> to <i>n</i> quoted instruments somewhere (e.g. in Transaction Manager, in a report, in Microsoft Excel) and you want to see/manipulate the prices of these instruments in Rate Monitor, you can do the following: <ul style="list-style-type: none"> <li>a. Copy the instrument IDs (to the clipboard).</li> <li>b. In the <b>Instrument</b> page of Rate Monitor, click the <b>Paste</b> button near the top right corner. The instruments are added to the list of <b>Selected</b> instruments (provided they are valid, quoted instruments).</li> </ul> </li> <li>• <b>FX Rate</b> - to display exchange rates for currencies (<b>FX Rate</b> or <b>FX Volatility</b>).</li> <li>• <b>FX Fixing Rate</b> - to display exchange rates for currency pairs used for fixing. The base currency of the fixing rate is the currency defined in Currency Editor's <b>Fixing Rates</b> page, while the quote currency of the fixing rate corresponds to the ID of the currency.</li> <li>• <b>IR Quote / Yield Curve</b> - to display direct and derived IR quotes and calculation zero coupon yields.</li> <li>• <b>Credit Default Swap</b> - to display credit default swap quotes and corresponding default probabilities and hazard rates.</li> <li>• <b>IR Volatility</b>: to display prices for volatility structures (Bond Option, Cap/Floor, Caplet/Floorlet, or Swaption).</li> <li>• <b>Performance Index</b>: to visualize and maintain prices and composition of a performance index instrument.</li> </ul>
Save	Saves any changes made to the quote values.
Refresh	Refreshes the display.

Menu item	Description
Dockable	Converts the selected page into a floating window. Using the same drag and drop function that is available in other applications (such as Application Manager and Transaction Manager), you can detach a page from the main Rate Monitor window so that it becomes a floating window, and then reposition it either elsewhere in Rate Monitor, or as a separate window in your workspace. See 2.2.7 <i>Customizing the display of applications</i> on page 35.
Hide Auto Hide Hide All	Hides dockable pages from the display. You can reinstate a page by clicking on the page's tab.
Close All	Closes all open pages in the display.
Apply Date Range	Opens a dialog in which you can specify a date range for the quotes you want to display. (Un-checked 'Start/End dates only' implicitly meant 'all dates in the range'.) You can also specify recurrence of dates (weekly, monthly, quarterly and yearly) by selecting from a list. The dates start at the Start Date and increase by week/month/quarter/year, as long as the date is less than or equal to the End Date Note: If you apply and save a date range it is saved with the layout. This means that when you reopen the layout, any previously entered dates will be offered as the initial choice.
Show Blank Rows Show Blank Columns	Hides empty rows or columns from the display.
Delete in Send	If you deleted any rates in Rate Monitor, and you want those rates to be removed from the database, select this option.
Reset	Re-fetches the data originally retrieved from the database, erasing any data that has been modified.

#### 4.5.1.3 Layout

Menu item	Description
Save	Opens the <b>Save</b> dialog so you can save any changes made to the current layout.
Save As	Opens a dialog so that you can save a new layout. You need to enter the following information in the <b>Save As</b> dialog: <ul style="list-style-type: none"> <li>• <b>Layout Name</b> - descriptive name for the layout.</li> <li>• <b>Owner</b> - User ID of the owner of the layout. Only this user is permitted to modify the layout. You may also specify a Group ID in this field.</li> <li>• <b>User(s)</b> - User or group of users that may use the layout to enter their transactions.</li> </ul> The layouts you save are then listed in the <b>Layout</b> selection list: see <b>Layout - My Layouts</b> .
Properties	Shows the properties of the current layout (for example, layout name, owner, and user).
Delete	Allows you to delete the current layout.
My Layouts	Opens a multi-selection list to enable you to select the layouts that you want to be displayed in the <b>Layout</b> menu. In the menu, the layouts are split into two sections: own and shared.

#### 4.5.1.4 Window

Menu Item	Description
Discovery Console	Opens the Discovery Console. If no results are displayed for zero curves, you can use the Discovery Console to show information about the setup or quotation that may be preventing Rate Monitor from displaying any results.

#### 4.5.1.5 Commands

**Note:** The **Commands** menu is available when you select a **Caplet/Floorlet** page from the **Page** menu.

Menu Item	Description
Generate Caplet/Floorlet Surface	Triggers the calculation of caplet/floorlet volatility from the cap/floor volatility surface.

### 4.5.2 Toolbar

Toolbar button	Description
Toggle Realtime Updates	Displays realtime updates if this button is enabled on the toolbar.

### 4.5.3 Start-up parameters

It is possible to alter the start-up parameters so that Rate Monitor launches in a different mode. See *C.8 Rate Monitor* on page 683 for information about the options available.

### 4.5.4 Managing market data in Rate Monitor

You can configure Rate Monitor according to your personal preferences by creating a page or groups of pages and saving them in a layout. You select the values you want to be displayed in each page of the layout.

You can create and save the layouts either for your own personal use, or to be shared by other users.

#### 4.5.4.1 Configuring page layouts

The procedure to configure a page layout so you can view quotations in Rate Monitor is identical for all page types.

To configure a page layout:

1. Select **Page - New Page** and the specific page you want to configure.
2. In the resulting dialog, select the rates you want to display.  
A new page with the default layout displays the rates you have selected.
3. Right-click the page tab and select **Setup**.
4. In the resulting dialog, set up the horizontal and vertical axes by selecting and configuring any other values you want to view.
  - For each axis, select the values you want to display, for example, Figures and Dates.  
See *4.5.4.2 Selecting axes values* on page 174 for more information.
  - Right-click an item and select **Configure**.

You can configure an item even if it is not in the **Selected** list.

You can also configure an item directly by right-clicking on the corresponding axis in the Rate Monitor page. For example, if you want to set up the date range, right-click the date and select **Configure this axis**.

- Repeat the procedure to configure each item as necessary.

**5.** Click **OK** to close the axes setup dialog.

Rate Monitor displays the page with the settings you have configured:

- Green cells indicate one of the following: that the quote does not correspond to today's price; that the quote does not originate from this scenario (a fallback scenario is used); or that the quote is user-modified.
- Gray cells indicate that the quote cannot be edited.
- White cells indicate that the quote is saved to the database.

**6.** Right-click the page tab again, to view other options.

Menu item	Description
New Page	Inserts another page into the display.
Dockable	Converts the current page into a floating window.
Close	Closes the current page.
Duplicate	Inserts a new page into the display with the same values as the current page.
Title	Allows you to change the name on the page's tab.

**7.** Save the layout using **Layout - Save As**.

#### 4.5.4.2 Selecting axes values

The following tables describe the axes values that are available for each **Page** in Rate Monitor.

##### 4.5.4.2.1 Instrument axes

Value	Description
Dates	The dates for which you want to view the quotations. Choose the date range as follows: <ul style="list-style-type: none"> <li>• <b>All dates</b> to see all dates within the selected date range.</li> <li>• <b>Start/End dates only</b> to see only the two selected dates.</li> <li>• <b>Weekly/Monthly/Quarterly/Yearly</b> to see weekly/monthly/quarterly/yearly dates within the selected date range.</li> </ul>
Figures	Figures displayed on the page. See 4.5.4.4.1 <i>Instrument figures</i> on page 179 for more information.
Periods	The 'period' of the quotation, i.e. SPOT for most quoted instruments. For CTD bond futures, the selection of this axis also exposes the entire basket of underlying bonds, allowing the monitoring of certain bond-specific figures (e.g. implied repo rate, bid/ask risk). For future chain instruments, the selection exposes all the active contracts in the chain.
Rates	Instruments for which you want to view the quotations.
Scenarios	Scenario of the quotations. If you select more than one scenario, you must select <b>Scenario</b> for one of the axes to display the quotations.
Subscenarios	Subscenario of the quotations. If you select more than one subscenario, you must select <b>Subscenario</b> for one of the axes to display the quotations.

#### 4.5.4.2.2 FX Rate axes

Value	Description
Dates	See 4.5.4.2.1 <i>Instrument axes</i> on page 174.
Figures	Figures displayed on the page. See 4.5.4.4.2 <i>FX Rate figures</i> on page 180.
Quote Currency	The currency against which you want to see calculated (cross) quotations. See the description for <b>Rates</b> .
Rates	Currencies for which you want to view the quotations. The quotations are displayed and editable against the Quote Base currency (usually USD) of each selected currency. By selecting the <b>Quote Currency</b> axis, it is possible to view (but not edit) calculated quotations against any currency.
Scenarios	See 4.5.4.2.1 <i>Instrument axes</i> on page 174.
Subscenarios	See 4.5.4.2.1 <i>Instrument axes</i> on page 174.
Tenors	Tenor(s) of the quotations. If <b>Tenors</b> is not selected, then only SPOT quotations are displayed. If <b>Tenors</b> is selected, the forward tenors and quotations are also displayed.

#### 4.5.4.2.3 FX Volatility axes

Value	Description
Dates	See 4.5.4.2.1 <i>Instrument axes</i> on page 174.
Delta	Volatility surface points to be displayed, from Put 5% to Call 5%. The axis can be configured to display only ATM volatilities, or the entire surface.
Figures	Figures displayed on the page. See 4.5.4.4.3 <i>FX Volatility figures</i> on page 181.
Quote Currency	The currency against which you want to view (and capture) volatility quotations. See the description for <b>Rates</b> .
Rates	Currencies for which you want to view the volatility quotations. By default, the volatility quotation of the selected currency against the Quote Base currency (usually USD) is displayed. By selecting the <b>Quote Currency</b> axis, it is possible to display and capture volatility quotations for the selected currency against the quote currency.
Scenarios	See 4.5.4.2.1 <i>Instrument axes</i> on page 174.
Subscenarios	See 4.5.4.2.1 <i>Instrument axes</i> on page 174.
Tenors	Tenor(s) of the quotations. If <b>Tenors</b> is not selected, then only SPOT quotations are displayed. If <b>Tenors</b> is selected, the forward tenors and quotations are also displayed.

#### 4.5.4.2.4 FX Fixing Rate axes

Value	Description
Dates	See 4.5.4.2.1 <i>Instrument axes</i> on page 174.
Figures	Figures displayed on the page. See 4.5.4.4.4 <i>FX Fixing Rate figures</i> on page 181.
FX Fixing Rate	The currency against which you want to see calculated (cross) quotations. See the description for <b>Rates</b> .
Periods	SPOT, as only spot quotations are available for FX fixing rates.
Scenarios	See 4.5.4.2.1 <i>Instrument axes</i> on page 174.
Subscenarios	See 4.5.4.2.1 <i>Instrument axes</i> on page 174.

#### 4.5.4.2.5 IR Quote /Yield Curve axes

Value	Description
Dates	See 4.5.4.2.1 <i>Instrument axes</i> on page 174.
Figures	Figures displayed on the page. See 4.5.4.4.5 <i>IR Quote / Yield Curve figures</i> on page 181.
Rates	IR quotes and yield curves for which you want to view the quotations and/or calculations.
Scenarios	See 4.5.4.2.1 <i>Instrument axes</i> on page 174.
Subscenarios	See 4.5.4.2.1 <i>Instrument axes</i> on page 174.
Tenors	Tenor(s) of the quotations and calculations. For constructed yield curves, all inputs (i.e. also futures and bonds) are displayed as 'tenors'.

#### 4.5.4.2.6 Credit Default Swap axes

Value	Description
Dates	See 4.5.4.2.1 <i>Instrument axes</i> on page 174.
Figures	Figures displayed on the page. See 4.5.4.4.6 <i>Credit Default Swap figures</i> on page 182.
Rates	Credit default swaps for which you want to view the quotations.
Scenarios	See 4.5.4.2.1 <i>Instrument axes</i> on page 174.
Subscenarios	See 4.5.4.2.1 <i>Instrument axes</i> on page 174.
Tenors	Tenor(s) of the quotations.

#### 4.5.4.2.7 Bond Option Volatility axes

Value	Description
Dates	See 4.5.4.2.1 <i>Instrument axes</i> on page 174.
Expiry	Expiry date of the option (i.e. final date when the option can be exercised).
Figures	Figures displayed on the page. See 4.5.4.4.7 <i>Bond Option Volatility figures</i> on page 182.
Rates	Rates for which you want to view the quotations. You must select at least one rate. Only the rates that are relevant to the current page are displayed. For example, when you configure <b>Rates</b> in the <b>Instrument</b> page, you select the quoted instruments (assigned with the <b>Quoted</b> feature) for which you want to view the quotations. This includes such instruments as bonds, equities, or indexes. Note: In the <b>Yield Curve</b> page, <b>Rates</b> = Yield Curves (or spread curves).
Scenarios	See 4.5.4.2.1 <i>Instrument axes</i> on page 174.
Strike	Strike of the corresponding option, i.e. bond price in percentage.
Subscenarios	See 4.5.4.2.1 <i>Instrument axes</i> on page 174.
Underlying Maturity	Maturity of the underlying bond.



#### 4.5.4.2.8 Cap / Floor Volatility axes

Value	Description
Caplet Length	Length of the underlying caplets/floorlets.
Dates	See 4.5.4.2.1 <i>Instrument axes</i> on page 174.
Figures	Figures displayed on the page. See 4.5.4.4.8 <i>Cap / Floor Volatility figures</i> on page 182.
Maturity	Maturity of the cap / floor.
Rates	Rates for which you want to view the quotations. You must select at least one rate. Only the rates that are relevant to the current page are displayed. For example, when you configure <b>Rates</b> in the <b>Instrument</b> page, you select the quoted instruments (assigned with the <b>Quoted</b> feature) for which you want to view the quotations. This includes such instruments as bonds, equities, or indexes. Note: In the <b>Yield Curve</b> page, <b>Rates</b> = Yield Curves (or spread curves).
Scenarios	See 4.5.4.2.1 <i>Instrument axes</i> on page 174.
Strike	Strike value of the corresponding cap/floor.
Subscenarios	See 4.5.4.2.1 <i>Instrument axes</i> on page 174.

#### 4.5.4.2.9 Caplet / Floorlet Volatility axes

Value	Description
Caplet Length	Length of the underlying caplet/floorlet
Dates	See 4.5.4.2.1 <i>Instrument axes</i> on page 174.
Figures	Figures displayed on the page. See 4.5.4.4.9 <i>Caplet / Floorlet Volatility figures</i> on page 182.
Maturity	Start date of the corresponding caplet/floorlet (displayed values are in accordance with the caplet/floorlet length).
Rates	Rates for which you want to view the quotations. You must select at least one rate. Only the rates that are relevant to the current page are displayed. For example, when you configure <b>Rates</b> in the <b>Instrument</b> page, you select the quoted instruments (assigned with the <b>Quoted</b> feature) for which you want to view the quotations. This includes such instruments as bonds, equities, or indexes. Note: In the <b>Yield Curve</b> page, <b>Rates</b> = Yield Curves (or spread curves).
Scenarios	See 4.5.4.2.1 <i>Instrument axes</i> on page 174.
Strike	Strike value of the corresponding caplet/floorlet.
Subscenarios	See 4.5.4.2.1 <i>Instrument axes</i> on page 174.

#### 4.5.4.2.10 Swaption Volatility axes

Value	Description
Dates	See 4.5.4.2.1 <i>Instrument axes</i> on page 174.
Expiry	Expiry date of the swaption (i.e. final date when the option can be exercised).
Figures	Figures displayed on the page. See 4.5.4.4.10 <i>Swaption Volatility figures</i> on page 183.

Value	Description
Rates	Rates for which you want to view the quotations. You must select at least one rate. Only the rates that are relevant to the current page are displayed. For example, when you configure <b>Rates</b> in the <b>Instrument</b> page, you select the quoted instruments (assigned with the <b>Quoted</b> feature) for which you want to view the quotations. This includes such instruments as bonds, equities, or indexes. Note: In the <b>Yield Curve</b> page, <b>Rates</b> = Yield Curves (or spread curves).
Scenarios	See 4.5.4.2.1 <i>Instrument axes</i> on page 174.
Strike	Strike value of the swaption for which volatility will be displayed.
Subscenarios	See 4.5.4.2.1 <i>Instrument axes</i> on page 174.
Underlying Maturity	Length of the underlying swap.

#### 4.5.4.2.11 Composite Index axes

Value	Description
Dates	See 4.5.4.2.1 <i>Instrument axes</i> on page 174.
Figures	Figures displayed on the page. See 4.5.4.4.11 <i>Composite Index figures</i> on page 183.
Indexes	The index you want to observe.
Scenarios	See 4.5.4.2.1 <i>Instrument axes</i> on page 174.
Subscenarios	See 4.5.4.2.1 <i>Instrument axes</i> on page 174.
Underlying	The components of the index. The values for the index itself are displayed in row "INDEX".

#### 4.5.4.2.12 Performance Index axes

Value	Description
Dates	See 4.5.4.2.1 <i>Instrument axes</i> on page 174. Note: When selecting an interval only the numerator and denominator dates are effectively displayed, since any other date would be completely meaningless for a performance index (index values cannot change between observations).
Figures	Figures displayed on the page. See 4.5.4.4.12 <i>Performance Index figures</i> on page 184.
Indexes	The index you want to observe.
Num/Denom	For the performance averaging index only. Indicates if the corresponding observations are for numerator or denominator. (It is possible to have both numerator and denominator observations for the same date).
Scenarios	See 4.5.4.2.1 <i>Instrument axes</i> on page 174.
Subscenarios	See 4.5.4.2.1 <i>Instrument axes</i> on page 174.
Underlying	The components of the index. The values for the index itself are displayed in row "INDEX".

#### 4.5.4.2.13 Imported Index axes

Value	Description
Dates	See 4.5.4.2.1 <i>Instrument axes</i> on page 174.
Figures	Figures displayed on the page. 4.5.4.4.13 <i>Imported Index figures</i> on page 184.
Indexes	The index you want to observe.
Scenarios	See 4.5.4.2.1 <i>Instrument axes</i> on page 174.
Subscenarios	See 4.5.4.2.1 <i>Instrument axes</i> on page 174.
Underlying	The components of the index. The values for the index itself are displayed in row "INDEX".

#### 4.5.4.2.14 Example: setting the volatility for EUR/USD

In Rate Monitor, if you want to set the volatility for EUR/USD, you need the following configuration in the FX Volatility page:

- Vertical axis:
  - Tenors
- Horizontal axis:
  - Quote Currency: USD
  - Rate: EUR
  - Delta
  - Figures.

#### 4.5.4.3 Configuring period axes

All period axes (tenors, delta, and so on) are configurable by entering or selecting values that act as inclusive filters. If the periods match these filters, they will be displayed in the page.

To configure a period axis:

1. Right-click the axis and select **Configure this axis**.
2. In the **Filter Selection** dialog, select or add the period that you want to display (for example, Smile).

Note that user-defined filters that follow the regular expression syntax can be used in order to select multiple periods.

3. Click **OK** to close the dialog.

The page filters the periods to show only those specified. If you selected **All**, then all available periods will be displayed.

#### 4.5.4.4 Selecting figures

The following tables describe the available values for the **Figures** axis in Rate Monitor for each **Page**.

##### 4.5.4.4.1 Instrument figures

Figure	Description
Bid, Ask	The bid and ask quotations of the instrument. The type of the quotation is defined by the <b>Quoted</b> feature attached to the instrument. See the <i>TRM Instruments: Processing and Calculations Guide</i> for information about setting up quoted instruments.

Figure	Description
Bid Price, Ask Price	The bid and ask quotations expressed as a price (percentage), calculated according to the setup of the instrument. This is relevant mainly for bonds and discount papers quoted in yield or discount rate. For instruments quoted in price, <b>Bid/Ask Price</b> displays the same as <b>Bid/Ask</b> .
Bid Risk, Ask Risk	Bid/ask risk are relevant when the bond has been assigned the <b>Risk-Yield</b> feature (see the <i>TRM Instruments: Processing and Calculations Guide</i> for more information).
Bid Trading Margin, Ask Trading Margin	Relevant only for the following Australian instruments: Floating Rate Note and MBS. Represents the quotation expressed in percentage of these instruments (specific formula used when computing the price).
Bid Vol, Ask Vol	The volatility of the instrument (may be used in valuation).
Bid Yield, Ask Yield	The bid and ask quotations expressed as a yield, calculated according to the setup of the instrument. For instruments quoted in yield, <b>Bid/Ask Yield</b> displays the same as <b>Bid/Ask</b> .
Bid Yield (2nd), Ask Yield (2nd)	Yield calculated according to the selected additional yield convention. See the description for <b>Convention (2nd)</b> .
Bid Z-DM/Spread, Ask Z-DM/Spread	These fields display either the Z-Spread (for fixed rate bonds) or the Zero Discount Margin (for FRNs) provided that the instrument has the <b>Z-DM/Spread Setup</b> feature: see the <i>TRM Instruments: Processing and Calculations Guide</i> for more information.
Beta	An IR sensitivity scaling factor (yield beta) for index-linked bonds. This factor is used as a multiplier for scaling IR exposure, duration figures, and effective convexity.
Convention (2nd)	For bonds, it is possible to configure additional yield calculations (in addition to the trading convention) using the <b>Yield</b> feature (see the <i>TRM Instruments: Processing and Calculations Guide</i> ). This field displays the name of the default additional yield convention. If multiple conventions have been defined for the instrument, you can select another convention. The <b>Bid/Ask Yield (2nd)</b> fields display the yield calculated according to the selected convention.
Fallback Date Fallback Scenario	If quotations don't exist for the requested scenario and date, the 'fallback logic' results in the displaying of quotations from another ('fallback') scenario and possibly a historical ('fallback') date. In such a case, these fields display the actual scenario and date from which the quotations were retrieved.
Implied Repo Rate	The implied repo rate as calculated for each of the bonds in the underlying basket of a CTD bond future. To see the underlying basket, the <b>Periods</b> axis needs to be selected.
Index Rate	Specific to certain index-linked bonds, this figure displays an additional rate used in index calculations (e.g. index prolongation rate for UK Gilts).
Index Ratio	Specific to index-linked bonds, this figure displays the current index ratio associated with the instrument.
Index Value	Specific to index-linked bonds, this figure displays the current index value associated with the instrument.
Index Value (LFT)	Specific to Brazilian LFTs, this figure displays the index value associated with the instrument.
Period From	This field is used to store the publication date of the index value. This information is relevant for Australian CPI values, as the date is used in Australian index-linked annuity bond (IAB) calculations.
Price Type	The type of quote displayed in the <b>Bid</b> and <b>Ask</b> fields.

#### 4.5.4.4.2 FX Rate figures

Figure	Description
Bid, Ask	The bid and ask quotations of the currency. Forward quotations are expressed in forward points (according to Currency Editor definitions).

Figure	Description
Bid Rate, Ask Rate	The Bid, Ask converted into outright quotations (spot + forward points).
Date From, Date To	The exact dates for the tenor of the quotation, i.e. the spot date for the spot quotation, and the spot date and e.g. a date three months from spot for the 3M quotation.
Fallback Date Fallback Scenario	See 4.5.4.4.1 <i>Instrument figures</i> on page 179.

#### 4.5.4.4.3 FX Volatility figures

Figure	Description
Bid, Ask	The bid and ask volatility quotations for the currency pair.
Date From, Date To	The exact dates for the tenor of the quotation, i.e. the spot date for the spot quotation, and e.g. the spot date and a date three months from spot for the 3M quotation.
Fallback Date Fallback Scenario	See 4.5.4.4.1 <i>Instrument figures</i> on page 179.

#### 4.5.4.4.4 FX Fixing Rate figures

Figure	Description
Bid, Ask	The bid and ask (spot) quotations for the currency pair.
Date To	The spot date of the quotation (currency pair), as only spot quotations are available for FX fixing rates.
Fallback Date Fallback Scenario	See 4.5.4.4.1 <i>Instrument figures</i> on page 179.

#### 4.5.4.4.5 IR Quote / Yield Curve figures

Figure	Description
Bid, Ask	The bid and ask quotations of the IR quote. For constructed yield curves, these display the bootstrapped Bid/Ask Discount Factors converted into yields using the interpolation setup of the yield curve.
Bid Yield, Ask Yield	Bid/Ask Discount Factor converted into yield using the interpolation setup of the yield curve. These are calculated for IR quotes bootstrapped directly into yield curves and for constructed yields curves.
Bid Discount Factor, Ask Discount Factor	The bootstrapped discount factors calculated separately from the bid and ask side of the inputs (IR quotes or instrument prices). These are calculated for IR quotes bootstrapped directly into yield curves and for constructed yields curves.
Date Basis	The date basis of the IR quote.
Date From, Date To	The exact dates for the tenor, e.g. the spot date and a date three months from spot for the 3M quotation.
Discount Factor	The bootstrapped (mid) discount factor calculated from the mid quotations of the inputs (IR quotes or instrument prices). This is calculated for IR quotes bootstrapped directly into yield curves and for constructed yields curves.
Price Type	The price type of the IR quote (e.g. Periodic Rate).

Figure	Description
Yield	Discount Factor converted into yield using the interpolation setup of the yield curve. This is calculated for IR quotes bootstrapped directly into yield curves and for constructed yields curves.
Yield Date Basis	The date basis used in the calculation of the yield.
Yield Price Type	The price type in which the yield is expressed (e.g. Continuous Yield).

#### 4.5.4.4.6 Credit Default Swap figures

Figure	Description
Bid, Ask	The bid and ask CDS quotations.
Date From, Date To	The exact dates for the tenor, e.g. the spot date and a date three months from spot for the 3M quotation.
Default Probability (%)	The default probability calculated from the CDS quotes, expressed as a percentage.
Hazard Rate (bp)	The hazard rate calculated from default probabilities, expressed in basis points.

#### 4.5.4.4.7 Bond Option Volatility figures

Figure	Description
Bid, Ask	The bid and ask quotations.
Fallback Date Fallback Scenario	See 4.5.4.4.1 <i>Instrument figures</i> on page 179.
Price Type	The type of quote displayed in the <b>Bid</b> and <b>Ask</b> fields.
Strike Value	This figure displays the value of the strike of each column of the volatility reference.

#### 4.5.4.4.8 Cap / Floor Volatility figures

Figure	Description
Bid, Ask	The bid and ask quotations.
Fallback Date Fallback Scenario	See 4.5.4.4.1 <i>Instrument figures</i> on page 179.
Price Type	The type of quote displayed in the <b>Bid</b> and <b>Ask</b> fields.
Strike Value	This figure displays the value of the strike of each column of the volatility reference.

#### 4.5.4.4.9 Caplet / Floorlet Volatility figures

Figure	Description
Bid, Ask	The bid and ask quotations.
Fallback Date Fallback Scenario	See 4.5.4.4.1 <i>Instrument figures</i> on page 179.
Price Type	The type of quote displayed in the <b>Bid</b> and <b>Ask</b> fields.

Figure	Description
Strike Value	This figure displays the value of the strike of each column of the volatility reference.

#### 4.5.4.4.10 Swaption Volatility figures

Figure	Description
Bid, Ask	The bid and ask quotations.
Fallback Date Fallback Scenario	See 4.5.4.4.1 <i>Instrument figures</i> on page 179.
Price Type	The type of quote displayed in the <b>Bid</b> and <b>Ask</b> fields.
Strike Value	This figure displays the value of the strike of each column of the volatility reference.

#### 4.5.4.4.11 Composite Index figures

Figure	Description
Accrued Interest	<ul style="list-style-type: none"> <li>At component level, the AI of the component in the component's currency.</li> <li>At index level, the sum of AI of each component in the index currency.</li> </ul>
Accrued Interest (Q)	This is the equivalent of the <b>Accrued Interest</b> figure above but it is stored in the Prices table (via the <b>Index Freeze</b> activity).
Cash	<ul style="list-style-type: none"> <li>At component level, the cash accumulated since the last revision for this component, in the component's currency (Hold Cash On Security method).</li> <li>At index level, the cash accumulated for all components, in the index's currency (Hold Cash On Index method).</li> </ul>
Cash (Q)	This is the equivalent of the <b>Cash</b> figure above but it is stored in the Prices table (via the <b>Index Freeze</b> activity)
Factor	<p>Factor applied to the stored units for this component.</p> <ul style="list-style-type: none"> <li>At component level, the factor applied to the units to compute the weight of the component. It is used either to include a reinvestment, or to compensate for a split (Reinvest Cash on Security method). Depends on the Rebalance setup.</li> <li>At index level, the factor applied to the MV of the index. It represents the investment of the component outflows at index level (Reinvest Cash On Index method). Depends on the Rebate Setup.</li> </ul>
FX Rate	FX rate used for this component on this date.
FX Rate (Q)	This is the equivalent of the <b>FX Rate</b> figure above but it is stored in Prices table (via the <b>Index Freeze</b> activity.)
Market Value	<p>Total market capitalization of the index on this date. This figure applies only to the index and not to individual components.</p> <ul style="list-style-type: none"> <li>At component level, the market capitalization of the component in the index, expressed in the component's currency.</li> <li>At index level, the marketing capitalization of the index expressed in the index currency.</li> </ul>
Market Value (Q)	This is the equivalent of the <b>Market Value</b> figure above but it is stored in the Prices table (via the <b>Index Freeze</b> activity)
Price	The value of the index for the index; the price of the component for the components.

Figure	Description
Price (Q)	This is the equivalent of the <b>Price</b> figure above but it is stored in Prices table (via the <b>Index Freeze</b> activity).
Units	Units of the underlying taken into account for the index calculation (taken from the index composition and re-balance factors).
Weight %	Relative weight of the component in the index (only visible for components).
Weight % (Q)	This is the equivalent of the <b>Weight %</b> figure above but it is stored in the Prices table (via the <b>Index Freeze</b> activity).

#### 4.5.4.4.12 Performance Index figures

Figure	Description
Factor	Factor applied to stored units for this component (taken from the Re-Balance setup).
FX Rate	FX rate used for this component on this date.
FX Rate (Q)	This is the equivalent of the <b>FX Rate</b> figure above but it is stored in the Prices table (via the <b>Index Freeze</b> activity).
Market Value	Total market capitalization of the index on this date. This figure applies only to the index and not to individual components. <ul style="list-style-type: none"> <li>At component level, the market capitalization of the component in the index, expressed in the component's currency.</li> <li>At index level, the marketing capitalization of the index expressed in the index currency.</li> </ul>
Market Value (Q)	This is the equivalent of the <b>Market Value</b> figure above but it is stored in the Prices table (via the <b>Index Freeze</b> activity).
Observation Date	Date when the price of the underlying has been observed for the calculation.
Price	The value of the index for the index; the price of the component for the components.
Price (Q)	This is the equivalent of the <b>Price</b> figure above but it is stored in the Prices table (via the <b>Index Freeze</b> activity).
Units	Units of the underlying taken into account for the index calculation (taken from the index composition and re-balance factors).
Weight %	Relative weight of the component in the index (only visible for components).
Weight % (Q)	This is the equivalent of the <b>Weight %</b> figure above but it is stored in the Prices table (via the <b>Index Freeze</b> activity).

#### 4.5.4.4.13 Imported Index figures

Figure	Description
Price	The value of the index. This figure is available at index level only.
Weight %	The relative weight of the component in the index. At index level, the calculated sum is displayed in order to help track composition inconsistencies (it should be 100%).

---

**Note:** For information about the figures displayed in a **Performance Index** page, see the guide: *TRM Instruments: Processing and Calculations*.

---



#### 4.5.4.5 Manually adjusting and creating quotations

You can manually adjust the quotations displayed in Rate Monitor if the cells are editable. You can also enter values if no quotations are available in the scenario.

To adjust or enter quotations:

1. Enter the values directly into the corresponding cell of the Rate Monitor page.

The following table describes the values you can enter in each of Rate Monitor's pages:

Page	Description
Instrument	<p>You can view rates for quoted instruments in the Instruments page.</p> <ul style="list-style-type: none"> <li>• If the instrument's Price Type = Price %, enter a price as the quotation.</li> <li>• If the instrument's Price Type = Yield, enter a price or a yield as the quotation.</li> <li>• If the instrument is a Bond or an Equity, enter the spot price.</li> <li>• If an Equity's Price Type = Amount/Unit, you can enter the Bid or Ask price only.</li> <li>• For a CTD Future, you can enter the Bid or Ask price only.</li> </ul> <p>You can only view instruments that have been assigned with the <b>Quoted</b> feature. This feature determines which figures (prices) are available in Rate Monitor: see <i>TRM Instruments: Processing and Calculations Guide</i> for information about setting up quoted instruments.</p>
FX Rate	<p>If the quotations are for rates:</p> <ul style="list-style-type: none"> <li>• If <b>Periods</b> = <i>spot</i>, enter the spot rate.</li> <li>• For any other period, enter the quotation as forward points.</li> </ul> <p>For FX volatility:</p> <ul style="list-style-type: none"> <li>• Volatility smile quotes are interpreted as absolute volatility values.</li> </ul>
IR Quote / Yield Curve	<p>It is possible to enter, modify and save quotations for direct IR quotes. Derived IR quotes and yield curves are calculated on the fly, and their quotations and yields can only be viewed.</p> <p>The type of quotation you can enter depends on the Quotes field of the IR definition.</p> <ul style="list-style-type: none"> <li>• If Quotes = Bid/Ask, you can enter quotations in both the Bid and Ask fields.</li> <li>• If Quotes = Single Quote, you can enter a quotation in the Bid field only.</li> </ul> <p>The tenors for which you can enter quotations vary according to the tenors defined for the IR quotes in IR Quote and Yield Curve Editor.</p>
IR Volatility	<p>Before you can enter volatility rates for an instrument, you must create a volatility surface in Volatility Reference Editor.</p> <p>You enter the volatility expressed as a percentage.</p> <ul style="list-style-type: none"> <li>• For cap volatilities, you enter the data using ATM (at-the-money volatility) strike and an STK (at-the-money strike).</li> <li>• For bond options and swaptions, you enter the data using an ATM strike. Your model skews using HI and LO strikes.</li> </ul> <p>Note that for variable strikes, if there is no volatility data from the market data feeds, the values shown in Rate Monitor default to the defined strike values.</p>
Performance Index	<p>This page is used to visualize and maintain prices and % weightings of the index.</p> <p>The selected performance indexes can be displayed together with their component instruments.</p> <p>The relative weights of each component and the performance value of the index are computed and displayed in the <b>Price</b> column for each observation date.</p>

2. Select **Page - Save** to send the changes to the database.

If you deleted any rates and you want those rates to be removed from the database, set the **Delete in Send** setting in the **Page** menu.

In addition, the activity **Save Derived IR Quotes and Yield Curves** can be used to save zero-coupon rates and derived yield curves. See *A.61 Save Derived IR Quotes and Yield Curves* on page 653.

## 4.5.5 Generating quotation reports

In TRM, you can produce the following quotation-related reports:

Report	Description
Rate	Used to show quotations for today or any other specified date. See <i>B.37 Rate Report</i> on page 674 for details of the report's parameters.
Rate Log	Used to access stored rates. See <i>B.39 Rate Log Report</i> on page 675 for details of the report's parameters.
Rate Comparison	Used to compare the quotations on one date with those on another date. See <i>B.38 Rate Comparison Report</i> on page 675 for details of the report's parameters.

## 4.6 Pricing tools

TRM provides several tools which can be used to obtain the pricing of certain types of transaction.

This section describes FX Forward Pricing which is a tool used to display forward points for currency pairs. TRM also provides the IR Pricing tool as a solution to traders who want to simulate the pricing of plain vanilla swaps before generating a corresponding transaction in TRM.

See *Chapter 23 Pricing IR and FX trades* on page 575.

### 4.6.1 FX Forward Pricing

FX Forward Pricing is used to display forward FX rates for any pair of currencies and for any date in the future. You can see the forward rates for defined periods, insert your own rates at pivot periods, and view rates for broken dates in the tool.

#### 4.6.1.1 FX Forward Pricing menus

The following tables describe the menu items which are specific to FX Forward Pricing and any layout which is based on this application.

Other menu items which are common to all applications are described in *2.2.6 Using application menus* on page 34.

##### 4.6.1.1.1 File

Menu item	Description
Save Configuration	Saves the selected currency pair, so that the same currencies are displayed the next time you open FX Forward Pricing.
Reset	Resets any modified values in the tool to the market rates.

#### 4.6.1.1.2 View

Menu item	Description
Zoom In Zoom Out Zoom to Default	Allows you to zoom into the display (to enlarge the figures), zoom out (to see more of the grid), or zoom to default (to revert to the default setting).

#### 4.6.1.1.3 Options

Menu item	Description
Show Forward Points	Displays the values as forward points. If this option is not selected, forward rates (spot rate plus forward points) are displayed instead.
Show Inverse Quotes	Allows you to see inverse quotes. If this option is selected, the number of quotes per base are displayed, no matter what the currency definition is in Currency Editor.
Freeze Updates	Allows you to freeze the rates in the display. If this option is not selected, the rates will be updated as and when market rates change.
Starting Date	Allows you to select the date from which the forward rates are calculated. By default, the starting date is today's date, but you can change this date to a date in the past or in the future. Note: If you select <b>Columns - Dates</b> to display the <b>Date</b> and <b>Days</b> columns, you can see the number of days that are in each period calculated from the starting date.

#### 4.6.1.1.4 Period

Menu item	Description
Add Broken Date	Inserts a broken date between periods. The rate shown for a broken date is the rate interpolated from the period (or pivot date) on either side of the broken date. Note: Unlike pivot dates, you cannot override the value displayed.

#### 4.6.1.1.5 Rows

Menu item	Description
Add Pivot Period	Allows you to insert your own period, called a pivot period, between the pre-defined periods.
O/N T/N Spot 1W, 1M, 1Y, and so on	Allows you to select the standard periods you want to display. If you need more periods or dates to be displayed, use <b>Add Pivot Period</b> or <b>Add Broken Date</b> . See 4.6.1.3.4 <i>Selecting FX pricing periods</i> on page 189.

#### 4.6.1.1.6 Columns

Menu item	Description
Reference Columns	Displays the reference rates. If the currency pair (base currency and quote currency) that are displayed are both quoted against another currency, then you can display the quotes of each currency, as well as against each other.
Ref/Base IR Differentials	Displays the difference in interest rates between the reference currency and the base currency.
Ref/Quote IR Differentials	Displays the difference in interest rates between the reference currency and the quote currency.
Base/Quote IR Differentials	Displays the difference in interest rates between the base currency and the quote currency.
Dates	Displays for each period, the date on which the period falls, and the number of days between the start and end of period (period date).

#### 4.6.1.1.7 Graphics

Menu item	Description
Ref/Base IR Differentials Ref/Quote IR Differentials Base/Quote IR Differentials	If you have selected the corresponding IR differential column from the <b>Column</b> menu, you can choose to have a graphical representation of these IR differentials. See 4.6.1.3.5 <i>Displaying graphics</i> on page 189.

#### 4.6.1.2 Start-up parameters

It is possible to alter the start-up parameters so that FX Forward Pricing launches in a different mode.

See *C.3 FX Forward Pricing* on page 681 for information about the options available.

#### 4.6.1.3 Configuring the display

This section explains how to use FX Forward Pricing and the different ways that the information can be displayed in the tool.

##### 4.6.1.3.1 Selecting the currency pair

To select the currency pair:

1. From the **Base Currency** and **Quote Currency** fields in the toolbar, select the pair of currencies for which you want to display the rates.  
The quotes for the currency pair are displayed for each period.
2. Select **File - Save Configuration** to save the currency pair, so that the same currencies are displayed the next time you use FX Forward Pricing.

The following information is stored:

- Quote currency and base currency
- Broken dates and pivot dates
- IR differential columns.

#### 4.6.1.3.2 Selecting display options

It is possible to modify the display options by selecting the appropriate menu item from the **Options** menu.

For example, you can choose to display the values as forward points instead of forward rates, or you can change the starting date to a date in the past or in the future.

See 4.6.1.1.3 *Options* on page 187 for more information.

#### 4.6.1.3.3 Selecting columns

For each currency pair, you can select different types of information to be displayed in different columns.

For example, it is possible to display the quotes of each currency against a reference currency.

It is also possible to display the IR differentials (the difference in interest rates), calculated from the forward points, the IR differentials between the currencies of the currency pair, or the IR differentials between either currency and the reference currency.

These options are available for selection from the **Columns** menu option: see 4.6.1.1.6 *Columns* on page 188 for more information.

#### 4.6.1.3.4 Selecting FX pricing periods

There are various ways in which you can select the periods used in FX Forward Pricing.

The pre-defined standard periods (such as O/N, 3M, 6M, 1Y, and so on) can be selected from the **Rows** menu option: see 4.6.1.1.5 *Rows* on page 187.

However, you can also insert your own periods, called pivot periods, between these pre-defined periods.

Normally, all rates between periods are calculated by linear interpolation. If you insert a pivot date between two periods, then the value displayed for the pivot period is the value interpolated from the periods on either side of the pivot date. You can override this value with your own rate.

In addition to pivot dates, you can also insert broken dates between periods. The rate shown for a broken date corresponds to the rate interpolated from the period (or pivot date) on either side of the broken date. You cannot override the value displayed for a broken date.

To insert a pivot period or broken date:

1. Select **Rows - Add Pivot Period** or **Period - Add Broken Date**.
2. Select the date you want to add from the resulting dialog.

A new row displays in FX Forward Pricing and the period or date is added to the **Row** or **Period** menu.

If you want to remove a period, pivot period, or broken date from the display, you can do so by deselecting the period or date from the corresponding menu.

#### 4.6.1.3.5 Displaying graphics

If you have selected one of the IR differential columns, you can choose to have a graphical representation of these IR differentials: see 4.6.1.1.7 *Graphics* on page 188 for more information.

The graph is displayed using the default layout but it is possible to modify its appearance.

To change the appearance of a graph:

1. Select the component you want to modify by doing one of the following:
  - Right-click the graph and select the component that you want to format from the menu.
  - Double-click the component itself.
  - Right-click the graph and select **Wizard**.
2. Make your changes in the resulting dialog.

If you want to change the orientation of the graph, press and hold down the Ctrl key and drag the graph to the position you want.

## 4.7 Pricing complex derivatives

In TRM, you can trade any priced structure, including complex derivatives, using complex pricing models. These models are used in various TRM applications.

The procedure for setting up complex pricing models is as follows:

1. Define the instruments (such as, Swaptions, Caplets, and FX Options) needed to identify the parameters of the calibration models. These are contained in a calibration basket.  
See *4.7.1 Defining Calibration Baskets* on page 190.
2. Define the calibration models, by linking the mathematical model, the volatility surface, and the yield curve for each currency or currency pair. For more information, see:
  - *4.7.2 Defining a calibration model for a currency* on page 191
  - *4.7.3 Defining cross-currency calibration models* on page 192
  - *4.7.4 Defining BGM calibration models* on page 193.
3. Define the correlation-related information.

---

**Note:** If correlation terms are not specified, then by default, they are taken as zero.

---

See *4.7.5 Calibration Monitor* on page 195.

4. Calibrate derivative pricing models to market data either manually or automatically.  
See *4.7.6 Calibrating pricing models* on page 198.
5. Define a valuation model by linking the calibration model, the valuation method, and the valuation quality to the instrument in Instrument Editor.  
See *4.7.7 Assigning calibration models to instruments* on page 199.

### 4.7.1 Defining Calibration Baskets

You need to define the liquid instruments required for the calibration procedure, for example, Swaptions, Caplets, or FX Options, which are used to identify the parameters of the mathematical models. This is known as a calibration basket.

Calibration baskets are defined in the Calibration Basket Editor. This editor layout is based on the application Static Data Editor (see *3.2 Static Data Editor* on page 41 for more information).

To define a calibration basket:

1. In Calibration Basket Editor, enter the main attributes of the basket in the upper part of the editor.

Information	Description
ID & Name	Unique identifier and name for the calibration basket.
Instrument	ID of the volatility structure from which the calibration instruments are selected. <ul style="list-style-type: none"> <li>• For IR, select either a Caplet volatility structure or a Swaption volatility structure. The IR volatility structure is defined in Volatility Reference Editor and displayed in Rate Monitor.</li> <li>• For FX, select the currency pair. The FX volatility structure is defined in the <b>FX Volatility</b> page of Rate Monitor.</li> </ul>

Information	Description
Reference Date	Date against which the time to expiry, as well as the time to maturity of the calibration instruments, is calculated. <ul style="list-style-type: none"> <li>If a date is specified in this field, the calibration instruments are time dependent, that is, the time to expiry of swaptions decreases with an offset equal to the difference between the calibration date and the reference date.</li> <li>If a date is not specified in this field, the time to expiry of swaptions is constant with respect to the calibration date.</li> </ul>

- In Calibration Basket Editor's **Point** page, define the values to determine which liquid instruments (of the selected instrument in the **Instrument** field), are used for the calibration.

Information	Description
Expiry Period	The expiry period of the selected instrument.
Expiry Date	The expiry date of the selected instrument.
Underlying Period	The underlying period of the selected instrument.
Underlying Date	The underlying date of the selected instrument.
Strike	The strike of the selected instrument. Note: This corresponds to the strike value defined in Volatility Reference Editor.
Type	The type of instrument used for the calibration. The possible values are: Call (default), Put, or Straddle.
Weight	The weight factor that applies to the instrument in the calibration process. This is the weight by which the difference between market and model prices is multiplied in the calibration process.

- Add the point definition to the list by clicking **Add**.
- Save the calibration basket definition using **File - Save As New**.

## 4.7.2 Defining a calibration model for a currency

The next step in the process is to define a calibration model for each currency. This is done in Calibration Single Editor.

This editor layout is based on the application Static Data Editor (see 3.2 *Static Data Editor* on page 41 for more information).

To define a single currency calibration model:

- In Calibration Single Editor, enter the main attributes of the model in the upper part of the editor.

Information	Description
ID & Name	Unique identifier and name for the single currency calibration model.
Currency	Currency attached to the single currency model.
Yield Curve	Yield curve used for the calibration of the single currency model. If this field is left blank, the system uses the curve defined in Currency Editor's <b>Journals</b> page for the currency definition.
Quality	Integer to define the speed and the numerical convergence of the calibration model. Note: This number is only used for the following models: Black-Karasinsky, Spot Skew, and Black-Derman-Toy.
Offset	Percentage value by which the yield curve should be shifted before recalibration.

Information	Description
Exclude from calibration activity	Switch on to exclude the model during execution of the NumeriX Calibration activity. See <i>A.52 NumeriX Calibration</i> on page 649.

2. In Calibration Single Editor's **Basket** page, enter the values to define any time dependent calibration basket instruments.

Information	Description
Active Since Active Until	Date range within which the basket defined in the <b>Basket</b> field is active (see next). Leave these fields blank if you want the basket to apply indefinitely.
Basket 1	Basket of instruments used for the calibration of the single currency model.
Basket 2	Second basket which can be used for the calibration if <b>Basket 1</b> contains insufficient instruments and it has been defined with a <b>Reference Date</b> .

3. Add the basket definition to the list by clicking **Add**.
4. In Calibration Single Editor's **Models** page, select the models (pre-defined list) to be calibrated with respect to the calibration basket.

Information	Description
Model	Mathematical model to be calibrated (pre-defined list).
Inputs	<ul style="list-style-type: none"> <li>Beta: The skew parameter of the Spot Skew model.</li> <li>Lambda: The mean reversion of Hull and White, Black Karasinsky.</li> </ul>
Default	Switch on <b>Default</b> if the model selected in the <b>Model</b> field is used by default.

5. Add the model definition to the list by clicking **Add**.
6. Save the single currency calibration model definition using **File - Save As New**.

### 4.7.3 Defining cross-currency calibration models

To set up an FX model for a currency pair, you need to define a cross-currency valuation model by combining single currency calibration models (as defined in Calibration Single Editor).

Cross currency valuation models are defined in Calibration Cross Editor. The editor layout is based on the application Static Data Editor (see *3.2 Static Data Editor* on page 41 for more information).

To define a cross currency valuation model:

1. In Calibration Cross Editor, enter the main attributes for the model in the upper part of the editor.

Information	Description
ID & Name	Unique identifier and name for the cross currency calibration model.
Recalibrate	Switch on if recalibration is required for the calculation of IR exposure. The default setting is non-calibration of the model.
Exclude from calibration activity	Switch on to exclude the model during execution of the NumeriX Calibration activity. See <i>A.52 NumeriX Calibration</i> on page 649.



2. In Calibration Cross Editor's **Map** page, specify the values to determine the calibration basket's instruments, using the information in the following table:

Information	Description
Underlying 1	ID of the domestic model used in the FX calibration.
Underlying 2	ID of the foreign model in the FX calibration.
Yield Curve 1	ID of the domestic yield curve used in the FX calibration.
Yield Curve 2	ID of the foreign yield curve in the FX calibration.
FX Estimation Curve 1	ID of the domestic currency used to forecast FX rates.
FX Estimation Curve 2	ID of the foreign currency used to forecast FX rates.
Basket 1	ID of the basket instrument corresponding to the FX instrument.
Basket 2	ID of the second basket which can be used for the calibration if <b>Basket 1</b> contains insufficient instruments and it has been defined with a <b>Reference Date</b> .

---

**Note:** If the **FX Estimation Curve** field is empty, the value in the **Yield Curve** field is used. If both fields are empty, the value in the **Underlying** field is used. The values in the **Yield Curve** and **Underlying** fields are specified in Calibration Single Editor.

---

3. In Calibration Cross Editor's **Models** page, select the models (pre-defined list) to be calibrated with respect to the calibration basket.

Information	Description
Model	Mathematical model to be calibrated (pre-defined list).
Default	Switch on <b>Default</b> if the model selected in the <b>Model</b> field is used by default.

The number of calibration models you need to set up to create a cross-currency valuation model depends on the number of currencies you want to include:

- For 2-currency calibration you need to set up three calibration models
- For 3-currency calibration you need to set up five calibration models
- For 4-currency calibration you need to set up seven calibration models.

4. Save the cross currency valuation model definition using **File - Save As New**.

---

**Note:** When you set up a cross-currency valuation model, you always need to set up the domestic currency first. Moreover, the current version of NumeriX only supports the combination of a single-factor model, that is, you cannot create a cross currency model when the IR model in one currency is a two-factor model.

---

#### 4.7.4 Defining BGM calibration models

The procedure to set up a BGM (Brace Gatarek Musiela) calibration model differs slightly from the procedure described in the previous sections. Due to the high volume of calibration output for BGM, this is the only model where the output of the calibration is not shown.

The correlation between increments for the gap set of Libor is used as input for the calibration of the BGM calibration model. You define the correlation in the Calibration BGM page of Calibration Monitor.

The parameters you need to fit are the volatility of the Libor process, as well as the correlations between the Brownian motion spanning the Libor's processes.

See 4.7.6.2 *Calibrating a BGM model* on page 198.

BGM calibration models are defined in Calibration BGM Editor. The editor layout is based on the application Static Data Editor (see 3.2 *Static Data Editor* on page 41 for more information).

To define a BGM calibration model:

1. In Calibration BGM Editor, enter the main attributes for the model in the upper part of the editor.

Information	Description
ID & Name	Unique identifier and name for the BGM calibration model.
Currency	Currency attached to the model.
Yield Curve	Yield curve used for the calibration.
Factor	Number of factors of the BGM model.
Calculation Option	Option used to speed up the BGM model while pricing Backward (but will increase the use of the memory). Choose from: Use LIBOR Cache or Conserve Memory.
Volatility Type	Type of volatility used in the calibration of Libor. The possible choices are: <ul style="list-style-type: none"> <li>• General - no parametric form. This type is recommended when there are several instruments in the Calibration basket.</li> <li>• Composite - allows a time dependent component as well as an individual movement parameter for each Libor.</li> <li>• Flat Volatility - this is a combination of a volatility module and a direction component. The volatility module consists of a scalar volatility function. The direction component consists of unit-norm vectors that define instantaneous correlations between forward Libors.</li> </ul>
Correlation Type	The type of correlation when type <b>Volatility Type</b> = Flat Volatility.
Weight Type	If the weights are not defined at instrument level, you can select one of the following available NumeriX options: Uniform, Vega, Inverse Price, or Square Inverse Price.
Offset	Percentage value by which the yield curve should be shifted before recalibration. If the offset is defined, then the system recalibrates the model. If it is not defined, recalibration is not done.
Recalibrate	Switch on if recalibration is required for the calculation of the model.
Exclude from calibration activity	Switch on to exclude the model during execution of the NumeriX Calibration activity. See A.52 <i>NumeriX Calibration</i> on page 649.

2. In Calibration BGM Editor's **Basket** page, enter the values to define any time dependent calibration basket instruments.

Information	Description
Active From Active To	The date range within which the basket defined in the <b>Basket</b> field is active (see next). Leave these fields blank if you want the basket to apply indefinitely.
Basket 1	Basket of instruments used to define the calibration instruments for a Swaption matrix, for example.
Basket 2	Second basket which can be used for the calibration if <b>Basket 1</b> contains insufficient instruments and it has been defined with a <b>Reference Date</b> . This may be required, for example, if you want to calibrate against Swaptions and Caplets.

3. Save the BGM calibration model definition using **File - Save As New**.

## 4.7.5 Calibration Monitor

You can calibrate, view, and modify the outputs of the calibration parameters in Calibration Monitor. Calibration Monitor is a special Rate Monitor mode, designed specifically for calibrating pricing models.

---

**Note:** Before using Calibration Monitor, the yield curves, as well as the IR and FX volatilities have to be set up in Rate Monitor. You must also create a volatility surface in Volatility Reference Editor before you can enter volatility rates for an instrument.

---

### 4.7.5.1 Calibration Monitor menus

The menu items in Calibration Monitor are basically the same as the menu items in Rate Monitor (see 4.5.1 *Rate Monitor menus* on page 171). The exceptions are described in the following tables.

#### 4.7.5.1.1 Page

Menu item	Description
New Page	<p>Adds a new page with the default layout. Select from:</p> <ul style="list-style-type: none"> <li>• Calibration Calibration pages allow you to select the calibration models you want to use and to view the output of the calibration.</li> <li>• Calibration BGM Calibration BGM pages allow you to input the correlation for the BGM model and to launch the calibration. The axis of the correlation matrix corresponds to the gap set defined as the <b>Correlation Gap</b> in Calibration BGM Editor.</li> <li>• Volatility Volatility pages allow you to select and view the calibration basket you want to use in the calibration process.</li> </ul> <p>Note that you can see the instruments which are part of the calibration basket in this page. However, you cannot add or remove an instrument from a basket. This is only possible in Calibration Basket Editor.</p>

#### 4.7.5.1.2 Commands

Menu item	Description
Calibrate	Calibrates the pricing model according to the parameters you have defined.

#### 4.7.5.1.3 Toolbar

Toolbar button	Description
Toggle Realtime Updates	<p>Displays realtime updates in the monitor if this button is enabled on the toolbar.</p> <p>Note: After the calibration, you must refresh the view using <b>Page - Refresh</b> before you can see the updated value.</p>

### 4.7.5.2 Start-up parameters

The start-up parameter used to open Rate Monitor's Calibration mode is:

```
FKMonitor.exe --service calibration-board
```

See C.8 *Rate Monitor* on page 683 for more information.

### 4.7.5.3 Customizing Calibration Monitor

You can configure Calibration Monitor according to your personal preferences by creating a page or groups of pages and saving them in a layout in the same way as in Rate Monitor. You select the values you want to be displayed in each page of the layout.

You can create and save the layouts either for your own personal use, or to be shared by other users.

#### 4.7.5.3.1 Configuring layouts

To configure a layout in Calibration Monitor:

1. Select **Page - New Page** and the specific page you want to configure.

A new page with the default layout displays.

2. Right-click the page tab and select **Setup**.

A dialog (similar to the **Setup** dialog in Rate Monitor) displays in which you can select and configure the values you want to view.

3. In the dialog, set up the horizontal and vertical axes as follows:

- For each axis, select the values you want to see.
- Right-click an item and select **Configure**.

You can configure an item even if it is not in the **Selected** list.

You can also configure an item directly by right-clicking on the corresponding axis. For example, if you only want to set up the date range, right-click the date and select **Configure this axis**. The **Date** dialog displays.

The following table describes the values you can configure:

Value	Description
Baskets	In a <b>Volatility</b> page, allows you to select the basket of instruments (defined in Calibration Basket Editor) you want to use in the calibration procedure.
Calibrations	In a <b>Calibration</b> page, allows you to select a single or cross currency calibration model to use in the calibration procedure.
Dates	Start and End Date for the period you want to calibrate. Switch on <b>Start/End dates only</b> if you want to view the quotations for two separate dates, instead of for a date range. Note that if you save date information in the layout, this is applied each time you use the layout.
Figures	Figures that you want to display. These differ slightly according to the type of page you are configuring: see 4.7.5.3.2 <i>Calibration Monitor key-figures</i> on page 197.
Instruments	In a <b>Calibration</b> page, displays the liquid instruments used in the basket of instruments.
Models	In a <b>Calibration</b> page, displays the mathematical model (pre-defined list).
Offsets	Normal, Down, or Up The system calculates the calibration parameters for the non offset, the up offset, and the down offset for each scenario and subscenario.

Value	Description
Periods Periods 1 Periods 2 Periods (ref)	Displays the periods of the calibration. <ul style="list-style-type: none"> <li>In a <b>Volatility</b> page, the period (or periods) for which you want to view the calibration. <ul style="list-style-type: none"> <li>Period 1 corresponds to the Underlying Period that is used in the definition of the volatility reference.</li> <li>Period 2 is used to enter the strike (volatilities).</li> </ul> </li> <li>In a <b>Calibration BGM</b> page: <ul style="list-style-type: none"> <li>Periods (ref) displays the reference date.</li> </ul> </li> </ul>
Processes	In a <b>Calibration</b> page, displays the ID of the calibration process (pre-defined list).
Scenarios	Scenario from which you want to retrieve the rates. If you select more than one scenario, you must select <b>Scenario</b> for one of the axes to display all the rates.
Subscenarios	Subscenario you want to use to retrieve the rates. If you select more than one subscenario, you must select <b>Subscenario</b> for one of the axes to display all the rates.

Note that in a **Calibration** page, calibrations, models, instruments, and processes must all be selected on the same axis (horizontal or vertical), and in this exact sequence.

- Repeat the procedure to configure each item as necessary.

**4.** Click **OK** to close the axes setup dialog.

Calibration Monitor displays the page with the settings you have configured.

#### 4.7.5.3.2 Calibration Monitor key-figures

The following table describes the key-figures in Calibration Monitor's **Calibration** page:

Figure	Description
Alpha	Parameter used to define the shape of the smile in the Heston model. Note: This figure is not yet implemented.
Mean Reversion	The mean reversion of the Process. Used for Black Karasinsky, Hull and White, Spot Skew, Black-Derman-Toy.
Model Correlations	(For FX models) Correlations between models used as inputs for cross currency calibrations.
Offset	The offset to be used for the calibration.
Process Correlations	Correlations between the processes of a given model. These are the outputs for the calibration.
Max Date	The maximum date required as input for the calibration of Spot Skew, Black-Derman-Toy, or Black-Karasinsky.
Skew	The Beta skew parameter is used in the Spot Skew model.
Theta	Parameter of the volatility processes in the Heston model. Note: This figure is not yet implemented.
V0	Initial value of the local volatility in the Heston and SABR models. Note: This figure is not yet implemented.
Volatility Max Date	Output volatility corresponding to the maximum date.

Figure	Description
Volatility	The Sigma (short rate) volatility is used in the process.
Volatility (time dependent)	The time-dependent Sigma (short rate) volatility is used in the process.

The following table describes the key-figures in Calibration Monitor's **Calibration BGM** page:

Figure	Description
Correlations	The gap set defined as the Correlation Gap for the model in Calibration BGM Editor.

The following table describes the key-figures in Calibration Monitor's **Calibration Volatility** page:

Figure	Description
Ask	The ask quote, expressed in terms of percentage.
Bid	The bid quote, expressed in terms of percentage
Used	The character which specifies if an instrument is part of the basket.

## 4.7.6 Calibrating pricing models

You can either calibrate pricing models manually in Calibration Monitor, or use activities to calibrate the pricing models automatically.

### 4.7.6.1 Manual calibration

To calibrate the pricing models manually in Calibration Monitor:

1. In Calibration Monitor, open a **Calibration Volatility** page.
2. Select the ID of the calibration basket which is attached to your model.

Note that you can see the instruments which are part of the calibration basket in this page. However, you cannot add or remove an instrument from a basket. This is only possible in Calibration Basket Editor.

3. Open a **Calibration** page (or **Calibration BGM** page).
4. Select the calibration models you want to calibrate.
5. Select **Commands - Calibrate** to see the calibration output.

The output of the calibration can be visualized in the **Calibration** page by selecting the appropriate key-figures: see 4.7.5.3.2 *Calibration Monitor key-figures* on page 197. For more information about the calibration of a BGM model: see 4.7.6.2 *Calibrating a BGM model* on page 198.

### 4.7.6.2 Calibrating a BGM model

The calibration of a BGM model in the **Calibration BGM** page is done in the same way as described in 4.7.6.1 *Manual calibration* on page 198 using the **Commands - Calibrate** menu option.

In a **Calibration BGM** page, the Correlation matrix is the correlation between the increments of a set of Libors with arbitrary start and end dates. Due to the high volume of calibration output, BGM is the only model where the output of the calibration is not shown.

To define the start and end date of each Libor, you have to define a specific gap set in Gap Editor (see 4.7.4 *Defining BGM calibration models* on page 193).

The start and end point of the Libor is defined by taking the reference date defined in the editor and adding the corresponding gap.

The Effective Correlation values are defined in the **Calibration BGM** page by selecting the appropriate calibration BGM model.

### 4.7.6.3 Automatic calibration

You can calibrate derivative pricing models to market data by batch using an activity. You need to set up one activity to calibrate the model, and another to value the transactions.

1. Use the NumeriX Calibration activity to calibrate the models: see *A.52 NumeriX Calibration* on page 649 for details of the activity's parameters).

You need to run this activity before you run the Valuation activity.

2. Use the NumeriX Valuation activity to value the transactions: see *A.53 NumeriX Valuation* on page 649 for details of the activity's parameters).

Running this activity logs the market value, present value, and local and global probability in the database.

---

**Note:** Activities are set up and managed in Activity Manager: see *Chapter 6 Managing activities* on page 227 for more information.

---

## 4.7.7 Assigning calibration models to instruments

You can assign the calibration models at instrument level so that they are used to price all the instruments' transactions.

To do so, you need to apply two features to the instrument setup: **NumeriX Setup** and **NumeriX Valuation**: see the guide *TRM Instruments: Processing and Calculations* for more information about these features.

## 4.8 Bloomberg interface

Manually entering any data (for instance, an insert of a newly issued bond) can be a time consuming and error prone task. Likewise, for keeping the static data up-to-date, for instance, the update of instruments credit rating. The same applies to client rating updates and corporate actions update.

You can automate all these activities by using Data License interface from Bloomberg, where you can configure, for instance, instrument types, which should be regularly inserted or updated in the system.

All necessary editors and reports are accessible from the Application Manager, for example, in **Middle Office - Market Data Import Management**. All activities are available in Activity Manager.

The following sections provide a more detailed description of all those tools.

### 4.8.1 Interface configuration and usage overview

The following sections summarize which editors and activities need to be configured for the specific actions.

### 4.8.1.1 Editors usage

The following table shows which editors are used to perform specific Bloomberg interface actions.

**Note:** O = Optional and M = Mandatory.

Editor	Interface actions					
	Securities Import	Security List Import	Instrument Update	Clients Update	Corporate Actions Update	Prices Import
Client Subentity Filter				O		
Client Update Request				M		
Corporate Action Update Request					M	
Instrument Subentity Filter	O	O	O			
Instrument Update Request			M			
Provider Field	M	M	M	M		
Provider Field Set	M					
Security Import Request	M					
Security List Request		M				
Security Mapping Rule	M					
Security Mapping Set	M		M			
Value Mapping	O	O	O	O		

**Note:** The Prices Import action is managed in the Market Info Source Editor, see the *TRM System Admin Guide* for more information.

### 4.8.1.2 Activities usage

The following table shows which activities apply to specific Bloomberg interface actions. For more information about these activities, see *Appendix A Activity parameters* on page 627.

**Note:** A = Applicable.

Activity	Interface actions					
	Securities Import	Security List Import	Instrument Update	Clients Update	Corporate Actions Update	Prices Import
Data License Output Processing	A	A	A	A	A	A
Data License Prices						A
Delete Instrument	A					
Import Instrument	A					
Import Security List		A				



Activity	Interface actions					
	Securities Import	Security List Import	Instrument Update	Clients Update	Corporate Actions Update	Prices Import
Update Client				A		
Update Corporate Actions					A	
Update Instrument			A			

## 4.8.2 Generic configuration

The generic configuration of the Bloomberg interface consists of the following steps:

- Define the fields you want to import, see *4.8.2.1 Defining fields for import* on page 201.
- Group fields with a similar meaning and context in Provider Field Sets for easier recognition and to use when loading the instruments, see *4.8.2.2 Defining provider field sets* on page 202.
- Map individual fields to specific destination fields in the system, see *4.8.2.3 Mapping the provider fields to specific system fields* on page 202.
- Filter definitions for Instrument and Client Editor pages (so called sub-entities), see *4.8.2.4 Filtering rows in subentities* on page 204.
- Map the loaded values to system-specific values, see *4.8.2.5 Mapping imported provider values to system values* on page 205.

### 4.8.2.1 Defining fields for import

You must define a record for each provider field you want to import. Data license fields are available in the `fields.csv` file.

You should define only those fields that are essential to your needs in the Provider Field Editor. These field definitions should comply to the provider's convention.

**Important:** It is not necessary to import each record into the Provider Field Editor mainly because of the large size of the file and secondly because only a fraction of these fields can be mapped and used in the system.

To define the fields for the import:

1. In Provider Field Editor, use the following table to complete the main attributes:

**Important:** All of the fields must follow the same convention as the one used by the provider.

Field	Description
ID and Name	The unique identifier and name
Comment	Any additional information that is relevant to the definition.
Data Type	Define what type of data is contained in the field. For example, <b>INTEGER</b> , <b>CHARACTER</b> , <b>DATE</b> , and so on.
Data Type Length	The length of the field.
Provider Type	The name of the provider. Note: In this version, only Bloomberg is supported.

Field	Description
Category	(Information only) The type of data, for example, <b>Security Identifiers, Ratings</b> , and so on.
Subcategory	(Information only) Subcategory of the field.
Security	Switch on to use the field for instrument imports and updates. You will later include these fields in the appropriate data set, see <i>4.8.2.2 Defining provider field sets</i> on page 202.
Client	Switch on to use the field for client updates. You will later include these fields in the appropriate data set, see <i>4.8.2.2 Defining provider field sets</i> on page 202.

- In the **Market Sector** page, add the market sectors where the field has a meaningful value. For example, **Equity, Govt, Corp**, and so on.
- Save the definition using **File - Save As New**.

#### 4.8.2.2 Defining provider field sets

The fields that you defined previously in the Provider Field Editor and that you flagged to be used in instrument imports and updates (switch **Security**) must be grouped in a provider field set. Provider field sets are defined in the Provider Field Set Editor.

Provider field sets are then used in subsequent business logic. For example, each instrument type, such as Equity, might have a dedicated field set, where the fields specific to this instrument type, are grouped together and requested from the provider to properly update or import the instrument.

To define provider field sets for instruments

- In Provider Field Set Editor, use the following table to complete the main attributes:

Field	Description
Name	The name of the provider field set.
Comment	Any additional information that is relevant to the definition.
Provider Type	The name of the provider. Note: In this version, only Bloomberg is supported.

- In the **Provider Field** page, add the provider fields that you want to include in this data set. You can use one provider field in more than one data set.
- Save the definition using **File - Save As New**.

#### 4.8.2.3 Mapping the provider fields to specific system fields

The individual fields must be properly mapped to the specific client or instrument fields (destination) in the system. That is, you need to create sets of mappings for each provider field to determine the corresponding destination field where the data should be inserted.

For instrument updates, the mapping sets, which can be both general and specific, are defined in the Security Mapping Set Editor and then used in one of the security request editors. For client updates, the mapping is done directly in the Client Update Request Editor.

To map the provider fields to specific destination fields:

- In Security Mapping Set Editor, use the following table to complete the main attributes:

Field	Description
Name	The name of the mapping set.

Field	Description
Provider Type	The name of the provider. Note: In this version, only Bloomberg is supported.
Comment	Any additional information that is relevant to the definition.

2. In the **Mapping** page, use the following table to add the mappings to the mapping set:

Field	Description
Entity	The entity of the Instrument Editor to which the provider field should be mapped. Typically, one entity corresponds to one page in the Instrument Editor. In the entity selection box, for each entity, you can see the technical name ( <b>Entity Name</b> column) and the page name ( <b>Label</b> column) as it appears in the Instrument Editor.  For example, <b>UMIRating</b> corresponds to the <b>Credit Ratings</b> page, <b>UMIBond</b> corresponds to the <b>Bond</b> page, and so on.
Entity Column	The column of the selected entity, which is to be populated by the provider field. Typically, one entity column corresponds to a field that appears on the page in the Instrument Editor.  You must first select an entity before you can select an entity column. Only the entity columns for the selected entity are available.
Provider Field	The provider field to be inserted in the Instrument Editor field as defined by the selected entity and entity column.
Subentity Filter	The subentity filter definition you want to use when the selected entity contains a list of possible options, for example, security identifiers, and not just individual fields, you need to uniquely identify the option to establish what exactly needs to be updated. See <i>4.8.2.4.1 Instrument subentities</i> on page 204.
Value Mapping	The value mapping definition that you want to use to do the mapping. Value mapping definitions are used when the provider data (source) do not fit in to the Instrument Editor values (destination), you can create a value mapping definition that defines how the source data should be mapped to the destination field. This mapping is defined in the Value Mapping Editor, see <i>4.8.2.5 Mapping imported provider values to system values</i> on page 205.  Note: Value mapping definitions can be simple or enhanced by the use of regular expressions.  For example, if the provider uses a different name for Date Basis, you need to define a value mapping definition that tells the system how to handle the provider's name for Date Basis.
Script	The script that will be used to do the mapping. Scripts are another way of mapping provider fields to system fields when simple mapping is not sufficient, you can create a simple python script that defines more complex mappings. For example, when a value in the Instrument Editor depends on a combination of two or more provider fields.  Note: Scripts have a higher priority than value mapping definitions and if you have selected both a value mapping definition and a script then the script is used and the value mapping definition ignored.

Field	Description
Client Mapping	<p>Switch on to identify the selected provider field as the ID of client, i.e. <code>ID_BB_COMPANY</code> or <code>ID_BB_PARENT_COMPANY</code>, and so on. During the mapping, the provider field is used to identify the client with the same property value and the corresponding client name is then used in selected entity column.</p> <p>Typically, such a field is used to populate issuer and other client-related fields in the Instrument Editor.</p> <p>You must use the client's unique ID to identify each client and not the client's name because the naming convention may vary between the provider and system. This unique identification is defined at the client level in the Client Editor by adding the property <code>ID_BB_COMPANY</code> with the proper unique ID supplied by the provider to any client that could potentially be using in market data import and update processes.</p>
Periodical Active From	<p>The time limit you want to set for particular entity.</p> <p>Switch on to create a new time limited row in the selected subentity. The first subset of rows is evaluated using the subentity filter. This switch then uniquely identifies the <b>Active From</b> column. The last period that has column <b>Active To</b> bigger than the provider value is searched. This subentity row is closed and a new subentity row is inserted with the <b>Active From</b> column to set to the relevant provider value.</p> <p>This is typically used for time limited setup, in subentities like <b>Credit Rating</b>, <b>Equity Info</b>, and so on.</p>
Periodical Active To	<p>Switch on to define the column <b>Active To</b> in the subentity row. The last record for the specified subentity filter is found and closed by the provider value. A new row from date <b>Active From</b> and with new information fields, like changed Credit Rating, is then entered.</p> <p>This behavior differs when the following situations occur:</p> <ul style="list-style-type: none"> <li>• If the <b>Active From</b> and <b>Active To</b> columns contain the same provider field, then the <b>Active To</b> from the existing row is closed one day before the new row <b>Active From</b> column is entered. This ensures a continuity of time segments without any gaps.</li> <li>• If the data have not changed and the last row contains the same values as the value fetched during update from provider, then no new row is inserted and the existing one stays valid. This is useful when the instrument is regularly updated, but there is no change, for instance, to the credit rating. Then only one credit rating record is inserted and is kept until any changes occur.</li> </ul>
Ignore Mapping When Null	<p>When switched on, any null values in the provider field are ignored and are not inserted into the selected instrument field, i.e. existing previous values in the instrument fields are not overwritten.</p>

3. Save the definition using **File - Save As New**.

#### 4.8.2.4 Filtering rows in subentities

Specific configuration must be done for the data (fields, switches, and so on) contained in Instrument Editor and Client Editor pages. These pages are referred to as subentities. For example, **Security Identifiers** page or **Credit Ratings** page.

Before you can run the import, you must first uniquely identify the destination row using the appropriate subentity filter, and then map the provider fields to the proper column on the selected row.

Subentity filters for the Instrument Editor are defined in the Instrument Subentity Filter Editor (see 4.8.2.4.1 *Instrument subentities* on page 204) and subentity filters for the Client Editor are defined in the Client Subentity Filter Editor (see 4.8.2.4.2 *Client subentities* on page 205).

##### 4.8.2.4.1 Instrument subentities

To filter rows in instrument subentities:

1. In Instrument Subentity Filter Editor, use the following table to complete the main attributes:

Field	Description
Name	The name of the subentity filter.
Comment	Any additional information that is relevant to the definition.
Entity	Subentity in the Instrument Editor for which the filter is defined. The activity will update or change only the rows that match the defined filter.

2. In the **Filter Condition** page, use the following table to add filtering conditions:

**Note:** A filter can contain one or more conditions.

Field	Description
Entity Column	Column from the selected subentity.
Value	Value that the selected column must contain to meet the filter condition. Only the rows that match all conditions are populated or changed by the provider data.

3. Save the definition using **File - Save As New**.

#### 4.8.2.4.2 Client subentities

To filter rows in client subentities:

1. In Client Subentity Filter Editor, use the following table to complete the main attributes:

Field	Description
Name	The name of the subentity filter.
Comment	Any additional information that is relevant to the definition.
Entity	Subentity in the Client Editor for which the filter is defined. The activity will update or change only rows that match the defined filter.

2. In the **Filter Condition** page, use the following table to add the filtering conditions:

**Note:** A filter can contain one or more conditions.

Field	Description
Entity Column	Column from the selected subentity.
Value	Value that the selected column must contain to meet the filter condition. Only the rows that match all conditions are populated or changed by the provider data.

3. Save the definition using **File - Save As New**.

#### 4.8.2.5 Mapping imported provider values to system values

It may occur that the provider uses a different naming and value convention than the system does. Therefore, you can map the provider values to the WSS values by defining an easy one-to-one translation. This mapping is done in the Value Mapping Editor. Value mapping definitions map the possible values of provider fields to the corresponding system values.

To map provider values to system values:

1. In Value Mapping Editor, use the following table to complete the main attributes:

Field	Description
Name	The name of the value mapping set.
Comment	Any additional information that is relevant to the definition.

2. In the **Mapped Value** page, use the following table to map values:

Field	Description
Source	Value of the provider field. It is possible to use regular expressions.
Destination	Value of the corresponding system field. It is possible to use regular expressions.
Script	The script that will be used to do the mapping. Scripts are another way of mapping provider fields to system fields when simple mapping is not sufficient, you can create a simple python script that defines more complex mappings. For example, when a value in the Instrument Editor depends on a combination of two or more provider fields.
Priority	The priority of the mapping. When a regular expression is used, it may arise that source or destination values match more than one mapping. In which case, the mapping with the highest priority is used.
Regular Expression	Switch on to indicate that source or destination values contain regular expressions. When this switch is off, the content of these columns is assumed to be string values without any regular expressions.
Convert Value to UPPERCASE	Switch on to convert the destination value to UPPERCASE.

3. Save the definition using **File - Save As New**.

### 4.8.3 Security import

You can configure updates to securities to run periodically by using the appropriate activities.

#### 4.8.3.1 Configuring security import requests

After you have done the generic configuration, you must specify which securities need to be requested from the provider and which new instruments need to be created for these securities. These actions are referred to as requests. You configure these requests in the Security Import Request Editor. You can also specify which provider fields should be requested in the same editor.

For more information about the generic configuration, see *4.8.2 Generic configuration* on page 201.

To configure security import requests:

1. In Security Import Request Editor, use the following table to complete the main attributes:

Field	Description
Name	The name of the security import request.
Comment	Any additional information that is relevant to the definition.
Provider Type	The name of the provider. Note: In this version, only Bloomberg is supported.

Field	Description
Security List Request	(Read only) The original security list request that was used to create this security import request. You can define the list of securities to be imported as instruments in the Security List Request Editor by selecting the provider field sets that should be used with a given security list request. See <i>4.8.4 Security list import</i> on page 210.

2. In the **Provider Field Set** page, use the following table to indicate which field set to use:

Field	Description
Field Set	The names of the provider field sets that you want to use to first request information from the provider and then later to import the new instruments. All selected fields sets will be requested from the provider.  Provider field sets are defined as part of the general configuration in the Provider Field Set Editor, see <i>4.8.2.2 Defining provider field sets</i> on page 202.

3. In the **Securities** page, use the following table to map values:

Field	Description
Security Identifier Type	The type of security code that is specified in the field <b>Security Identifier</b> . Securities can be requested via any unique identifier, ISIN, CUSIP, and so on. You must comply to the provider's naming convention when defining security identifiers in the system, for example, TICKER.
Security Identifier	The security identifier code. This code must be unique and recognized by the provider in order to retrieve the correct information about this security.
Market Sector	The market sector of the requested security. Identifying the market sector may increase processing on the provider's side when searching for the requested security.
Field 0-9	(Read only) These fields are automatically populated when the list of securities in this page were previously created by a security list request. These fields are information requested in the security list processing and can be used to more easily identify a security, for instance, by its coupon, issuer, maturity date, and so on, and decide whether the security should be inserted as new instrument.
Do not import	Switch on to indicate that the security should not be loaded. This is particularly useful when one security import request is processed in several rounds, for example, when you are fine tuning individual mappings. Some of the listed securities could be inserted as instruments, so they should not be processed again. However, there are still other not yet inserted instruments, for which mapping must be still adjusted, in which case, the switch must be on for each already imported security.  In addition, you may decide, based on additional information in the fields 0 to 9, that you do not want to import the security, in which case, you would set this switch to on.

#### 4.8.3.2 Identifying instrument templates

After you have processed the security import request that you created previously, the provider sends back all requested information about the security. Before you can import the securities as new instruments, you need to have defined which instrument template you want to use. You cannot import any security without the instrument template because the instrument setup contains a lot of configuration, which is specific to the system and which the provider cannot supply. Without this instrument setup, it is not possible to store or use the received security from the provider. Instrument templates are created in the Instrument Template Editor. For more information about instrument templates, see *3.18 Instrument Templates* on page 128.

Mapping rules should uniquely identify an instrument type and the instrument template to be used.

**Hint:**

You can also specify the naming convention for the new instruments in the Mapping Rule Editor.

1. In Security Mapping Rule Editor, use the following table to complete the main attributes:

Field	Description
Name	The name of the security import request.
Comment	Any additional information that is relevant to the definition.
Provider Type	The name of the provider. Note: In this version, only Bloomberg is supported.
Instrument Template	Instrument template, which would be used to create the new instrument when this mapping rule is selected based on mapping conditions and priority.
Instrument ID	Instrument ID of the created instrument. Define the naming convention to be used for this particular instrument ID. You can use variables - provider fields. These variables could then be replaced by the real value of the provider field. If the selected field does not contain any value, the variable will not be replaced and it will stay in the name as a string.  It is important that you change the name manually, verify the naming convention, and use a different provider field to be sure to return the proper values.  A variable always starts with \$ and is then followed by the provider field between parentheses, for example \${CPN}. For example, this indicates that the naming convention Bond_\${COUNTRY}_\${MATURITY}_\${CPN} can be replaced by Bond_CZ_01012010_5.2 in the Instrument ID.  Note: A special business logic has been implemented to remove the trailing zeros from ID or name when the variable \$CPN is used.
Instrument Name	The instrument name of the imported security. It is also possible to use variables as described for Instrument ID.
Pre-save script	The Python script that is called before the instrument is created. You can use the script to modify the provider fields and perform any additional tasks before the instrument is created.
Post-save script	The Python script that is called after the instrument is created and stored. You can use the script to perform additional tasks after the instrument is created.
Priority	The priority of this mapping rule. If more than one mapping rule matches the condition set, then the one with the highest priority (meaning the lowest number) is used. If there are more mapping rules with the same priority, a warning is raised and a random rule is selected.

2. In the **Rule Mapping Set** page, add the mapping sets that you want to use to import the new instruments. All selected mapping sets will be used to map the provider fields to the system fields. All fields needed for mapping must be first mapped in a security mapping set and requested in a security import request. See 4.8.2.3 *Mapping the provider fields to specific system fields* on page 202.

If these conditions are not met, then the following behavior occurs:

- If some of the fields are not requested then no corresponding provider information is returned and the mapping rule is not performed. No warning is displayed.
- If you have not defined a mapping for a requested field, a message is displayed.



**Important:** An error message is displayed only when the instrument cannot be stored because some of the mandatory fields are missing. You can check this type of error in the generated log file, as described in *4.8.3.4 Verifying the import process* on page 209.

**Hint:** For this type of error, it is necessary to either add the missing fields and map them to the interface setup or update the instrument template with the missing information.

3. In the **Rule Condition** page, use the following table to set up the rule conditions:

Field	Description
Provider Field	The provider field to which you want to match a field value.
Operator	<p>The operator to be used in the condition. Choices are:</p> <ul style="list-style-type: none"> <li>= - The specified provider field must contain a value that exactly matches the specified field value.</li> <li><b>MATCH</b> - The specified provider field must contain a value in the specified regular expression. For example: <ul style="list-style-type: none"> <li>A B means that the specified provider field equals A or B</li> <li>A.* means that the specified provider field starts with A</li> <li>^(?!GOVT).* means that the specified provider field should not match GOVT.</li> </ul> </li> </ul> <p>If you insert more than one rule condition then the system interprets a logical AND operator between the rule conditions.</p> <p>For example, if you enter <code>ISSUER = TREASURY</code> as one rule condition and <code>COUNTRY = US</code> as another rule condition in the same mapping rule then both rules must be matched.</p>
Field Value	<p>The value that the provider field must contain or match. The maximum length of the value is 255 characters.</p> <p>Note: This field is case sensitive.</p>

4. Save the definition using **File - Save As New**.

#### 4.8.3.3 Running the Instrument Import activity

To import the securities and create new instruments, you need to run the activity **Import Instrument**. See *A.44 Import Instrument* on page 646.

You can run this activity for the same Security Import Request several times. You can change the list of security codes and tune the mappings and mapping rules in order to insert instruments with all the needed setup populated.

#### 4.8.3.4 Verifying the import process

You can verify the import instrument process by checking the Instrument Import Log or report. The Instrument Import Log shows all imported new instruments and processing details. You can filter information based on message types or severity levels. You can, for instance, view only all ERRORS in order to be able to fix the problems.

For more information about this log and report, see *B.30 Instrument Import Log* on page 670 and *B.31 Instrument Import Report* on page 670.

**Note:** Typically, at the beginning of the configuration process, for a new instrument type, you should also monitor information and warning messages, to check whether all mappings and rules are configured properly.

### 4.8.3.5 Processing Instrument Delete activity

It may happen, for example, during implementation and configuration phase, that not all mappings and mapping rules are tuned correctly. Any wrong setup can result in the creation of new instruments that are wrongly configured, do not have the proper name, use the wrong instrument template, and so on.

In order to alleviate the work involved in deleting these instruments, you can use the activity **Delete Instrument**. For a detailed description of parameters, see *A.21 Delete Instrument* on page 635.

**Important:** Only instruments created by the activity **Import Instruments** that are not used in any transaction are deleted.

**Hint:** You can verify the outcome of the activity in the Instrument Delete Log.

## 4.8.4 Security list import

You can configure updates to security codes, for regularly issued instruments, such as, government bonds, to run periodically by using the appropriate activities. The Data License API provides a possibility to request the list of securities that match the selection criteria.

**Note:** A detailed description of the conditions and queries supported by the API is available in the provider's API documentation.

### 4.8.4.1 Configuring security list requests

After you have done the generic configuration, you must specify further configuration in the Security List Request Editor. For more information about the generic configuration, see *4.8.2 Generic configuration* on page 201.

To configure security list requests:

1. In Security List Request Editor, use the following table to complete the main attributes:

Field	Description
Name	The name of the security import request.
Comment	Any additional information that is relevant to the definition.
Provider Type	The name of the provider. Note: In this version, only Bloomberg is supported.
New Security Request	The name of the security request, which is created, based on the output of the security list activity processing. If the security request does not exist, it is created. If it exists, it is replaced by the new list of securities and field sets, as defined in the security list import request.
Macro Type	The type of macro that is called to obtain the list of securities. Note: Refer to the provider documentation for a detailed description of possible values.
Macro Value	The value of the macro type that is called to obtain the list of securities. Note: Refer to the provider documentation for a detailed description of possible values.
Security Type	The security type that is called to obtain the list of securities. Note: Refer to the provider documentation for a detailed description of possible values.

Field	Description
Secondary Qualifier	The secondary qualifier that is called to obtain the list of securities. Note: Refer to the provider documentation for a detailed description of possible values.
Security Identifier Field	The provider field that will be assumed as the security code and added to the list of securities in the security import request.
Security Identifier Type	The mapping of the Security Identifier field to the list of security codes defined in Security Identifier Type Editor. See 3.44 Security identifier types (optional) on page 154
Pre-save Script	Python script that is called before the security request is created. You can use the script to modify the provider fields and perform any additional tasks before the instrument is created.
Post-save Script	Python script that is called after security request is created and stored. You can use the script to perform additional tasks after the creation.

2. In the **Fields** page, use the following table to indicate which fields to use:

Field	Description
Field 0 - 9	You can define which provider fields will be fetched for the list of securities defined by security list conditions. This more detailed information rather than just using the security code is used in the Security Import Request Editor to help you to determine whether the security should be imported. You can select any provider field defined in the system.

3. In the **Provider Field Set** page, use the following table to indicate which fields to use:

Field	Description
Field Set	The names of the provider field sets that you want to use to first request information from the provider and then later to import the new instruments. All selected fields sets will be requested from the provider.  Provider field sets are defined as part of the general configuration in the Provider Field Set Editor, see 4.8.2.2 Defining provider field sets on page 202.

4. Save the definition using **File - Save As New**.

#### 4.8.4.2 Running the Security List Import activity

To import the security list and create a new security import request, you need to run the activity **Security List Import**. See A.46 Import Security List on page 647.

You can run this activity for the same Security List Import Request several times. The activity enables you to fine tune and change the security list query.

#### 4.8.4.3 Verifying the import process

You can verify the import process by checking the log, Security List Import Log. For more information, see B.44 Security List Import Log on page 677.

The Security List Import Log shows all of the processing details. You can filter information based on message types or severity levels.

#### 4.8.5 Instrument update

You can identify which instruments should be regularly and automatically updated by new market data by defining an Instrument Update Request and processing it periodically by running the **Update**

**Instrument** activity. For example, when you need to update credit ratings, repayment schedules, equity info data, and so on.

#### 4.8.5.1 Configuring instrument update requests

After you have done the generic configuration, you must also configure the Instrument Update Request Editor. For more information about the generic configuration, see *4.8.2 Generic configuration* on page 201.

To configure instrument update requests:

1. In Instrument Update Request Editor, use the following table to complete the main attributes:

Field	Description
Name	The name of the instrument update request.
Comment	Any additional information that is relevant to the definition.
Provider Type	The name of the provider. Note: In this version, only Bloomberg is supported.
Pre-save Script	The Python script that is called before the instrument is updated. You can use the script to modify the provider fields and perform any additional tasks before the instrument is updated.
Post-save Script	The Python script that is called after the instrument is updated and stored. You can use the script to perform additional tasks after the update.

2. In the **Mapping Set** page, use the following table to indicate which mapping sets to use:

Field	Description
Mapping Set	The mapping set that contains the mapping of the provider fields to the instrument fields, used to update the instrument.  All selected mapping sets will be used for the mapping of the fields. All required fields for these mappings must be defined in field sets, and requested in the instrument update request. If some of the fields are not requested and provider therefore does not return the value, then the mapping is not performed and no warning is raised.  On the other hand, when there is no mapping for the requested field, an information message is shown.

3. In the **Instrument** page, use the following table to indicate which instruments to use:

Field	Description
Instrument Group	List of instrument groups that should be updated.
Instrument	List of instruments that should be updated.

4. In the **Provider Field Set** page, use the following table to indicate which field sets to use:

Field	Description
Field Set	The names of the provider field sets that you want to use to first request information from the provider and then later to update the instruments. All selected fields sets will be requested from the provider.  Provider field sets are defined as part of the general configuration in the Provider Field Set Editor, see <i>4.8.2.2 Defining provider field sets</i> on page 202.

5. Save the definition using **File - Save As New**.

## 4.8.5.2 Running Instrument Update activity

In order to update the instruments, you must run an activity with activity type Update Instrument. You can run the activity for the same Instrument Update Request regularly.

For more information, see *A.71 Update Instrument* on page 657.

### 4.8.5.2.1 Verifying the instrument update process

You can verify the update process by checking the Instrument Update Log and Report. In the Instrument Update report you can see all updated instruments. In the Instrument Update Log, you can monitor all processing details. You can filter information based on message types or severity levels. You can, for instance, view only all ERRORS in order to quickly identify and fix the problems.

For more information about this log and report, see *B.32 Instrument Update Log* on page 671 and *B.33 Instrument Update Report* on page 671.

---

**Note:** Typically, at the beginning of the configuration process for a new instrument type, you should also monitor information and warnings messages to check whether all mappings and rules are configured properly.

---

## 4.8.6 Client update

You can define which clients should be periodically and automatically updated by new market data. Typically, it is usually necessary to update client credit ratings.

### 4.8.6.1 Configuring client update

After you have done the generic configuration, you must also ensure that clients are identified by a unique id for a proper identification of clients at the provider side. For more information about the generic configuration, see *4.8.2 Generic configuration* on page 201.

For the Bloomberg provider, you must use the property `ID_BB_COMPANY` in the Client Editor (**Property** page). You must populate the value with the unique id of the provider, for instance, `ID_BB_COMPANY` or `ID_BB_PARENT_COMPANY`. For more information about client properties, see *3.13.1.3 Defining properties* on page 93.

Other setup must be configured in Client Update Request Editor.

To configure client update:

1. In Client Update Request Editor, use the following table to complete the main attributes:

Field	Description
Name	The name of the instrument update request.
Comment	Any additional information that is relevant to the definition.
Provider Type	The name of the provider. Note: In this version, only Bloomberg is supported.
Pre-save Script	The Python script that is called before the client is updated. You can use the script to modify the provider fields and perform any additional tasks before the client is updated.
Post-save Script	The Python script that is called after the client is updated. You can use the script to perform additional tasks after the update.

2. In the **Client** page, specify the list of clients for which new market data should be fetched and updated.

3. In the **Mapping** page, use the following table to specify the individual provider fields' mappings to the Client Editor fields:

Field	Description
Entity	The entity of the Client Editor to which the provider field should be mapped. Typically, one entity corresponds to one page in the Client Editor. In the entity selection box, for each entity, you can see the technical name ( <b>Entity Name</b> column) and the page name ( <b>Label</b> column) as it appears in the Client Editor. For example, <b>ClientContact</b> corresponds to the <b>Contact Details</b> page, <b>ClientAccount</b> corresponds to the <b>Accounts</b> page, and so on.
Entity Column	The column of the selected entity, which is to be populated by the provider field. Typically, one entity column corresponds to a field that appears on the page in the Client Editor. You must first select an entity before you can select an entity column. Only the entity columns for the selected entity are available.
Provider Field	The provider field to be inserted in the Client Editor field as defined by the selected entity and entity column. All fields mentioned in the Client Update Request Editor are automatically requested from the provider, i.e. it is not necessary to specify a field set as in the Security Import Request Editor.
Subentity Filter	The subentity filter definition you want to use when the selected entity contains a list of possible options and not just individual fields, you need to uniquely identify the option to establish what exactly needs to be updated. See 4.8.2.4.2 <i>Client subentities</i> on page 205.
Value Mapping	The value mapping definition that you want to use to do the mapping. This mapping is defined in the Value Mapping Editor, see 4.8.2.5 <i>Mapping imported provider values to system values</i> on page 205. Note: Value mapping definitions can be simple or enhanced by the use of regular expressions.
Script	The script that will be used to do the mapping. Scripts are another way of mapping provider fields to systems fields when simple mapping is not sufficient, you can create a simple python script that defines more complex mappings. For example, when a value in the Client Editor depends on a combination of two or more provider fields. Scripts have a higher priority than value mapping definitions and if you have selected both a value mapping definition and a script then the script is used and the value mapping definition ignored.
Periodical Active From	Switch on to create a new time limited row in selected subentity. The first subset of rows is evaluated using the subentity filter. This switch then uniquely identifies the <b>Active From</b> column. The last period that has column <b>Active To</b> bigger than provider value is searched. This subentity row is closed and a new subentity row is inserted with <b>Active From</b> column to set to provider value. This is typically used for time limited setup, such as <b>Credit Rating</b> and so on.

Field	Description
Periodical Active To	<p>Switch on to define column <b>Active To</b> in the selected subentity row. The last record for specified subentity filter is found and closed by the provider value. A new row from date <b>Active From</b> and with new information fields, like changed Credit Rating, is then entered.</p> <p>This behavior differs when the following situations occur:</p> <ul style="list-style-type: none"> <li>• If the <b>Active From</b> and <b>Active To</b> columns contain the same provider field, then the following convention is used, the <b>Active To</b> from the existing row is closed one day before the new row <b>Active From</b> column is entered. This ensures a continuity of time segments without any gaps.</li> <li>• If the data have not changed and the last row contains the same values as the value fetched during update from provider, then no new row is inserted and the existing one stays valid. This is useful when the instrument is regularly updated, but there is no change, for instance, to the credit rating. Then, only one credit rating record is inserted and kept until any changes occur.</li> </ul>
Ignore Mapping When Null	<p>When switched on, any null values in the provider field are ignored and are not inserted into the selected instrument field, i.e. existing previous values in the instrument fields are not overwritten.</p>

4. Save the definition using **File - Save As New**.

#### 4.8.6.2 Client entity state

When SDM is installed in the client environment, then the client entity is in one of the possible entity states. In order to be able to find the client and perform an update on it, it is necessary for the client to have been in the FINAL state at least once.

The Update Client activity then finds the client, re-opens it in order to perform the update operation, and then moves the client either back to its original state (state of the client before the update operation was performed) or to the state defined by the environment variable `FK_MDI_UPDATE_CLIENT_TO_STATE`, depending on which of these states was earlier.

This can be useful, for instance, in a situation where a manual verification still needs to be done after the automatic Update Client activity on clients is performed. Then, all updated clients can be moved to the state VERIFY and you can finalize them after you have performed a manual verification.

#### 4.8.6.3 Verifying Client Update Log

You can verify the update process by checking the Client Import Log. In the Client Update Log all processing details are described. For example, you can filter information based on message type or severity level. You can, for instance, choose to view all ERRORS in order to be able to fix the problem.

For more information about this log and report, see *B.11 Client Update Log* on page 663.

---

**Note:** Typically, at the beginning of the configuration process, for a new instrument type, you should also monitor information and warning messages, to check whether all mappings and rules are configured properly.

---

## 4.8.7 Corporate Actions update

You can define which corporate actions should be periodically requested from the provider for the defined list of instruments.

---

**Important:** Only corporate actions for equities are supported.

---

### 4.8.7.1 Configuring corporate actions update

There is no need to define the mapping from the provider data to Instrument Editor fields because the mappings are set by default. All corporate actions are populated in the relevant corporate action page in the Instrument Editor and typically the dedicated activity **Update Corporate Action** must be run to perform the proper changes on transactions, see *A.70 Update Corporate Action* on page 656.

For more information about Equity instruments, see the *TRM Instruments: Processing and Calculations Guide*.

The other setup must be done in the Corporate Action Update Request Editor.

To configure corporate actions update:

1. In Corporate Action Update Request Editor, use the following table to complete the main attributes:

Field	Description
Name	The name of the instrument update request.
Comment	Any additional information that is relevant to the definition.
Provider Type	The name of the provider. In this version, only Bloomberg is supported.
Request Data Type	The corporate action you want to request based on different dates. It can be set to the following values: <ul style="list-style-type: none"> <li>• <b>Effective date</b> - (Default) The day when the corporate action becomes effective. The provider will send all corporate actions that match the effective date and that do not exceed the maximum number of days specified in the <b>Processing Period In Days</b> field.</li> <li>• <b>Entry date</b> - The date when the corporate action was entered into the Bloomberg database. The provider will send all corporate actions that match the entry date that do not exceed the maximum number of days specified in the <b>Processing Period In Days</b> field.</li> </ul>
Processing Period In Days	The number of days backward (offset) you request corporate action information. The default value is 7 days, which is the maximum days backwards for which you can request the information. Before this day, any corporate actions are already unavailable on the provider side.
Pre-save Script	Python script, which is called before the corporate action is updated. It is possible to modify here provider fields and perform any additional tasks before instrument update.
Post-save Script	Python script that is called after the corporate action is updated. It is possible to perform additional tasks.

2. In the **Instruments** page, use the following table to indicate which field sets to use:

Field	Description
Instrument Group	List of the instrument groups for which corporate actions should be requested.
Instrument	List of the instruments for which corporate actions should be requested.



3. In the **Action** page, use the following table to indicate which field sets to use:

Field	Description
Action	<p>The list of actions that should be requested for the list of instruments. When no action is selected, then all actions are requested. You can request any subset of all supported corporate actions.</p> <ul style="list-style-type: none"> <li>• <b>DVD_CASH</b> (cash dividend) - creates an Equity Cash Dividend or Equity Return of Capital record for an Equity instrument (see 4.8.7.2 <i>Return of Capital</i> on page 217).</li> <li>• <b>STOCK_SPLIT</b> (stock split) - creates an Equity Split record for an Equity instrument.</li> <li>• <b>DVD_STOCK</b> (stock dividend) - this action corresponds to two actions in two separate pages, <b>Equity Detachment</b> and <b>Equity Conversion</b> (see 4.8.7.3 <i>Stock Dividend</i> on page 217).</li> <li>• <b>RIGHTS_OFFER</b> (rights offering) - this action corresponds to two actions in two separate pages, <b>Equity Detachment</b> and <b>Equity Conversion</b> (see 4.8.7.4 <i>Rights offering</i> on page 217).</li> <li>• <b>SPIN</b> (spin-off) - creates Equity Detachment record for Equity instrument.</li> </ul>

4. Save the definition using **File - Save As New**.

#### 4.8.7.2 Return of Capital

Return of Capital corporate action is modeled at the provider side as Cash Dividend action, where the field CP\_DVD\_TYP may contain one of the following values:

- 1014=return capital or
- 1015=return capital - adj prc or
- 1016=return capital - adj all.

In such a case, the Return of Capital page is populated by the new record. In other cases, the Cash Dividend page is populated by the new record.

#### 4.8.7.3 Stock Dividend

The Stock Dividend action must be modeled to the system in a special way:

A new instrument is created as a duplicate of the original one and the name is constructed using the name of the original instrument and a suffix with the corporate action unique ID. This naming ensures that the instrument does not already exist. This instrument has most of its setup cleared and its validity is limited only to the corporate action time interval.

On this instrument, the **Equity Conversion** page is populated and the New Equity field is populated with either the name of the original instrument or a completely new instrument, depending on the data obtained from the provider.

The provider only sends the Ticker code, so the prerequisite is that such an instrument exists and that its security code Ticker has been properly configured. It is only then that the activity is able to identify this instrument properly.

On the original instrument, the **Equity Detachment** page is populated by the provider values and the the New Equity field is populated with the name of the newly created instrument.

This setup ensures that after the processing of both activities **Equity Detachment** and **Equity Conversion**, the transactions should properly adjust according to the received corporate actions.

#### 4.8.7.4 Rights offering

Rights offering action is modeled in a similar way to the Stock Dividend action via the **Equity Detachment** and **Equity Conversion** pages. For more information, see 4.8.7.3 *Stock Dividend* on page 217.

### 4.8.8 Prices Import

Prices import is done via the activity **Data License Prices**, which enables you to import prices from Bloomberg. For more information about this activity, see *A.19 Data License Prices* on page 634 and the *TRM System Administration Guide*.

## 4.9 Market Data Status Monitor

The Market Data Status Monitor is an application that provides the status of all Reuters Market Data System (RMDS) subscriptions.

The application can display the following information for each item subscribed:

- The current status of the item as provided by Reuters RMDS
- The time of the last quote
- The actual Market Info detail related to the item (instrument, period etc.).

To refresh the items, click the Refresh button on the toolbar. When an item's status changes, its status cell is updated and it flashes briefly.

---

**Note:** When the Wallstreet Suite Reuters connection is restarted, all previous data is lost.

---

### 4.9.1 Market Data Status pane

This is the main pane in the application which you can open from the **View** menu. This displays each item ID, its status, and the last quote date in columns that can be ordered and moved.

By right-clicking in the column area, you can select which columns are displayed. You can move the columns and sort them to help find the rows that you are interested in.

Right-clicking an item in the list opens a context menu where you can refresh the subscription to that item, which is first unsubscribed from Reuters and then subscribed again. This also gives you the latest price from Reuters.

### 4.9.2 Properties pane

The Properties pane, which you can open from the **View** menu, displays details of the currently selected item in the Main Data Status pane.

You can open multiple Properties panes, and "freeze" each one to a particular item's properties by activating the "pin" icon at the top of the pane.

### 4.9.3 Other panes

Administration panes are available. These are described in the table below.

## 4.9.4 Menus

### 4.9.4.1 View

Menu item	Description
New - Properties	Starts a new Properties pane. See 4.9.2 <i>Properties pane</i> on page 218.
Market Data Status	If this pane is not visible, selecting this option displays it. See 4.9.1 <i>Market Data Status pane</i> on page 218.
(Properties)	If one or more Properties panes are open, they are listed here. Selecting one of them gives focus to that pane.
Administration Views	<ul style="list-style-type: none"> <li>• <b>Log View:</b> Enables you to check the application's log file. Log files are stored on your local drive, and the path is displayed in the information bar at the top of the log pane.</li> <li>• <b>Progress View:</b> Alternatively, you can also access this view by clicking the show progress icon in the right-hand corner of the status bar. This view shows recently performed actions. You can remove all completed operations from the view or set up preferences by clicking the menu and selecting <b>Preferences...</b></li> <li>• <b>Service Statistics:</b> Shows information about the connections and failure reasons. You can refresh statistics, keep them synchronized, or clear them.</li> <li>• <b>System Messages:</b> Shows system messages organized by severity, time, and message. When available, a hint is displayed. You can clear all messages when you have finished checking them.</li> </ul>

### 4.9.4.2 Layout

As well as standard TRM layout functionality, Market Data Status Monitor also provides the following layout options:

Menu Item	Description
Set to Default	Defines the active layout as the default layout.



You create and assign rules as a method of capturing data (such as transactions and individual cashflows) to direct them to the correct place in TRM. Rules define what happens to a transaction (either a deal or a payment) and its cashflows according to their properties.

When you have created the rules, you can use them for many different purposes throughout TRM, for example:

- To define in which bank account a transaction is settled
- To control which transactions can go into a specific portfolio
- To set up trading limits
- To define classification of transactions
- To make contact details for a client appear automatically on trade confirmations
- To specify which transactions or cashflows are to receive a particular charge
- To determine which interests rates are applied to a transaction, according to the amount or currency.

You can even use rules to specify under which circumstances rules should not apply to data.

When the same data matches two or more different rules, the rule with the highest priority is the one that applies, the priority being a number you give to each rule. 1 is the top priority, 2 is the second highest priority, and so on: so the lower the number, the higher the priority. The more restrictive a rule, the higher the priority (lower number) you should give to it.

## 5.1 Defining rules

Currently under development



Rules are defined in Rule Editor, in the Rules page. The application is a layout based on the application Static Data Editor: see 3.2 Static Data Editor on page 41 for more information.

To define the main attributes of a rule:

1. In the upper part of Rule Editor, fill in the fields using the information in the following table:

Information	Description
Rule Name	<p>ID and name of the rule.</p> <p>Rules, unlike other entities, do not need a unique ID. This is because you can create several rules with the same name to produce "or" conditions.</p> <p>For example:</p> <ul style="list-style-type: none"> <li>- If a transaction meets the conditions XXX (Rule A), or</li> <li>- If it meets the conditions YYY (from another rule called Rule A), or</li> <li>- If it meets the conditions XYZ (from a third rule called Rule A)</li> </ul> <p>...then [whatever purpose you assign Rule A to, for example, assigning transactions to a specific bank account].</p>

Information	Description
Domain	Domain in which this rule is available.
Category	<p>Turn on one or more switches to make the rule available in the corresponding editor. You must turn on at least one switch for the rule to appear somewhere in TRM. Choices are:</p> <ul style="list-style-type: none"> <li>• Cashflow Charges: Makes the rule available in the Cashflow Charges Editor.</li> <li>• Closing the Books: Makes the rule available in the Closing the Books Editor.</li> <li>• Limit: Makes the rule available in the Limit Editor for limit management.</li> <li>• Other: Makes the rule available to editors not already identified by the other categories. This rule can be used for various purposes, such as netting rules.</li> <li>• Portfolio: Makes the rule available in the Portfolio Editor, Rules page.</li> <li>• Settlement Instructions: Makes the rule available in the Client Editor, Settlement Instructions page.</li> <li>• System: Only use this category for very general rules, for examples, ones that apply to all cashflows.</li> <li>• Transaction Charges: Makes the rule available in the Transaction Charges Editor or Cashflow Charges Editor.</li> <li>• Transaction Flow: Makes the rule available for the transaction flow.</li> <li>• Transaction Condition Set: Makes the rule available in the Transaction Condition Set Editor for transaction conditions management. See <i>Chapter 17 Managing transaction conditions</i> on page 485.</li> </ul>
Comment	Any comment you want to add about this rule.
Disabled	This rule is disabled, so it returns False when matching.

2. In the **Rules** page, **Definition** area, fill in the following fields:

Information	Description
Name	Enter a meaningful name for the rule subset you are defining.
Number	<p>Number of the rule.</p> <p>This is a number which is automatically generated by TRM: the first rule is 1, the second 2, and so on. Since this number is unique to one rule, it can be useful for identifying individual rules (especially among rules that share the same name).</p>
Priority	<p>Number indicating the priority of a rule: in other words, which rule overrides which, in the event that two conflicting rules apply at the same time.</p> <p>You can view the current order of priority for existing rules by selecting the <b>Priority</b> column as the first display column (or clicking the header area of the <b>Priority</b> column). If several rules match at the same time, TRM applies the rule with the highest priority (lowest number).</p>

3. Click **Add** to add the new rule subset.

4. Save the rule using **File - Save As New**.

5. Complete the rule definition using the information in the following sections.

### 5.1.1 Identifying rule criteria

To specify the criteria to identify to which transactions and cashflows this rule applies:

1. In Rule Editor's **Rules** page, **Optional** area, fill in the fields using the information in the following table.

**Note:** Rules apply only to those transactions and cashflows that match the criteria you provide.

Information	Description
Trader	Trader of the transaction to which the rule applies.
Portfolio Owner	Owner of the portfolio in which the transaction is entered.
Portfolio	Portfolio in which the transaction is entered. If you enter a top portfolio in this field, the rule is also matched against transactions belonging to any of the child portfolios in the portfolio tree.
Instrument Group Instrument	Instrument group and instrument to which the rule applies.
Currency Currency (2)	Currency to which the rule applies.
Package Main Type	Main package type for the package type. You need to select a <b>Package Main Type</b> before you select a <b>Package Type</b> . Package main types are defined in Package Type Editor.
Package Type	Package type of the transaction. Note: Only applies if the transaction is packaged.
Broker	Broker used for the transaction.
Issuer Main Group Issuer Group	Issuer group to which the issuer of the instrument belongs. <b>Issuer Main Group</b> by itself has no effect; its only purpose is to filter the available groups in the <b>Issuer Group</b> field.
Counterparty Main Group Counterparty Group	Client group to which the counterparty of the transaction belongs. <b>Counterparty Main Group</b> by itself has no effect; its only purpose is to filter the available groups in the <b>Counterparty Group</b> field.
Counterparty Portfolio	Counterparty portfolio used for the transaction.
Issuer	Issuer of the instrument used for the transaction.
Counterparty	Counterparty of the transaction.
Transaction Sign Transaction Type	Sign and the type of the transaction to which the rule applies.
Transaction Kind	Kind of transaction: for example, Average Balance, Dividend, or Transfer.
Transaction State	State of the transaction in the transaction flow.
Cashflow Direction	Direction of the cashflow: <ul style="list-style-type: none"> <li>• Positive for incoming cashflows (money you receive)</li> <li>• Negative for outgoing cashflows (money you pay)</li> <li>• Any for both incoming and outgoing cashflows.</li> </ul>
Cashflow Main Type	Main type of cashflow to which this rule applies.

Information	Description
Cashflow Type	Type of cashflow choices depend on the selected main cashflow type. If you do not specify a cashflow type, then this rule will apply to all cashflows of the same <b>Cashflow Main Type</b> which meet the rule criteria. For example, if <b>Cashflow Main Type</b> = <i>Interest</i> , and <b>Cashflow Type</b> is not defined, the rule will apply to all interest flows which meet the rule criteria. Alternatively, if <b>Cashflow Main Type</b> = <i>Interest</i> , and <b>Cashflow Type</b> = <i>Coupon</i> , the rule will only apply to any coupon cashflows which meet the rule criteria.
Cashflow Category	Cashflow category. Choose from: <ul style="list-style-type: none"> <li>• <b>Balance</b> for balance cashflows, for example equity balance cashflows (these are pseudo cashflows)</li> <li>• <b>Payback</b> for cashflows taking place after the value date of the transaction.</li> <li>• <b>Settlement</b> for cashflows taking place on the value date of the transaction.</li> </ul>
Cashflow Subcategory	Cashflow subcategory, for example, Call, Put, or Cap/Floor.
Cashflow Leg Instrument Group Cashflow Leg Group Cashflow Leg	These fields are used for IR swaps and FX transactions only. They represent different ways of selecting one leg from deals matching the rule. For example, use <b>Cashflow Leg Group</b> to set up a generic matching (such as always the first leg of a swap) and <b>Cashflow Leg</b> to set up a more specific matching for specific instruments. <ul style="list-style-type: none"> <li>• For IR swaps: for <b>Cashflow Leg Group</b>, you can select whichever leg you want the rule to capture. For <b>Cashflow Leg</b>, you can select the specific instrument ID of the leg.</li> <li>• For FX transactions: for <b>Cashflow Leg Group</b>, you can select either Far Leg or Spot Leg, depending on which leg you want the rule to capture. For <b>Cashflow Leg</b>, select the currency that the cashflow belongs to.</li> </ul>
Cashflow Currency	Currency in which the cashflow is denominated.
Cashflow Payment Currency	Currency in which cashflows are paid.
Secondary Instrument	This field is used for Security Loan transactions only. The IR or equity secondary instrument of the transaction.

2. Click **Add** to add the new rule subset.
3. Save the rule using **File - Save**.

## 5.1.2 Selecting transaction parameter values

To select transaction parameters to be used in the rule:

---

**Note:** Parameters are defined in Parameter Editor: see *3.38 Parameters (optional)* on page 148.

1. In Rule Editor's **Rules** page, **Parameters** area, define any transaction parameter values that must exist to be picked up by the rule.

---

**Note:** You can also manually add a value even though it is not in the selection list. When you do this, the field name turns blue.

2. Click **Add** to add the new rule subset.
3. Save the rule using **File - Save**.



### 5.1.3 Specifying cashflow attributes

To specify to which type of cashflow the rule applies according to cashflow attribute:

1. In Rule Editor's **Rules** page, **Switches** area, select the attributes that you want to use. If you do not select any attributes, all cashflows are matched.

For a list of attributes see *Appendix F Cashflow attributes* on page 709.

2. Click **Add** to add the new rule subset.
3. Save the rule using **File - Save**.

### 5.1.4 Assigning branch codes to a rule

Currently under development. ...

To assign branch codes (instrument and transaction leg) to which the rule is applied:

---

**Note:** The label which is displayed before each selection list is taken from the name you applied to the branch code in the Branch Code Editor. See *3.24 Branch codes (optional)* on page 133 more information.

---

1. In Rule Editor's **Rules** page, **Instrument Branch Codes** or **Leg Branch Codes** areas, select the branch code for the instrument and transaction leg.
2. Click **Add** to add the new rule subset.
3. Save the rule using **File - Save**.

### 5.1.5 Capturing transactions according to status

Transaction statuses are given to transactions either manually in Transaction Manager, or automatically when the transaction moves from one state to another. If statuses are inherited by a transaction automatically, the status given depends on the state the transaction is coming from and the state it is going to. A transaction can have more than one status.

To capture a transaction according to status:

1. In Rule Editor's **Rules** page, **Switches** area, switch on the transaction status or statuses the transaction must match (or not match) in order to be captured by the rule.
2. Click **Add** to add the new rule subset.
3. Save the rule using **File - Save**.



Some calculations and batch processes must be run on certain dates or at certain time intervals (for example, daily or monthly). In TRM, these calculations and batch processes are called activities and you can set them up to run automatically.

You can use activities to perform a variety of tasks, such as running batches and generating log reports, fixing cashflows, updating modified data in the system automatically, and various other calculations and realizing of key-figures.

You can run activities immediately, at a specific date and time in the future, or at set intervals in relation to a specific date and time (for example, "one week after 1 January 2006, and at weekly intervals thereafter").

In some cases, the running of one activity may be dependent on the outcome of another activity. Therefore, it is possible to specify that one activity needs to run before the other.

Activity groups enable you to run all activities belonging to the same group at the same time. For example, one group may be called "Nightly" and include all activities which need to run each day. Another group may be called "Monthly" and include all activities which need to run on a monthly basis. You can also use an activity group as a search criterion for listing activities and as a grouping criterion in activity reports. Activity groups are predefined in TRM at implementation: you cannot create your own groups.

Many activities execute processes that create new deals or other new information such as accounting entries. These entries are identified with batch IDs, so that you can see when and where they were created. Batch IDs can be used as a parameter to search for generated transactions in Transaction Manager.

The available activities and the their parameters are described in *Appendix A Activity parameters* on page 627.

## 6.1 Activity Manager

Activities are set up and managed in an application called Activity Manager. Activity Manager is similar to an editor, but is based on a different layout.

The upper part of Activity Manager is used to enter the main attributes of the activity. In the lower part of the application, there are three pages; **Parameters**, **Intervals**, and **Log**. These pages are used as follows:

- In the **Parameters** page, you enter the data required to run the activity. The fields displayed in this page differ according to the type of activity you selected in the upper part of the application.
- The **Intervals** page is used define the frequency for running the activity.
- The **Log** page is used to check the running of the activity, how many times it ran, and if it ran correctly.

### 6.1.1 Activity Manager menus

The following tables describe the menu items which are specific to Activity Manager.

Other menu items which are common to all applications are described in *2.2.6 Using application menus* on page 34.

#### 6.1.1.1 File

Menu item	Description
Save	Saves modifications to the activity already defined in Activity Manager.
Save As New	Saves the activity as a new activity.
Delete	Deletes the current activity.
Activate Now	Runs an individual activity immediately.
Activate Group Now	Runs all the currently existing activities in a target activity group immediately.
First Previous Last Next	Goes to the first, the previous, the last, or the next activity in the list of defined activities.
Retrieve	Retrieves the activity from the list of defined activities.
Clear	Clears data from Activity Manager's fields. If the fields have already been cleared, the item is grayed out (unavailable).
Find	Displays activities on the left side of Activity Manager according to any search criteria entered in the fields.

#### 6.1.1.2 View

Menu item	Description
Select Columns	Opens a multi-selection list to enable you to define how the list of defined activities is displayed on the left side of Activity Manager.
Snapshot	Copies the list of defined activities to the clipboard.
Refresh	Refreshes the information displayed in Activity Manager's <b>Log</b> page.

#### 6.1.1.3 Tools

Menu item	Description
Report	Generates a report showing the activities that have been created in Activity Manager. You can also generate a report to see if an activity ran correctly. See <i>6.2.5 Generating reports on activities</i> on page 233.
Running	Displays the running activities. See <i>6.2.4 Checking the running of activities</i> on page 232.

#### 6.1.1.4 Options

Menu item	Description
Confirm Save Confirm Delete Confirm Move	Gives the option to display a warning message to request confirmation of your actions.

### 6.1.2 Start-up parameters

It is possible to alter the start-up parameters so that Activity Manager launches in a different mode. See *C.1 Activity Manager* on page 681 for information about the options available.

### 6.1.3 Activity modes

Activity modes can be used to limit access to certain activities, for example you may only want to permit back-office staff to run certain accounting activities.

The activity mode is included in the start-up parameters of Activity Manager (see *6.1.2 Start-up parameters* on page 229).

Activity modes can be set up for specific users or domains and are defined in Activity Mode Editor by the system administrator: see the *TRM System Administration Guide* for more information.

## 6.2 Managing activities

Although some fields vary from activity to activity, the general procedure for setting up an activity in Activity Manager is always the same.

---

**Note:** Further details about each of the individual activities are described in the section to which they apply.

---

### 6.2.1 Creating activities

To create an activity:

1. Fill in the fields in the upper part of Activity Manager using the information in the following table:

Information	Description
ID & Name	Unique ID and name for the activity.
Domain	Domain in which this activity applies. If you want the activity to apply to all domains, select <code>All</code> .
Time Zone	Time zone in which this activity is to run.

Information	Description
Due Date	<p>The date you want the activity to run, in relation to the local time specified using the <b>Time Zone</b> field:</p> <ul style="list-style-type: none"> <li>• Immediately: leave this field blank</li> <li>• Once, on a fixed date: date for the activity to run (this can be a past date).</li> <li>• More than once, at fixed intervals: first date for the activity to run; the intervals are then measured from this date/time.</li> </ul> <p>For example, if you enter 1 January 2005 with an interval of 1 week, the activity runs first on 1 January 2005, then on 8 January 2005, 15 January 2005, and so on.</p> <p>Setting up intervals for an activity is explained later in this section.</p> <p>Note: To specify the <b>Due Date</b> in UTC/GMT, use the <b>Due Date (UTC)</b> field. When you enter the date in one field, TRM automatically displays the equivalent time in the other field. When you select a date, the time defaults to "00:00" (midnight). You can overwrite 00:00 with another time. Only one activity can run at a time. So, if you have two activities with the same <b>Due Date</b> and time, TRM chooses an order for the activities and runs them one after another. To force TRM to run the activities in a specific order (for example, when one activity needs output from another), use the <b>Prerequisite ID</b> field and <b>Pending</b> switch.</p>
Enable To	<p>Last date and time that you want this activity to run, in relation to the local time specified using the <b>Time Zone</b> field. If you want to run the activity indefinitely, leave this field empty.</p> <p>To specify the <b>Enable To</b> date and time in UTC/GMT, use the <b>Enable To (UTC)</b> field. When you enter the date in one field, TRM automatically displays the equivalent time in the other field.</p>
Due Date (UTC) Enable To (UTC)	<p>Same as the <b>Due Date</b>, and <b>Enable To</b> fields, but used for entering or viewing the date and times in UTC (universal time coordinated, formerly known as Greenwich mean time or GMT).</p>
Prerequisite Pending	<p>Another prerequisite activity, if you want the activity you are defining to run according to the same time schedule as another activity, but always after it.</p> <p>If you specify a prerequisite activity, turn on the <b>Pending</b> switch. When the prerequisite activity has run successfully, TRM automatically switches off <b>Pending</b> and starts this activity.</p>
Type	<p>Activity that relates to the activity you want to set up.</p> <p>When you select an activity type, the <b>Parameters</b> page is updated with the fields specific to that activity: see <i>Appendix A Activity parameters</i> on page 627.</p>
Group	<p>Activity group (such as monthly or nightly) to which you want this activity to belong.</p>
Running (switch)	<p>This switch is for information only, to show you whether the selected activity is currently running (only one activity can run at a time).</p> <p>TRM automatically turns this switch on for whichever activity is currently running, and turns it off when the activity finishes running</p> <p>You should never turn on the <b>Running</b> switch yourself, since doing so could interfere with an activity that is actually running. The only time you may need to turn it off is in the event of a system crash: when the switch may still be on for an activity that has stopped.</p> <p>You can check which activity is currently running by selecting <b>Tools - Running</b>: see 6.2.4 <i>Checking the running of activities</i> on page 232.</p>

2. Save the whole activity definition using **File - Save As New**.
3. Complete the activity definition using the information in the following sections.

### 6.2.1.1 Defining activity parameters

The fields displayed in the **Parameters** page vary according to which activity you selected in the **Type** field in the upper part of Activity Manager. To find out the parameters required for a specific activity, see *Appendix A Activity parameters* on page 627.

However, some fields are common to all activities, and should be filled in as follows:

Parameter	Description
Mail Notification	E-mail address to which TRM sends a message whenever the activity has run. The message shows whether or not the activity ran successfully. If your organization's mail server is not running and TRM is unable to send a notification to the e-mail address, you can refer to the activity log.
Calendar	If you are setting up the activity to run at intervals, the calendar that is to be used for calculations of those intervals. You set the intervals themselves using the <b>Intervals</b> page. If you are running this activity only once, you can leave this field blank.
Due Date Offset in Days	"-1" if you want the activity to process data for the previous day rather than the day of the <b>Due Date</b> . For example, you set an accounting activity to run at 3 a.m. because you want it to run during the night, but it is actually the accounting data from the previous day that you want to process. You can enter positive and negative values to offset the activity forwards or backwards, but back by one day is the most obvious and useful setting.

---

**Note:** Information about how the different types of activities are used is provided in the relevant section of the *TRM User Guide* or *TRM Instruments: Processing and Calculations*.

---

### 6.2.1.2 Defining activity intervals

If you specified that the activity needs to run "more than once, at fixed intervals", in the **Due Date** field in the upper part of the application, you need to define the frequency for the activity in the **Intervals** page.

First, you need to define in which order you want TRM to check the intervals defined for the activity. This is mandatory because the calculation of the next due date of the activity can be affected by the order in which the intervals are selected.

Secondly, you need to define the intervals themselves, and how they are calculated.

To define the intervals:

1. In Activity Manager's **Intervals** page, specify the order (1 = first, 2 = second) in which you want TRM to check the intervals defined for this activity in the **Number** field.

Even if you have only one interval definition, you must still give it a number, namely "1".

2. In the **Unit Count** and **Unit** fields, enter the size of the interval, where **Unit Count** is a number and **Unit** is day, week, and so on.

For example:

- Every three days, **Unit Count** = 3, **Unit** = Add Day
- On the third of every month, **Unit Count** = 3, **Unit** = Set Day of Month.

All the units that you can choose from give you dates or times in relation to the date defined in the **Due Date** field in the upper part of the application. When the first interval is reached, that date/time becomes the new due date from which the next one can be measured.

Interval	Select
Number of days, months, weeks, years, hours or minutes forward	One of the following: <ul style="list-style-type: none"> <li>Add Day (any day, including weekends and bank holidays); Add Month; Add Week; Add Hour; Add Minute; Add Year.</li> <li>Business Day Forward (business days, based on the calendar specified in the <b>Parameters</b> page).</li> </ul>
Number of business days backward	Business Day Backward.
[nth] holiday or weekend day forward	Next Holiday. This is determined by the calendar you selected for this activity in the <b>Parameters</b> page.
[nth] day of the month	Set Day of Month. For example, the third day of every month.
[nth] month of the year	Set Month. For example: the third month of every year (for March).

3. Save the whole activity definition using **File - Save**.

## 6.2.2 Running activities immediately

You can force activities (either individual activities, or all activities within the same activity group) to run immediately, no matter what their current due date and interval settings are.

- To run an individual activity immediately, select **File - Activate Now**
- To run all the activities in a target activity group immediately, select **File - Activate Group Now**.

After the activity (or activity group) has run, TRM sets the next due date based on its interval definitions. If you want the activity to run again, and if there are no intervals defined for the activity, you must either supply a date in the **Due Date** field or define at least one interval.

## 6.2.3 Adding extra properties to activities

It is possible to add extra functions to a specific activity. These extra properties can be made invisible to the person using the activity, or be made to appear as optional or mandatory fields.

See 3.39 *Properties (optional)* on page 148 for more information.

## 6.2.4 Checking the running of activities

You can check which activity is running now in the **Running Activities** dialog by selecting **Tools - Running**.

Note that the **Due Date** column in the dialog shows the time as well as the date. The due date can also be a date in the past, since you can backdate an activity by giving it a due date in the past and saving the activity. This causes the activity to run immediately, but the resulting data is as if the activity ran on that due date, and not today.

You can leave the **Running Activities** dialog open to keep a constant check on which activity is currently running. You can set how frequently TRM checks whether a new activity is running, by selecting the relevant time interval from the **Update** menu (10 Seconds, 30 Seconds, 1 Minute, or 5 Minutes). Alternatively, you can get TRM to check immediately, using **File - Refresh**.



To check if an individual activity ran correctly (activity log) and how many times it ran, select the activity whose log you want to view and look in Activity Manager's **Log** page.

TRM updates the log information in real time, but to view the latest information in Activity Manager's **Log** page, you must refresh the display using **View - Refresh Log**.

The **Log** page shows the last 100 log entries for the selected activity, in reverse order (the most recent entry is shown first). Each row shows information on one specific time that the activity ran, the **Number** column showing you which time: 1 meaning first time, 2 meaning second time, and so on.

### 6.2.5 Generating reports on activities

You can check which activities ran in a specific period by requesting an Activity Log report. The report also shows whether the activity ran successively and, if not, why it failed.

See *B.1 Activity Log Report* on page 659 for details of the report's parameters.



In TRM, you can create different types of reports: reports listing your data (for example, clients or accounting rules), position-related reports (for example, Transaction, Key-Figure, and Periodic P/L), and accounting reports. Reports are useful not only when you need a printed version of your data, but also for viewing information on-screen that would either be too long or too complex to read in Transaction Manager or in an application such as Treasury Monitor.

You can also perform a variety of calculations on the data in the report, for example, calculations that are not available from Treasury Monitor. You can add, multiply, subtract and divide totals, calculate averages, produce subtotals at any grouping level, produce running totals, combine the output of different columns, and create sophisticated "if" conditions for displaying and calculating data.

You can create as many different report layouts as you need (either completely new ones, or ones based on existing layouts).

## 7.1 Report Generator

Reports are set up and managed in an application called Report Generator.

All types of report give you columns of data that you can choose either to display or to hide. So that information appears the moment that you open the report, by default, all columns of data are selected when you open the report.

In most cases, however, you will want to deselect at least some of the columns, because displaying all of them makes the report impractically wide.

As well as the predefined columns that belong to a particular type of report, a report can contain columns that you create yourself, and you can choose whether or not to display them as well as the standard columns.

### 7.1.1 Report Generator menus

The following tables describe the menu items which are specific to Report Generator.

Other menu items which are common to all applications are described in *2.2.6 Using application menus* on page 34.

#### 7.1.1.1 File

Menu item	Description
New Report	Displays a list of reports. Select the report you want to generate from the list. The report's start-up parameter dialog displays.
Open	Opens a dialog to enable you to select an existing report layout.
Parameters	Allows you to reopen the current report with different start-up parameters, without having to quit the report.

Menu item	Description
Save As	Allows you to save the report layout, either in the Personal folder (if this is a layout you are creating for your own use), or in the Shared folder (if you want to make the layout available to others).  The directory that appears by default is the one set during implementation with the variable <code>FK_REPORT_DIRECTORY</code> .
Export	Saves the report and allows you to export the data to another application.  The data can be saved as a text file (either .csv or .txt), in XML format, or as a HTML file.  Note that when exporting report content to an XML file, a Document Type Definition (DTD) is not provided and therefore it is not possible to validate the content.
Print	Prints the current report.
Print Preview	Allows you to preview the report's appearance before you print it.
Page Setup	Allows you to modify the page size, orientation, margin sizes, and print settings for this report.

### 7.1.1.2 Edit

Menu item	Description
Copy	Copies the selected report data and allows you to paste it into another application
Copy Report	Copies the whole report and allows you to paste it into another application.
Find Find Next	Allows you to search for a particular value in the report.
Column	Opens a list of menu options which allow you to configure the appearance of the report's columns or create a calculated column. <ul style="list-style-type: none"> <li>• <b>Properties:</b> allows you to add a grand total or balance for the whole column using the <b>Grand Total</b> field in the <b>Column Properties</b> dialog. If you grouped the data in the report (<b>Format - Grouping</b>), you can also add a total for any level within the grouping hierarchy.</li> <li>• <b>New Column:</b> allows you to create your own columns.</li> <li>• <b>Alignment:</b> changes the text alignment in the selected column to left, center, or right.</li> <li>• <b>Decimal Precision:</b> changes the decimal precision of a numbers column where Millions rounds to the nearest million, Thousands to the nearest thousand, None gives no decimal places, and 1 digit through to 10 digits give 1-10 decimal places.</li> <li>• <b>Hide Column:</b> hides the selected column from the display. You can reinstate the column using the <b>Format - Columns</b> option.</li> <li>• <b>Delete Column:</b> deletes the selected column. You can only delete columns that you have created.</li> <li>• <b>Merge Cells Vertically / Merge Cells Horizontally:</b> enables selected columns which have the same content to be combined to form a single cell. To split the cells, deselect this menu option.</li> <li>• <b>Resize to Fit:</b> automatically resizes columns to fit the content. Note that you can also double-click between column headers to resize the column on the left.</li> </ul>
Print Settings	Allows you to define print settings for the current report layout.

### 7.1.1.3 Format

Menu item	Description
Columns	<p>Opens a multi-selection list to enable you to define the columns to be displayed in the report. By default, all columns are selected when you open a new report.</p> <p>Note that you can also create your own columns.</p>
Grouping	<p>Opens a multi-selection list to allow you to select the column you want to use to group the information in the report.</p> <p>You can group by more than one column. The number of nested levels in the report is unlimited.</p> <p>Each group of data rows is outlined by one row at the beginning (Grouping Header), and another row at the end (Grouping Footer). Grouping headers cannot be modified. However, grouping footers can be used for displaying group totals and you can assign an expression to each column in a group footer row. See <i>7.2.5.3 Using groups in expressions</i> on page 251.</p> <p>Note that when you select columns to group by, these columns do not need to be displayed (<b>Edit - Column - Hide Column</b>).</p>
Sorting	<p>Opens a multi-selection list to allow you to select the column you want to use to sort the information in the report.</p> <p>To make the report easy to read, it is best to make sure that the column you sort by is the first column listed.</p> <p>If you select more than one column, you can sort at more than one level.</p>
Group Sort	<p>Opens a multi-selection list to allow you to select the column you want to use to sort report data within groups based on figures provided at the group level (typically totals but may be other values).</p> <p>This option becomes available once you have selected a Grouping column.</p>
Criteria	<p>Allows you to produce reports that contain only the information matching the search criteria you specify.</p> <p>You can use Report Generator's <b>Expression Builder</b> to help you enter the search argument (see <i>7.2.5 Building expressions for reports</i> on page 241).</p>
Display Only Totals	<p>Compresses the display to show only one row for each column; this is useful if you only want to see totals and averages.</p> <p>Since text columns can have neither averages nor totals, compressed text columns are blank by default. However, you can display the first or last item for a text column within a grouping hierarchy to identify the contents of the grouping: see <b>Format - Grouping</b> and <i>7.2.5 Building expressions for reports</i> on page 241 for more information.</p>
Appearance	<p>Allows you to change the appearance of the report, including font properties and background colors for cells.</p>
Header/Footer	<p>Allows you to change the header and footer text for the whole report.</p>
Images	<p>Allows you to add images to reports to enhance their appearance and impact. You can specify where the image is positioned on the report.</p> <p>Only .bmp files may be inserted. You can preview the image in the report using <b>File - Print Preview</b>.</p>

### 7.1.1.4 View

Menu item	Description
Zoom In Zoom Out Zoom Default	Allows you to magnify or reduce the report display in steps of 10%. The zooming information can be saved in the report layout. The zoom percentage has no effect on print settings: printing is always done using the zoom default setting of 100%.
Refresh Data	Updates the report's data: either recalculates data in calculated columns (refresh data), or updates the report with the latest market data (refresh data).
Report Outline	Displays a hierarchy of all grouping headers and footers currently present in the report and allows quick positioning in any part of the document.
Chart	Allows you to display the report data as a chart. In the <b>Chart</b> dialog, select the column that you want to appear on the x axis. It is advisable to choose a date column. Right-click the chart if you want to change its appearance.
Options	Displays the <b>Report Generator options</b> dialog which enables you to specify the default settings for all reports. There are three tabs in the dialog: Layouts; Print; and Clipboard. <ul style="list-style-type: none"> <li>• <b>Layouts</b> - allows you to view or modify the default directories for saving report layouts. If the shared files location refers to a network drive, it may be slow to build a <b>Layout</b> menu. In such a case, you can skip scanning for layout files in the shared network folder by turning off the <b>Scan Shared Layouts</b> switch.</li> <li>• <b>Print</b> - allows you to change the default print settings for all reports. Note that the print settings defined here apply to the application, whereas those defined in <b>Edit - Print Settings</b> only apply to the current report layout.</li> <li>• <b>Clipboard</b> - allows you to define the settings related to copying row and column header cells. If these switches are on, data from all cells, including the content from header cells, is copied to the clipboard.</li> </ul>

### 7.1.1.5 Window

Menu item	Description
Tile Cascade	Displays several open reports within one instance of Report Generator. Open reports are also accessible from the <b>Window</b> menu.

## 7.1.2 Start-up parameters

It is possible to alter the start-up parameters so that Report Generator launches in a different mode. See *C.9 Report Generator* on page 684 for information about the options available.

## 7.1.3 Report files

Report Generator recognizes three types of files: report definitions, report parameters, and report layouts.

The report definition file specifies the report type (unique report identifier), the data source to retrieve the data from, definitions for all startup parameters and, in some cases, information about how to transform numeric values to a more user-friendly text presentation. A document of this type is not meant to be modified; it serves as a starting point when creating a customized variant of a report. The default file extension is .frd

Report parameter files provide a way to specify values for startup parameters required by the report so that it can be executed without user interaction. The parameter file itself does not contain enough information to run the report; it also refers to either the report layout or the report definition. Once

this referred document is opened, parameters are set and the report is run automatically. The default file extension is .frp.

A report layout determines how the report will appear, whether rows of data will be grouped and/or sorted, which columns will be visible and in what order, which colors and fonts will be used, and so on. The layout file can also contain default values for report startup parameters. The layout file is a layer on top of the underlying report definition. The default file extension is .fkr.

Settings for decimal and thousands separators are saved in the report layout, so that when a layout is opened on a machine with different regional settings, the settings from the layout are used.

The regional settings specified on your machine are used if no information relating to separators is found in the layout when it is opened.

It is important that the same separators as those defined in the layout are used when numeric values are added or modified in the report.

---

**Note:** A basic set of report layouts is distributed with the software.

---

## 7.2 Managing reports

The following sections explain how to create new reports, and how you can configure columns so that they display specific information or calculated data.

### 7.2.1 Creating new reports

To create a new report:

1. In Report Generator, select **File - New**.
2. From the resulting menu containing a list of available reports, select the type of report you want to create.  
See 7.2.7 *List of reports* on page 254.
3. In the resulting dialog, enter the parameters for the data you want to view in the report.  
The parameters for each report are described in *Appendix B Report parameters* on page 659.
4. Click **OK**.
5. In the resulting report, customize the layout of the report if necessary.
6. Select **File - Save As** to save the report layout.

---

**Note:** Information about how the different types of report are used is provided in the relevant section of the guide.

---

### 7.2.2 Opening entity reports

Editors have a **Tools - Run report** menu option, from which you can generate a report showing the entities that have been created in that editor.

For example, if you open Currency Editor and select **Tools - Run report**, a report will be generated that shows all currencies that have been created, plus details of their attributes: see 3.3.9.5 *Generating reports on static data entities* on page 50.

### 7.2.3 Drilling down into reports

In some reports, for example, those run from Instrument Editor (as described in 3.19.1 *Generating reports on instruments* on page 130), it is possible to drill down further into the listed data in order

to view the underlying attributes in more detail in a separate report. IDs of the data that can be drilled-down display as hyperlinks.

To drill down further into an item in the report, do one of the following:

- Right-click the ID and select one of the available underlying attributes.
- Left-click the ID: the underlying attribute which is first in the list of available attributes is selected automatically.

In both cases, a new report is generated which shows more information about the underlying attribute of the static data.

## 7.2.4 Creating columns for special information or groupings

In most cases, the standard columns for the type of report you are creating should provide you with all the information that you want to display. If not, you can create and configure your own columns, which can be derived from information in other columns.

With these columns you can also produce a variety of conditional output, such as: "if value is less than this, then do this; otherwise, do that". These conditional statements can be either numeric or alphabetical: for example, you can separate clients whose names start with A-M from those starting with N-Z by producing an argument of the form, "if client ID is less than or equal to M, then add text 'group 1'; if not, then add text 'group 2'" and then use this output as a grouping criterion.

For convenience, these special columns are called calculated columns in TRM, but it is worth remembering that they can serve more purposes than simply performing calculations.

### 7.2.4.1 Creating calculated columns

To create a calculated column:

1. Select the column to the right of where you want the new column to appear.
2. Select **Edit - Column - New Column**.
3. In the **New Report Column** dialog, enter a name for the new column in the **Name** field.  
Do not use upper-case text or spaces (you can use an underscore sign as a separator).
4. Enter a name in the **Displayed as** field.

The name you give here will appear in the **Select Columns** multi-selection list and on the report.

5. Click > to the right of the **Column** field to open the **Expression Builder** dialog.
6. Enter the formula you want for the new column in the **Expression Builder** dialog, and click **OK** to confirm.

Each cell for which the calculation has failed is displayed as <Calculation Error> (white text on a red background). In addition, a message displays with detailed information about the first calculation error.

For information on using the **Expression Builder** dialog and building formulas, see *7.2.5 Building expressions for reports* on page 241.

### 7.2.4.2 Creating dynamic column headings

You can create a dynamic column heading based on a report's start-up parameters. To do so, you modify the properties of the column using a formula which refers to one or more data rows in the report. The results of the formula are then displayed in the column heading.

To create a dynamic column heading:

1. In the report display itself, select the column for which you want to create the dynamic heading.
2. Select **Edit - Column - Properties**.
3. Click > to the right of the **Displayed As** field to open the Expression Builder dialog.



4. Enter the formula you want for the new heading column in the Expression Builder dialog, and click **OK** to confirm.

## 7.2.5 Building expressions for reports

The **Expression Builder** dialog can be used to build expressions for calculated columns. The components that are available to help you build the expression are available on the left side of the dialog, and include: built-in functions (function syntax templates), columns, constants (for example, the date) and the report's start-up parameters. Built-in functions are described in the following section.

Operators also help you build your formula for a calculated column and can be used together with built-in functions. The operators you can use in the **Expression Builder** dialog are described in 7.2.5.2 *Operators* on page 247.

---

**Note:** The definition of a new column cannot include the column itself in the expression as this creates a circular dependency.

---

### 7.2.5.1 Built-in functions

The following table describes the built-in functions, and gives some examples of how they can be used.

Built-in function	Description
<code>abs()</code> <code>abs( «argument» )</code>	<p>Returns absolute value of a given number.</p> <p>This function accepts a single column value as an argument, and it can also accept a set of columns.</p> <p>In the latter case, the result will be a set of absolute values and as such, it can be passed to other built-in functions that expect the set of values as an argument (useful when defining expressions for group totals).</p> <p>For example:</p> <pre>abs(amount) sum(abs(@amount))</pre>
<code>as_datetime( «column» )</code> <code>as_float( «column» )</code> <code>as_int( «column» )</code> <code>as_money( «column» )</code> <code>as_numeric( «column» )</code> <code>as_text( «column» )</code>	<p>Conversion methods used to convert any data type to a string where columns of different types are combined.</p> <p>For example:</p> <pre>as_text(my_date_column) + ": " + my_string_column)</pre> <p>Gives a result such as:</p> <pre>"DD/MM/YYYY: MyStringColumnContent"</pre> <p>Note: The following rounding is associated with these functions:  <code>as_float()</code>: 10 digits, <code>as_money()</code>: 8 digits, <code>as_numeric()</code>: 4 digits.</p>

Built-in function	Description
<b>avg()</b> avg(@ «column» )	<p>Calculates the average of a set of numeric values.</p> <p>This function has two forms: the one with one argument is used for calculating simple average (formula: <math>(\sum \text{values}) / \text{num of elements}</math>).</p> <p>The one with two arguments calculates the weighted average (formula: <math>\sum (\text{volume} * \text{value}) / \sum \text{volume}</math>).</p> <p>Since it makes no sense to apply this function on a single value, both syntax forms expect columns to be specified using the 'set of columns' qualifier ('@' sign).</p> <p>For example:</p> <p>Simple average:            avg(@amount)</p> <p>Weighted average:            avg(@volume, @price)</p>
<b>business_days()</b> business_days «calendar_id» , «date_column» , «date_column» )	<p>Calculates the number of business days between two dates according to a specific calendar.</p>
<b>day() or hour() or minute()</b> day( «date_column» ) minute( «date_column» ) hour( «date_column» )	<p>Extracts the time (hour or minute) or day of the month from a date.</p> <p>The result is an integer (1-31).</p> <p>For example:            day(payment_date)</p>
<b>date_add()</b> date_add(«date» , «days» , «calendar_id» )	<p>Returns a date which adds business &lt;days&gt; to the &lt;date&gt; according to the specified &lt;calendar&gt; (if no calendar is specified, it implies we use calendar days).</p>
<b>extract_word</b> extract_word( «text_column» , «word_separators» , «word_index» [, «exact_match»] )	<p>Extracts part of a string:</p> <ul style="list-style-type: none"> <li>• where [, «exact_match»] is 0 or 1</li> <li>• there is a space after «word_index» to avoid any confusion with regional settings.</li> </ul> <p>For example:</p> <p>extract_word (instrument_group, "/", 3) returns:</p> <ul style="list-style-type: none"> <li>- "EQUITY" if instrument_group = "/EQ/EQUITY"</li> <li>- "FX" if instrument_group = "/FX"</li> <li>- "BOND" if instrument_group = "/MM/BOND/USD"</li> </ul> <p>extract_word (instrument_group, "/", 3 , 1) returns:</p> <ul style="list-style-type: none"> <li>- "EQUITY" if instrument_group = "/EQ/EQUITY"</li> <li>- "" if instrument_group = "/FX"</li> <li>- "BOND" if instrument_group = "/MM/BOND/USD"</li> </ul> <p>extract_word (instrument_group, "/", 1 , 1) returns:</p> <ul style="list-style-type: none"> <li>- "" if instrument_group = "/EQ/EQUITY"</li> </ul>

Built-in function	Description
<pre>first() first(@ &lt;column&gt; )</pre>	<p>Returns a value from the first row in the current group, under the column "column".</p> <p>Since the notion of a 'first' row makes sense only when you are grouping, the column must be preceded with the '@' qualifier.</p> <p>For example:</p> <pre>first(@amount)</pre> <p>In the case of compressed text columns (see <b>Format - Display Only Totals</b>), which are blank by default, you can use this function to display the first item within a grouping hierarchy to identify the contents of the grouping.</p> <p>For example:</p> <pre>first(@column_id)</pre>
<pre>get_client_country() get_client_country(&lt;client_id&gt;)</pre>	<p>Returns the country of the client.</p>
<pre>get_client_group() get_client_group( &lt;client_id&gt;, "&lt;main_group&gt;")</pre>	<p>Returns the group that the client "client_id" belongs to, within the specified main group "main_group".</p> <p>If the client belongs to more than one group in the main group, the first one will be returned.</p> <p>For example:</p> <pre>get_client_group(client_id, "PRINCIPAL")</pre>
<pre>get_client_top_parent() get_client_top_parent(&lt;client_id&gt;)</pre>	<p>Returns the ID of the parent.</p> <p>This always displays the Top Parent should there be a chain of ownership (or the same client_id if the client has no parents).</p>
<pre>get_client_country() get_client_top_parent()</pre>	<p>Combined together, get_client_country and get_client_top_parent can be used to get the country_id of the topmost parent:</p> <p>For example:</p> <pre>get_client_country(get_client_top_parent(&lt;client_id&gt;))</pre> <p>The client here can be, for example: the trade counterparty, the instrument issuer, the instrument guarantor, or any cashflow credit client.</p>
<pre>get_field() get_field("&lt;table&gt;", &lt;key_column_ids&gt;, "&lt;field&gt;")</pre>	<p>Retrieves certain fields from selected tables in the system.</p> <p>The selected tables are those that have a Get&lt;TableName&gt; function defined, for example, the Client and Portfolio tables, with the corresponding GetClient and GetPortfolio functions.</p> <p>Note that arguments "db_table" and "field" must be specified in quotes.</p> <p>For example:</p> <pre>get_field("client", client_id, "name") get_field("portfolio", portfolio_id, "name") get_field("currency", currency_id, "class_id") get_field("UMICreditClient", instrument_id, 1, "cover_percent")</pre> <p>Note: get_field() accepts both strings and numerical data as key values (for the second argument).</p>

Built-in function	Description
<pre>get_property_value() get_property_value("«db_table»", «key1», «key2», «key3», "«prop_id»")</pre>	<p>Retrieves user-defined properties from any table or database in the system.</p> <ul style="list-style-type: none"> <li>Both &lt;db_table&gt; and &lt;prop_id&gt; must be specified in double quotes</li> <li>Argument &lt;db_table&gt; is case-sensitive (i.e. "Client" instead of "client")</li> <li>Argument &lt;property&gt; will be automatically converted to uppercase</li> <li>Even though currently only &lt;key1&gt; and &lt;key2&gt; are used, all three keys have to be specified (most of the time &lt;key2&gt; and &lt;key3&gt; will be empty strings)</li> <li>Type of the result depends on actual type of the property: it can be a text, integer or floating point value.</li> </ul> <p>For example:</p> <pre>get_property_value("Client", client_id, "", "", "TELEPHONE") get_property_value("FXInstrument", id, "", "", "FXTYPE")</pre>
<pre>get_security_identifier get_security_identifier(«instrument_id», "«security_identifier_type_id»")</pre>	<p>Retrieves the security identifier for the given instrument and type.</p> <p>For example:</p> <pre>get_security_identifier (instrument_id, 'ISIN') get_security_identifier ('EURBOND', 'CUSIP')</pre>
<pre>get_transaction_property() get_transaction_property(«transaction_number_column», "«prop_id»")</pre>	<p>Retrieves user-defined transaction property «prop_id».</p> <p>The property «prop_id» is defined in the Property Editor and associated with the transaction «transaction_number» in Transaction Manager.</p> <ul style="list-style-type: none"> <li>&lt;transaction_number&gt; can be anything that evaluates to a number (the name of a column containing transaction number, plain number, expression, and so on)</li> <li>The type of the result depends on the actual type of the property: it can be a text, an integer, a floating point value, and so on.</li> </ul> <p>For example:</p> <pre>get_transaction_property(my_transaction_number_column, "PREVIOUS-COUNTERPARTY") get_transaction_property(12345, "MY-INFO")</pre>
<pre>human_rate() human_rate( «rate», «base_currency_column», «quote_currency_column»)</pre>	<p>This function uses the arguments in parameter where «rate» is either a numerical value, or the name of a column containing a rate, «base_currency_column» is either the name of the base currency the rate is expressed in, or the name of a column containing such a currency, and «quote_currency_column» is either the name of the quote currency the rate is expressed in, or the name of a column containing such a currency.</p>
<pre>if() if( «cond» )( «expr_true» )( «expr_false» )</pre>	<p>Evaluates expression "condition".</p> <p>If it evaluates to true (i.e. a non-zero value), then the result of expression «expr_true» will be the final result; otherwise, the result of expression «expr_false» will be used. Nested IFs are allowed.</p> <p>For example:</p> <pre>if(type-id = 'BOND') (1) (0) if(type_id = 'BOND) (1) (if(type-id = 'GBOND') (2) (0))</pre>

Built-in function	Description
<p>last() last(@ &lt;column&gt; )</p>	<p>Returns the value from the last row (preceding the footer row) within the current group, under the column &lt;column&gt;.</p> <p>Since the idea of a 'last' row makes sense only when grouping is applied, the column must be preceded with '@' qualifier.</p> <p>For example:</p> <pre>last (@amount)</pre> <p>In the case of compressed text columns (see <b>Format - Display Only Totals</b>), which are blank by default, you can use this function to display the last item within a grouping hierarchy to identify the contents of the grouping.</p> <p>For example:</p> <pre>last (@column_id)</pre>
<p>left () mid () right () left(&lt;text&gt; , &lt;pos&gt;) mid(&lt;text&gt; , &lt;pos&gt; , &lt;len&gt;) right(&lt;text&gt; , &lt;pos&gt;)</p>	<p>These functions are similar to those found in standard spreadsheets and are used for text manipulation.</p> <p>For example:</p> <p>If Issuer ID = ABN AMRO</p> <pre>left(issuer_id, 2) = AB mid(issuer_id, 5, 3) = MRO right(issuer_id, 3) = MRO</pre>
<p>like() &lt;text_column&gt; like "&lt;text&gt;"</p>	<p>Performs string comparison, returning true if strings match, otherwise false.</p> <p>The percentage sign '%' can be used to specify various modes of comparison.</p> <p>'Like' cannot be combined with the 'not' expression.</p> <p>For example:</p> <pre>name like "Wa%" returns true for all name that begin with 'Wa'</pre> <pre>name like "%Street%" returns true for all names that contain 'Street'</pre> <pre>name like "%em" returns true for all addresses that end with 'em'.</pre>
<p>match &lt;text_column&gt; match "&lt;regular_expression&gt;"</p>	<p>Performs a complex string comparison using regular expressions. Returns true if strings match, otherwise false.</p> <p>A regular expression is a pattern of text that consists of ordinary characters (for example, letters a to z) and special characters, known as metacharacters.</p> <p>The pattern describes one or more strings to match when performing a comparison. The regular expression serves as a template for matching a character pattern to the string being compared.</p> <p>For example:</p> <pre>name match '^A.* ^B.*'</pre> <p>returns true for every 'name' that begins with 'A' or 'B'. The '^' sign stands for 'at the beginning of the text', so in this case '^A' means 'A at the beginning of the text'. The dot stands for 'any sequence of characters', and the asterisk stands for 'any number of times (zero or more)'.</p> <p>Putting everything together, expression becomes 'A at the beginning of the text, and any sequence of characters that occurs after it zero or more times'.</p> <pre>name match '[AB].*a\$'</pre> <p>returns true for every 'name' that contains 'A' or 'B' and ends with an 'a'.</p>

Built-in function	Description
	<p>Square brackets are used to list all possible characters that can match. It is not specified exactly where in the string those characters must appear, so they are allowed to appear anywhere in the text. The dollar sign stands for 'at the end of text'.</p> <p>Putting everything together, expression becomes 'A or B anywhere in the text, followed by any sequence of characters that occurs zero or more times, and with an 'a' at the end of the text'.</p> <pre>name match '^A.*[^a]\$'</pre> <p>returns true for every 'name' that begins with an 'A' and does not end with an 'a'.</p> <p>The square brackets can also be used to specify an exclusion list of characters. The '^' sign specified at the beginning of the list means 'the characters in this list must not appear in the text'.</p> <p>Combined with the dollar sign, it becomes 'the characters from the list that must not appear at the end of the text'.</p>
<p>min() min(@&lt;column&gt;)</p>	Returns the smallest numeric or date value in the specified group or column.
<p>max() max(@&lt;column&gt;)</p>	Returns the largest numeric or date value in the specified group or column.
<p>month() month( &lt;date_column&gt; )</p>	<p>Extracts the month of the year from a date.</p> <p>Result is an integer (1-12).</p> <p>For example:</p> <pre>month(payment_date)</pre>
<p>prev() prev(@ &lt;column&gt; )</p>	<p>When used on plain rows (that is, not totals), displays the value in a given column on the previous row (within the grouping).</p> <p>For example:</p> <pre>prev(@amount)</pre> <p>displays the value found in the Amount column on the row above.</p>
<p>prod() prod(@ &lt;column&gt; )</p>	<p>Calculates the product of a set of numeric values.</p> <p>Since it makes no sense to apply this function on a single value, the column has to be specified using the 'set of columns' qualifier ('@' sign).</p> <p>For example:</p> <pre>prod(@number)</pre>
<p>round() round( &lt;numeric_column&gt;, &lt;precision&gt; )</p>	<p>Rounds floating point value to a specified number of decimal digits.</p> <p>This allows you to convert a decimal amount to the superior as opposed to the inferior (truncate).</p> <p>For example:</p> <pre>round(nominal_amount, 1)</pre> <p>For nominal_amount = 1.16, the above method will return value of 1.2.</p>
<p>sum() sum(@ &lt;numeric_column&gt; )</p>	<p>Calculates the sum of a set of numeric values (formula: <math>\sum</math> values).</p> <p>Since it makes no sense to apply this function on a single value, column has to be specified using the 'set of columns' qualifier ('@' sign).</p> <p>For example:</p> <pre>sum (@amount)</pre>
<p>text_to_num() text_to_num( &lt;text_column&gt; )</p>	<p>Performs a conversion from text to a numeric value.</p> <p>If the conversion is not possible, the result will be zero.</p> <p>For example:</p> <pre>text_to_num("123.45")</pre>

Built-in function	Description
<code>to_date()</code> <code>to_date( «column» )</code>	Extracts the date part from a date/time column (useful for making date comparisons without comparing time parts). For example: <code>to_date(log_date)</code>
<code>truncate()</code> <code>truncate( «numeric_column», «precision» )</code>	Truncates the floating point value to a specified number of decimal digits without rounding it. Allows you to convert a decimal amount to the inferior as opposed to the superior (round). For example: <code>truncate(nominal_amount, 1)</code> For <code>nominal_amount = 1.16</code> , the above method will return value of 1.1.
<code>year()</code> <code>year( «date_column» )</code>	Extracts the year from a date. The result is an integer. For example: <code>year(payment_date)</code>

### 7.2.5.2 Operators

You use operators to help you build your formula for a calculated column. This section describes the operators, and provides examples of how you can use them with built-in functions.

Operator	Examples
+ add	<code>book_value + accrued_interest</code> Or, for the portfolio ID, followed by one space, followed by the instrument ID: <code>portfolio_id + " " + instrument_id</code> Note: The result of an add operation that involves text and date will be text if the left operand is text. The result will be date if the left operand is date.
- subtract	<code>nominal_amount - book_value</code>
/ divide	<code>nominal_amount / 1000</code> <code>book_value / nominal_amount</code>
* multiply	<code>amount * market_fx_spot_rate</code>
^ to the power of	<code>maturity ^ 2</code> or, for the square root: <code>maturity ^ 0.5</code>

For conditional statements, you use "if" (built-in function). Here are some examples:

To do this	Formula
In a report of type Instrument, if the instrument is a bond, name the output 'Bond'; otherwise, name the output 'Other'. (With this output, you can later create a grouping that separates your bond instruments from the rest of your instruments) Note: Pay special attention to the use of quotation marks: they act as delimiters for text, so if your output is numbers instead, you do not use the quotation marks: <code>if (type_id = 'BOND') (1) (2)</code>	<code>if (type_id = 'BOND') ('Bond') ('Other')</code> Where the syntax is: <code>if (condition) (then) (else)</code>

To do this	Formula
As above, but expanded to naming the output 'GBond', 'Bond' or 'Other', depending on whether the instrument is a government bond, other kind of bond, or an instrument that is neither of these two.	if (type_id = 'BOND') ('Bond') (if (type_id = 'gbond') ('GBond') ('Other')) Where the syntax is: if (first condition) (then give this output) (else (second condition) (then give this output) (else give this output))
Group results according to whether they represent big movements (positive or negative) or small.	if (abs(amount) > 100000) ("Big") ("Small") Where the syntax is: if (condition) (then) (else)

For conditional statements based on text matches, you can use 'like' and 'match' (built-in functions) to produce conditions such as "all names starting with a target letter" or "all names containing a specific character string". Note that both are case-sensitive:

For all names...	'Like' example	'Match' example
Starting with [string]	(type_id like 'A%')	(type_id match '^A')
Containing [string]	(type_id like '%France%')	(type_id match 'France')
Ending with [string]	(type_id like '%a')	(type_id match 'a\$')

As you can see, 'like' is simple (% as a wild character before, after, or either side of the target letter or string), but not very flexible, since these three options are the only ones available.

---

**Note:** 'Like' cannot be combined with the 'not' expression.

---

With 'match', the syntax is more complex, but you have more possibilities; 'match' uses "regular expressions" (also known as Perl expressions). The separators and operators are described in the following table:

For this	Use	Example
"Starting with..."	^	Starting with capital 'A' (notice that ^ goes <i>before</i> the "starting with" character): " ^A "
"Ending with..."	\$	Ending with capital 'Z' (notice that \$ goes <i>after</i> the "ending with" character): " Z\$ "
Any character	.	Starting with capital 'A' then exactly one character: " ^A. " You can specify two or more characters by using the appropriate number of dots. For example: Starting with 'A' then two characters: " ^A. . " Starting with 'A' then three characters: " ^A. . . "



For this	Use	Example
Previous character any number of times (including none)	*	Starting with capital 'A' and ending with lower-case 's' (with any characters, any number of times, in-between): <code>"^A.*s\$"</code> Note: * qualifies the character that it follows: here, the "any" (".") character is being qualified, so ".*" means "any character, any number of times." Compare this with: <code>"^A*s\$"</code> which will only find As, AAs, AAAs, and so on (since the character that is allowed any number of times is capital 'A' rather than "any character.")
Previous character one or more times	+	+ is the same as * described above, except for the fact that it requires at least one character, and does not accept strings with zero occurrences of the character it qualifies. For example, compare: <code>"^Ab*"</code> ... which simply allows any character string starting with 'A' (since the syntax of b* means "lower-case 'b' no times, or one or more times), with: <code>"^Ab+"</code> ... which means "starting with capital 'A' and then lower-case 'b' one or more times."
Including all the characters listed	[ ]	<code>^[ABC]</code> This is useful if you want to make statements that are not case-sensitive. For example, if you want any names starting with 'A' (either upper-case or lower-case): <code>"^[Aa]"</code>
Excluding all the characters listed	[^ ]	Not ending with 'a': <code>"[^a]\$"</code>
Or		Starting with A or ending with 'a': <code>"^A.* . *a\$"</code>

Here are some examples of complete arguments:

To specify all names...	'Match' example
Instrument type starting with either A or B	<code>(type_id match '^A ^B')</code>
Countries starting with A or B, and ending with 'a'	<code>(country_id match '^[AB].*a\$')</code>

You can also produce further conditions with the following operators:

Operator/for items	Syntax	Example/for items where...
and Only items meeting all conditions ("only items with this value <i>and</i> that value")	<code>[expression] AND [expression]</code>	Client ID is ANYBANK and the currency is US dollars: <code>cp_client_id = "ANYBANK" AND currency_id = "USD"</code>
Bitwise and Bitwise or	<code>«num» bitand «num»</code> <code>«num» bitor «num»</code>	Number expressed in binary: <ul style="list-style-type: none"> <li>Bitwise and: 1 and 1 = 1, anything else is equal to 0</li> <li>Bitwise or: 1 or anything = 1, anything else equals 0</li> </ul> TRM uses binary storage for client roles, cashflow attributes, and other switches.

Operator/for items	Syntax	Example/for items where...
or Items meeting any one of the conditions ("this value <i>or</i> that value")	[expression] OR [expression]	Client ID is either ANYBANK1 or ANYBANK2: cp_client_id = "ANYBANK1" OR cp_client_id="ANYBANK2"
= <i>Equal to</i> the expression	[expression] = [expression]	Client ID <i>is</i> ANYBANK: cp_client_id="ANYBANK"
NOT != <i>Not equal to</i> the expression	[expression] != [expression]	Client ID is <i>not</i> ANYBANK: cp_client_id != "ANYBANK"  Note: 'Like' cannot be combined with 'not' to create a 'not like' expression. However, the following examples show commands that you can use as alternatives: Example criteria: !(cashflow_type_name like "Expi%") In the report, you will see all cashflows which are <i>not like</i> "Expi%". Example new column: if (!(transaction_currency_id like "EU%")) (1) (0) In the report, there will be a '1' for every row where the currency is <i>not like</i> "EU%". Being able to utilize 'not' with 'like' in this way can be useful, for example, when you are creating authority or reconciliation reports.
> and < <i>Greater than (&gt;) or less than (&lt;) the given values.</i>	[expression] > [expression] [expression] < [expression]	Amount is greater than 0 but less than 1,000,000: amount>0 AND amount<1000000  Note that for both > and <, you can add the equals sign ( = ) to mean "...or equal to." For example, for amount is greater or equal to 0, but less than or equal to 1,000,000: amount>=0 AND amount<=1000000

You can use open and close parentheses as delimiters. For example, if you want market = FX, or market = EQ expressed in the currency DEM:

(market\_id = "FX" OR market\_id = "EQ") and currency\_id = "DEM"

You can also use single or double quotation marks around names; for names containing dashes, slashes, or other characters reserved for mathematical functions, you must use quotation marks. For example:

Enter this	Otherwise...
cp_client_id = "ANY-1" rather than: cp_client_id = ANY-1	TRM misreads the dash as a minus sign.

Enter this	Otherwise...
<p>opening_date &lt; "31/12/1999" rather than: opening_date &lt; 31/12/1999</p>	<p>TRM does not recognize the date as a date. Note: You can also specify dates using the number of days from 01/01/1900. For this, you do not need quotation marks. For example: opening_date &lt; 36523 rather than: opening_date &lt; "31/12/1999" If you use Microsoft Excel, be aware that it gives a number that is two more than the TRM number. This is because of a bug in Excel (it counts 01/01/1900 as day 1 instead of 0, and it wrongly assumes that there was a 29 February 1990).</p>

### 7.2.5.3 Using groups in expressions

The general form of referring to a group in an expressions is:

```
Column:GroupingColumn
```

This means "a single value from *GroupingColumn* footer row, under column *Column*".

For example, a column named Amount% is created with the following formula:

```
amount/amount:date*100
```

Here, **amount** and **date** are column identifiers for columns Amount and Date, respectively. The term **amount:date** refers to a single cell value in the footer row of the **Date** group, under the column **Amount**.

For this to work there must be a value under column Amount in all Date footer rows. Technically speaking, an expression for column Amount and grouping Date must be defined first in order to make sure that all Date footer rows contain a defined value. After that the computation of Amount% may take place.

### 7.2.5.4 Using ranges in expressions

The general form of referring to a range of rows in an expression is:

```
@Column:GroupingColumn
```

The @ stands for "range of rows". Therefore, @Column means a "range of row values under column Column". The part to the right of the colon means, "row range starts with the first row in current GroupingColumn group". Both the first and last rows are part of the range.

- Using ranges in plain row expressions without a grouping specifier

One of the cases where this can be very useful is when building a cumulative sum: a value in a certain column is increased by successive additions, row by row. For example, a column named Cumulative Sum is created with the following formula:

```
sum(@amount)
```

Here, **amount** is the column identifier for column Amount. The GroupingColumn part has been omitted, so the range of rows always begins with the first row in the innermost group.

- Using ranges in plain row expressions with a grouping specifier

If the GroupingColumn part was specified, it would mean that the range starts with the first row in the group GroupingColumn, which is not always the same thing as the first row in the innermost group. If the column formula is modified to look like this:

```
sum(@amount:currency_id)
```

then all the @amount ranges start with the first row in the Currency group.

- Using ranges in footer row expressions without a grouping specifier

Results are different when the same expressions are assigned to a grouping: they will be evaluated on that group's footers only. When evaluating @Column in a footer row expression, the range is automatically assumed to be the whole group to which the footer row belongs.

Therefore, if the expression `sum(@amount)` is assigned to the Date grouping under the Amount column, instead of being used to create the new column Cumulative Sum (as in the earlier example), it will be evaluated only on the Date footer rows.

- Using ranges in footer row expression with a grouping specifier

If the expression `sum(@amount)` (which was assigned to the Date grouping in the previous example) is assigned to a Currency grouping, it will therefore only be evaluated on the Currency group footer rows.

Such a configuration where the inner grouping (Date) is used as the GroupingColumn and the expression is assigned to the outer grouping (Currency) is intentionally done that way. It illustrates the fact that the range sometimes can be of footer rows - instead of plain data rows.

## 7.2.6 Configuring columns

It is possible to further modify how the data in a report's columns is displayed.

### 7.2.6.1 Modifying heading and text properties

To modify the displayed heading and text properties of a column:

1. Select the column that you want to modify.
2. Select **Edit - Column - Properties**.
3. In the **Properties** dialog, modify the column's display name, in the **Displayed as** field.

By default, columns are displayed with the name they have when you select them from the **Select Columns** selection list (**Format - Columns**).

4. Click **OK** to save your changes.

### 7.2.6.2 Adding totals and averages to numeric columns

To add totals and averages to numeric columns:

1. Select the column to which you want to add the total (or average).
2. Select **Edit - Column - Properties**.
3. In the **Grand Total** field of the **Column Properties** dialog, add a formula to calculate the grand total or balance for the whole column.
4. If you want to calculate the total or average for a specific grouping level, enter the formula in the **Group** field.

Note that you can specify a different total for each grouping level.

5. Click **OK** to close the dialog.
6. Save the report layout using **File - Save As**.

If you open the **Expression Builder** dialog from the **Column Properties** dialog (by clicking > to the right of a field), it automatically suggests an expression which matches the column's data type. For example, for a numeric data type, the `sum()` expression is suggested, while for a non-numeric data type, the `last()` expression is suggested.

See 7.2.5 *Building expressions for reports* on page 241 for more information.

Some example formulas are described in the following table:

Syntax	Description
Total of an "amount" column <code>sum(@column_id)</code>	<code>sum(@amount)</code>
Running total of another column	The above formula is a simplified syntax that you can use if the column for which you want the running total is the lowest level in the grouping hierarchy. To produce the running total of any other column, you must follow the running-total column by a colon, then the column whose running total you want. For example, if you want the running total at Instrument-type level (assuming that this column is called <code>Instr_Type</code> ): <code>sum(@Column C:Instr_Type)</code> or at Portfolio level (assuming that this column is called <code>Portfolio</code> ): <code>sum(@Column C:Portfolio)</code>
Average of a column <code>avg(@column_id)</code>	<code>avg(@book_value)</code>
Average of "amount", divided by a "number"	<code>avg(@amount/1000)</code>
Average of ("amount" multiplied by a "number")	<code>avg(@amount*@number)</code>
Average of subgroups, rather than whole column:	<code>avg(@amount:credit_client_id)</code>
Weighted average	<code>avg(@amount,@days)</code>
Absolute value <code>sum(abs(@column_id))</code>	<code>sum(abs(@amount))</code> In other words numbers are always regarded as positive, whether their sign is plus or minus.
Multiplied total <code>prod(@column_id)</code>	<code>prod(@amount)</code> Like "sum" except multiplying instead of adding.

### 7.2.6.3 Displaying zero values in numeric columns

To turn on the display of zeros when the number in a cell = 0 (the default is off):

1. Select the column that you want to modify.
2. Select **Edit - Column - Properties**.
3. In the **Column Properties** dialog, switch on **Show Zeroes**.
4. Click **OK** to confirm your choice.

### 7.2.6.4 Modifying date and time formats of columns

To change the format used to display the dates or times in columns:

1. Select the column that you want to modify.
2. Select **Edit - Column - Properties**.
3. In the **Column Properties** dialog, enter the elements of the date and time you want to see in the **Date** and **Time** fields.

Note that you can separate the date and time formats using any separator you choose: for example a space, a slash ("/" ), colon (":" ) or underscore ("\_").

Format	Example	Element
Date (as a number)	30	dd
Day name (abbreviated)	Fri	ddd
Day name (full)	Friday	dddd
Month (as a number)	07	MM
Month (abbreviated)	Jul	MMM
Month (full name)	July	MMMM
Year (last two digits)	99	y or yy
Year (four digits)	1999	yyy
Hour (12-hour, single digit for 1-9)	5	h
Hour (12-hour, always double digits)	05	hh
Hour (24-hour)	17	H
Minutes	58	m
Seconds	23	s

4. Turn on the **Do not format using regional settings** switch if you do not wish to use the formatting specified in **Control Panel - Regional Settings**.
5. Click **OK** to confirm your choice.

## 7.2.7 List of reports

The available reports and the parameters you need to enter for each one are described in this section.

---

**Note:** All editors have a **Tools - Run report** menu option, from which you can generate a report showing the entities that have been created in that editor plus details of their attributes. You do not need to specify any parameters for this type of report: see *3.3.9.5 Generating reports on static data entities* on page 50.

---

Report type	Parameters
Activity Log	<i>B.1</i> on page 659
Balance	<i>B.2</i> on page 659
Bank Account Statement	<i>B.3</i> on page 660
Book Value Change History	<i>B.4</i> on page 660
Cashflow	<i>B.5</i> on page 661
Cashflow Fixing	<i>B.7</i> on page 662
Cashflow Log	<i>B.8</i> on page 662
Cheapest to Deliver	<i>B.9</i> on page 663
Classification	<i>B.10</i> on page 663
Collateral	<i>B.13</i> on page 664

<b>Report type</b>	<b>Parameters</b>
Competitive Quote	<i>B.14</i> on page 665
Custody Balance	<i>B.17</i> on page 666
Custody Reconciliation	<i>B.18</i> on page 666
Delivery	<i>B.22</i> on page 667
Drawdown Fixing	<i>B.23</i> on page 668
Event Diary	<i>B.24</i> on page 668
History Log	<i>B.25</i> on page 668
Holidays Checking	<i>B.26</i> on page 669
Holidays for Period	<i>B.27</i> on page 669
Limit Log	<i>B.35</i> on page 672
Rate	<i>B.37</i> on page 674
Rate Log	<i>B.39</i> on page 675
Rate Comparison	<i>B.38</i> on page 675
Realize Account Interest	<i>B.40</i> on page 675
Reconciliation	<i>B.41</i> on page 676
Renaming Client ID	<i>B.43</i> on page 677
Settlement	<i>B.45</i> on page 677
Settlement Cashflows	<i>B.46</i> on page 677
Settlement Instruction Chain	<i>B.47</i> on page 678
Settlement Log	<i>B.48</i> on page 678
Transaction Condition Sets	<i>B.49</i> on page 679
Transactions	<i>B.50</i> on page 679
Transaction Log	<i>B.51</i> on page 680
Transaction Market Rate	<i>B.52</i> on page 680
Key Figure	<i>B.34</i> on page 671
Periodic P/L Instrument Periodic P/L	<i>B.36</i> on page 673
Collateral Management	<i>B.12</i> on page 664
Call (Portfolio) Call (Transaction)	<i>B.5</i> on page 661





Transaction Manager, the transaction management application in TRM, makes it easy to deal and manage a wide variety of financial instruments, from simple transactions to complex structured products.

In Transaction Manager, you can perform different actions or processes related to transactions, for example, entering or querying transactions, fixing variable interest rates, adding fees or taxes, or assigning complex cashflow schedules to a transaction. It is also possible to cancel any actions or processes performed on a transaction.

Different *modes* of Transaction Manager can be configured to be used for a particular purpose or to display transactions in a particular state in the transaction flow. Transaction Manager modes are configured at implementation to meet the requirements of your organization.

Permissions are set up and applied to users to limit their access to different Transaction Manager modes according to their responsibilities in the organization.

At all points in the transaction flow, a transaction has a *state*: when a transaction moves forwards or backwards in the flow, its state changes. The state of the transaction depends on where it is in the transaction flow. All transactions must have a state and can only have one state at a time. In a typical TRM implementation, a different Transaction Manager mode may be configured for each of the transaction states used. Only the transactions with the appropriate state are visible in the corresponding mode.

Transaction *statuses* are given to transactions either manually in Transaction Manager, or automatically when the transaction moves from one state to another. If statuses are inherited by a transaction automatically, the status given depends on the state the transaction is coming from and the state it is going to. A transaction can have more than one status.

Some actions that can be performed on transactions are linked to the states and statuses of transactions in the transaction flow. For details of procedures that are specific to a particular instrument, see the relevant section of the guide *TRM Instruments: Processing and Calculations*.

## 8.1 Transaction Manager

Transaction Manager is customizable to allow users to personalize their workspace. It consists of several views which correspond to the different components of a transaction. Some views are only used for certain types of transactions.

Each view has its own list of columns in which the transaction information for the view is displayed. You can configure the display in Transaction Manager to show only the columns that you want to use in each view. The columns can be different for each type of transaction that you trade.

For details of the columns you need to select for a specific deal, see the relevant section of the guide *TRM Instruments: Processing and Calculations*.

## 8.1.1 Transaction Manager menus

The following tables describe the menu items which are specific to Transaction Manager and any layout or mode which is based on the application.

Other menu items which are common to all applications are described in *2.2.6 Using application menus* on page 34.

### 8.1.1.1 View

The main view in Transaction Manager is the **Transaction** view. This view is always displayed and shows the resulting transactions from the executed queries. This view allows you to display specific outputs of the transaction in their related views and to perform specific actions at the transaction level. For example, from this view, you can quickly look up the settlements and messages attached to a transaction by right-clicking the transaction and selecting either **Settlement Lookup** or **Message Lookup** depending on the action you want to do.

Menu item	Description
Enter Board	Opens Enter Board. Enter Board is a less complex layout in which you can capture deals if you do not want to enter them directly in Transaction Manager. See <i>8.2.3 Entering new deals in Enter Board</i> on page 272.
Accrual Yield	Displays the <b>Accrual Yield</b> view. This view displays time dependent and result mode specific yields for the purpose of accrual of discount/premium for bonds. The columns available for selection are: Active From/To, Leg Group, Yield %, and Nominal Rate.
Cashflow	Displays the <b>Cashflow</b> view. Mainly used to display the output of transactions and to perform specific actions at the cashflow level. For a more detailed view of the key-figures, use the <b>Cashflow/Event Figure</b> view. Note: You can also quickly look up generated settlements by right-clicking the settlement and selecting <b>Settlement Lookup</b> .
Cashflow/Event Figure	Displays the <b>Cashflow/Event Figure</b> view. This view gives a more detailed view of the key-figures relating specifically to expanded cashflows or events which are not available in the <b>Cashflow</b> view. For example, Figure Interest Rate and Figure Discount Rate for floater instruments. Intermediate results can also be viewed here: see <i>8.2.1.1 Calculating key-figures</i> on page 265.
Charge	Displays the <b>Charge</b> view. The charge view of Transaction Manager allows you to view and manipulate the fees and charges relating to the selected transaction.
Collateral	Displays the <b>Collateral</b> view. This view displays details of underlying collateral attached to a Collateral Transfer transaction (that is, a collateral basket). In the <b>Transaction</b> view, it is possible to add new collateral to a transaction using the <b>New Collateral</b> right-click action (see the guide <i>TRM Instruments: Processing and Calculations</i> ). You can then specify the collateral parameters, namely the Collateral Agreement, Instrument, and Units. See <i>Chapter 11 Managing collateral</i> on page 345 for more information.
Competitive Quote	Displays the <b>Competitive Quote</b> view. You can note details of quotes received from your counterparties in this view: see <i>8.2.1.6 Entering competitive quotes</i> on page 267 for more information.
Denomination	Displays the <b>Denomination</b> view. This view is used to display information relating to the unit size of denominated bonds.

Menu item	Description
Event	<p>Displays the <b>Event</b> view.</p> <p>This view is used for event management and displays the details of possible events for the selected transaction or cashflow.</p> <p>Event information may be generated from the instrument definition or the transaction.</p> <p>See the guide <i>TRM Instruments: Processing and Calculations</i> for information relating to events for specific types of instruments.</p> <p>Note: The Events Diary report displays all upcoming events that may require user intervention: see <i>B.24 Event Diary Report</i> on page 668 for details of the report's parameters.</p>
Guarantee	<p>Displays the <b>Guarantee</b> view.</p> <p>This view is used to display guarantee information.</p>
Instructions	<p>Displays the <b>Instructions</b> view where you can view and edit settlement instructions.</p> <p>See <i>8.3 Managing settlement instructions</i> on page 280.</p>
Irregular Date	<p>Displays the <b>Irregular Date</b> view where you can modify the dates for the current schedule's corresponding cashflow or event.</p> <p>A new row is added to this view when the <b>New Irregular Date</b> processing action is selected in the Schedule view. This action becomes available on a schedule when its method of frequency has been defined as Irregular.</p> <p>Generally, irregular dates are used to define cashflow/event dates that do not occur on a regular basis and therefore cannot be defined using any of the other frequency methods (such as Bullet or Times/Year).</p> <p>See also <b>Schedule</b> and <b>Irregular Values</b>.</p>
Irregular Value	<p>Displays the <b>Irregular Value</b> view where you can modify schedule data with validity ranges when a given field needs to take several values into account depending on the date.</p> <p>Using this view together with <b>Irregular Dates</b> (see previous) enables the provision of an irregular date and rate amortization structure without needing to touch any cashflows or add additional schedules.</p> <p>Note: You can only modify schedule data if the instrument has been assigned with the <b>Schedule-Data</b> feature (see the guide <i>TRM Instrument: Processing and Calculations</i>).</p>
Leg	<p>Displays the <b>Leg</b> view.</p> <p>This view is only used for swap instruments. The information corresponding to the different legs of the swap are displayed.</p>
Observation Date	<p>Displays the <b>Observation Date</b> view.</p> <p>This view is used for average FX rate forwards and average FX rate options.</p>
Observation Schedule	<p>Displays the <b>Observation Schedule</b> view.</p> <p>This view is used for average FX rate forwards and average FX rate options.</p>
Option Schedule	<p>Displays the <b>Option Schedule</b> view.</p> <p>Similar to the Schedule view, but used for FX option transactions.</p> <p>See the guide <i>TRM Instruments: Processing and Calculations</i> for more information about option schedules.</p>
Package	<p>Displays the <b>Package</b> view. If a transaction belongs to a package, the <b>Package</b> view displays the package ID, package main type, package type and package attributes. Package attributes include <b>System</b>, <b>Selling</b> and <b>Non Cancellable</b>. <b>Hidden</b> package types are not displayed in Transaction Manager. See <i>3.37 Package types (optional)</i> on page 147 for information on package types and attributes.</p>

Menu item	Description
Pricing	<p>Displays the <b>Pricing</b> view where you can view the outcome if a Pricing action has been carried out on a transaction.</p> <p>The following columns can be selected: Pricing Target, Target Value, Variable, Result, and the corresponding Transaction Number to which the values apply.</p> <p>See the guide <i>TRM Instruments: Processing and Calculations</i> for information relating to the pricing of specific types of instruments.</p>
Query	<p>Displays the <b>Query</b> view.</p> <p>This view is used to retrieve transactions that are already in the system for further processing: see <i>8.4.1 Retrieving transactions</i> on page 283.</p>
Repo	<p>Displays the <b>Repo</b> view.</p> <p>This view is used to add collateral to repo transactions: see the guide <i>TRM Instruments: Processing and Calculations</i> for more information about repos.</p>
Schedule	<p>Displays the <b>Schedule</b> view.</p> <p>The schedule is generated either from the transaction or (in the case of swaps) from the Leg view.</p> <p>In this view, you can view or enter more specific information from which the transaction's cashflows and related events are generated.</p> <p>For schedules defined as <b>Method = Irregular</b> (see also <b>Irregular Dates</b> below), you can specify more complex date information using the <b>New Irregular Date</b> right-click action.</p> <p>See <i>TRM Instruments: Processing and Calculations Guide</i> for more information about schedules.</p> <p>Note: For bond instruments, no schedule information is displayed in this view because it is already visible in the instrument definition.</p>
Transaction Condition	<p>Displays the <b>Transaction Condition</b> view where you can see detailed information about the conditions.</p> <p>The following columns are selected: Attributes, Condition, Condition Type, Date, Condition Set, Message, Rate, Reference Time, Reference, and Value.</p> <p>See <i>Chapter 17 Managing transaction conditions</i> on page 485.</p>
Transaction Condition Set	<p>Displays the <b>Transaction Condition Set</b> view where you can see the result of the evaluation.</p> <p>The following columns are selected: Attributes, Date, Condition Set, Message, User, and Value.</p> <p>See <i>Chapter 17 Managing transaction conditions</i> on page 485.</p>
Transaction Figure	<p>Displays the <b>Transaction Figure</b> view.</p> <p>This view gives a more detailed view of the key-figures for the selected transaction.</p> <p>You can modify some of the valuation parameters for an individual transaction in this view (for example, Figure Currency, Figure Date, and Figure Valuation Date).</p> <p>Intermediate results can also be viewed here: see <i>8.2.1.1 Calculating key-figures</i> on page 265.</p>
Valuation Approach	<p>Displays the <b>Valuation Approach</b> view.</p> <p>You can define/view the valuation approach used for the transaction.</p> <p>See <i>8.4.7.9 Defining the valuation approach at transaction level</i> on page 295 for more information.</p> <p>Note: This view is only activated if the instrument has been assigned with the <i>Mode/Transaction Specific Method</i> feature.</p>

Menu item	Description
Valuation Model	Displays the <b>Valuation Model</b> view. You can define/view the valuation model used to price structured products. See <i>8.4.7.10 Assigning valuation models at transaction level</i> on page 296 for more information. Note: This view is only activated if the instrument has been assigned with the <i>NumeriX Setup</i> and <i>NumeriX Valuation</i> features: see <i>4.7.7 Assigning calibration models to instruments</i> on page 199.
Valuation Spread	Displays the <b>Valuation Spread</b> view. You can add spread curves to a transaction in this view.

### 8.1.1.2 New

Menu item	Description
Transaction Ctrl+N	Inserts a new transaction row to allow you to capture a deal. See <i>8.2.1 Entering new deals in Transaction Manager</i> on page 264.

### 8.1.1.3 Action

Menu item	Description
Assignment (purchase)	Allows you to enter a swap (IRS/CCIRS) purchased during its life, by entering the net amounts exchanged with the seller.
FX Pair Shift	Allows you to enter an FX Pair Shift directly in Transaction Manager, without first having to create an FX transaction. See <i>8.2.1.8 Creating an FX pair shift</i> on page 270.

### 8.1.1.4 Tools

Menu item	Description
Refresh Static Data Recalculate Key Figures	Updates transaction data following modifications made to static data, key figures, or cashflows elsewhere in the system.

### 8.1.1.5 Options

Menu item	Description
Hide Warnings	Allows you to specify whether you want to display warning messages when there are missing or incorrect values in a transaction. By default, warning messages are displayed. Note: Holiday warning messages are not displayed if the date in question is defaulted from the instrument setup. For example, no warning message will be displayed if a bond's maturity date falls on a holiday because the maturity date is defined in the instrument's definition.

Menu item	Description
Discovery Console	<p>Opens <b>Discovery Console</b>. You can use the Discovery Console to do the following actions:</p> <ul style="list-style-type: none"> <li>• Display the valuation parameters (yield curves) for plain vanilla instruments (Bonds, FX Forward, Floater, Swap): see 8.2.1.2 <i>Displaying valuation parameters in the Discovery Console</i> on page 265.</li> <li>• Check the actions you cannot do on a transaction: see 8.4.7.5 <i>Checking the unavailable actions on a transaction</i> on page 293.</li> <li>• Check the transaction flow. For more information on how to check transaction flow, see the <i>TRM System Admin Guide</i>.</li> </ul>
Valuation Configuration	<p>Opens the <b>Valuation Parameters</b> dialog in which you can specify alternative parameters for calculating key-figures in your Transaction Manager view, thereby overriding the configuration of the instruments: see 8.2.1.1 <i>Calculating key-figures</i> on page 265.</p>
Pricing Configuration	<p>Opens the <b>Pricing Parameters</b> dialog in which you can specify alternative parameters for calculating prices in your Transaction Manager view.</p> <p>Note: For FX options, set up these parameters before running the <b>Pricing</b> action. The instrument must be correctly setup. See <i>TRM Instruments: Processing and Calculations Guide</i> for more information.</p>
Quote Default Configuration	<p>Opens the <b>Quote Default Configuration</b> dialog to enable you to apply different pricing parameters in your Transaction Manager view, thereby overriding the configuration of the instruments: see 8.2.1.4 <i>Defaulting prices</i> on page 266.</p>
Result Mode	<p>Enables you to change the <b>Transaction Manager</b> view to another result mode: see 8.2.1.5 <i>Changing result mode</i> on page 267.</p>
Active Transactions Only	<p>Enables you to specify whether you only want to view active transactions in Transaction Manager: see 8.4.1.2 <i>Retrieving active transactions</i> on page 285.</p>
Include Mirror Transactions	<p>If this option is switched on, all mirrored parent and child deals are fetched, even those not directly linked by the parent number, i.e. in the case of rollovers.</p>
Limit Setup	<p>Enables you to perform pre-trade and post-trade limit checks and to specify the default limit query book that you want to use: see 8.2.4 <i>Setting up a pre-trade limit check</i> on page 277 and 8.2.5 <i>Enabling limit queries at transaction level</i> on page 280.</p>
Preferred Package Main Type	<p>See 8.4.7.2.3 <i>Displaying packaged transactions</i> on page 292.</p>
Retrieve Full Package	<p>See 8.4.7.2.3 <i>Displaying packaged transactions</i> on page 292.</p>
Security Identifier Type	<p>Enables you to select which security identifier type to use. After you have retrieved the related transactions, you can then use the Security Identifier column (in the <b>Transaction</b> view) to select an instrument that uses the previously selected security identifier type.</p> <p>Note: You can query transactions by their security identifier or security identifier type in Transaction Manager's <b>Query</b> view.</p>

## 8.1.2 Start-up parameters

It is possible to alter the start-up parameters so that Transaction Manager launches in a different mode.

See *C.11 Transaction Manager* on page 685 for information about the options available.

## 8.1.3 Transaction Manager modes

Different modes of Transaction Manager can be configured for a particular purpose.

For example, the Deal Capture mode of Transaction Manager could be used to enter transactions in the Front Office, whereas the Final Transaction Admin mode could be used by the Back Office to verify transactions before settlement occurs.

In a typical TRM implementation, a different Transaction Manager mode may be configured for each stage in the transaction flow to correspond to each of the transaction states used. Only the transactions with the appropriate state are visible in the corresponding mode.

The following table describes possible transaction states:

State	Description
Open	The transaction is in the initial stage of the flow. The transaction is either a new transaction, that has not yet been committed, or a transaction that has been sent back in the flow, either to be corrected or to be canceled.
Trader Verify	The transaction has been committed (for example, in Deal Capture), and is ready to be verified by the trader.
Back Office Verify	The transaction has been verified at trader level and is ready for verification at back-office level.
Final	The transaction has been verified at back-office level and is ready for back-office processing.
Canceled	The transaction has been removed from the flow at trader level.

### 8.1.3.1 Filtering the view display

For some types of deals (for example, deals which involve two or more legs) you may find it easier if only part of the deal information is shown in the display. In some of the views, it is possible to filter the transaction data by leg, by cashflow, or by schedule. In which case, the selected filters are displayed in the title bar of the **Cashflow** view. In the case of **Filtered by...** filters, the filters and total number of displayed items are displayed when you have selected items in the relevant views. You can use a combination of filter options to show only very specific deal information. If you frequently use specific filters, you can save your filter selections with the layout.

For example, for deals involving swap instruments, if you only want to display the cashflows that relate to a specific leg: in the **Leg** view, select one or more items, then right-click anywhere in the **Cashflow** view, click **Filter** to open the filter options menu and select **Filtered by Leg**. Only the cashflows for the selected leg or legs are displayed.

In the same way, it is possible to only display transaction data that relates to a specific schedule: in the **Schedule** view, select one or more schedules, and then in the **Cashflow** view, right-click and select **Filtered by Schedule** filter option. Only the cashflows for the selected schedule or schedules are displayed.

Likewise, it is also possible to only display cashflows of a specific cashflow type or attribute, by selecting one or more cashflow types from the filter options. Not all cashflow types are available for filtering.

## 8.2 Capturing deals

In a typical TRM implementation, the Deal Capture mode of Transaction Manager is used to enter transactions in the Front Office (see *8.1.3 Transaction Manager modes* on page 262 for more information about modes).

As Transaction Manager can be configured in many different ways and used for different purposes (such as, capturing deals and performing actions on existing transactions), there is no single comprehensive procedure for all its uses. This section provides procedures for the main tasks that are common to all types of transactions.

Note that it is also possible to capture a new deal in a Transaction Manager view called Enter Board: see 8.2.3.3 *Capturing deals in Enter Board* on page 277 for more information.

---

**Note:** For details of processing procedures that are specific to a particular instrument, see the relevant section of the guide *TRM Instruments: Processing and Calculations*.

---

## 8.2.1 Entering new deals in Transaction Manager

To enter a new deal in Transaction Manager:

1. Select **New - Transaction** (or press **Ctrl+N**).
2. Enter the transaction information in the new row in the **Transaction** view.

---

**Note:** The auto-complete feature, which tries to predict the word you are typing, can help you to quickly enter transaction information in the fields. For more details, see 3.2.4.1 *Using auto-complete* on page 44. You can cancel the auto-complete feature by pressing **Esc**.

---

Some of the information required to enter a deal is common to all types of transactions:

Transaction column	Description
Instrument	Instrument ID used in the transaction.  Note: Some columns in the Transaction Manager view are disabled according to the nature of the transaction. For example, for deals involving bonds, the <b>Maturity Date</b> and <b>Currency</b> columns in the Transaction view are disabled, as are all columns in the Cashflow view.
Transaction Sign	Direction of the transaction.  If you enter a minus ("-") sign in front of the deal amount, the transaction sign defaults to Sell/Borrow and you do not need to specify the transaction sign.
Opening Date	First date the transaction is taken into account in calculations: <ul style="list-style-type: none"> <li>• For new transactions this is automatically the current date.</li> <li>• For back-dated deals, you need to enter the opening date before selecting the instrument.</li> </ul>
Portfolio	Portfolio in which the transaction is entered.
Counterparty	The counterparty of the transaction.  This is selected from the list of clients defined with the <code>Counterparty</code> role in Client Editor.

For details about the remaining information you need to enter a deal which is specific to certain types of instrument, see the relevant section of the guide *TRM Instruments: Processing and Calculations*.

3. Select one of the following actions from the **Command** menu:
  - **Apply** to save the transaction and not change the transaction state
  - **Commit** to save the transaction and move its state forward in the transaction flow.

After a transaction has been applied or committed, some information is automatically set by the system:

- Transaction Number: identifies the deal in the system
- State: shows the transaction's position in the workflow
- Status: gives additional information about the status of the deal.



### 8.2.1.1 Calculating key-figures

In Transaction Manager, you can either maintain the default valuation configuration defined at instrument level to calculate key-figures so that each deal is valued individually according to its setup, or you can override the parameters in the following ways:

- Specify alternative figure values in Transaction Manager’s Transaction Figure view or Cashflow/Event Figure view for a specific transaction or cashflow (for example, Figure Currency, Figure Date, and Figure Valuation Date).
- Apply a common valuation to all deals in the Transaction Manager view.  
In this case, your valuation configuration is modified without affecting the settings of other Transaction Manager users.

To apply a common valuation configuration to calculate the key-figures for all deals in Transaction Manager if you want to override the instrument configuration:

1. Select **Options - Valuation Configuration**.
2. In the **Valuation Parameters** dialog, enter the values you want to apply.

Information	Description
Date	Date on which all key-figures display their values. The key-figures are displayed in the Figures view.
Currency	Currency into which the key-figures are converted.
Scenario	Scenario you want to use.
Valuation Mode	Valuation mode: Default, Benchmark, or Theoretical.
Include Realized Results	Switch on to include realized results in the valuation.

3. Click **OK** to apply the valuation configuration.

### 8.2.1.2 Displaying valuation parameters in the Discovery Console

After you have calculated the key figures, you can display the valuation parameters (yield curves) for plain vanilla instruments (Bonds, FX Forward, Floater, Swap), as well as some floaters specific to key figures, such as volatilities.

For each cashflow, the Discovery Console displays:

- The valuation and discount curve.
- The estimation curve in case of a floater.

For floaters, the Discovery Console displays additional volatilities figures, such as:

- For Cap/Floors, the volatility used to calculate Cap/Floor adjustment factor.
- For Constant Maturity/In Arrears, the volatility used to calculate Constant/In Arrears adjustment factor.

To display the valuation parameters:

1. Select the transaction and run the valuation configuration (**Options - Valuation Configuration**).
2. Select **Options - Discovery Console**.
3. In the **Discovery Console** dialog, the calculated key figures are displayed in the lower part of the dialog.

4. Additionally, you can select **Regular Expression** and enter a regular expression or use the **Filter** field and **Apply** to display one particular figure.

**Hint:** For example, to display the figures for a particular cashflow, enter the cashflow number in the **Filter** field and click **Apply**. The Discovery Console updates the displayed figures to match the filter.

### 8.2.1.3 Using fractional prices

If a default price denominator is set up at the instrument level (**Bond** page - **Default Price Denom.**), you can use fractional prices in the Deal Price column in Transaction Manager.

The following table shows the various notations that can be used:

Notation	Value of the Expression	Example
A_N where A and N are integer numbers	$A + N / D$	35_15 with a default price denominator of 32nd represents $35 + 15 / 32$
A_N/D where A and N are integer numbers and D a power of 2	$A + N / D$	28_14/16 represents $28 + 14 / 16$
A_N+ or A_N/D+ where the + sign stands for an additional half unit A_N/D+	$A + (N + \frac{1}{2}) / D$	10_31+ with a default price denominator of 32nd represents $10 + 31.5 / 32$
A_N1/D1 N2/D2 Introduces a second denominator D2 which must be a power of 2	$A + (N1 + N2/D2) / D1$	12_14 1/4 represents $12 + (14 + \frac{1}{4}) / 32$ Note: D1 or D2 may be omitted.

### 8.2.1.4 Defaulting prices

In Transaction Manager, you can either maintain the default quote information defined at instrument level so that each deal is priced individually according to its setup, or you can override the parameters of each instrument to apply a common defaulting policy to all deals.

**Note:** Modifying your quote default configuration does not affect the Transaction Manager settings of other Transaction Manager users.

The defaulting of the deal price (or the deal rate) for quoted instruments is defined using the **Quote Default** feature in the instrument definition. This feature works together with the **Quoted** feature with which you define the market quote type of a quoted instrument. See the guide *TRM Instruments: Processing and Calculations* for more information about these features.

To set your default pricing configuration in Transaction Manager if you want to override the instrument configuration:

1. Select **Options - Quote Default Configuration**.
2. In the **Quote Default Configuration** dialog, enter the values you want to apply:

Information	Description
Mode	Pricing mode. Choose from: <ul style="list-style-type: none"> <li>• <b>[From Instrument]</b> (default): To use the pricing mode defined in the instrument definition.</li> <li>• <b>Automatic:</b> To retrieve the quotes automatically into Transaction Manager.</li> <li>• <b>Manual:</b> To retrieve the quotes manually.</li> </ul>

Information	Description
Method	<p>Defaulting method: <b>[From Instrument]</b> (default), <b>Ask, Bid, Bid/Ask (Spread Against), Bid/Ask (Spread in Favor)</b>, or <b>Mid</b>.</p> <ul style="list-style-type: none"> <li>• If you select <b>Bid/Ask (Spread Against)</b>: when the transaction sign is positive, the Ask price is used; when the transaction sign is negative, the Bid price is used.</li> <li>• If you select <b>Bid/Ask (Spread in Favor)</b>: when the transaction sign is positive, the Bid price is used; when the transaction sign is negative, the Ask price is used.</li> </ul>
Scenario	<p>Scenario you want to use to price the transactions.</p> <ul style="list-style-type: none"> <li>• <b>[From Instrument]</b>: To use the scenario defined in the instrument definition.</li> </ul>

3. Click **OK** to save the configuration.
4. Depending on pricing mode you selected, choose one of the following options:
  - If the **Mode** = *Automatic*, the Deal Price (or Deal Rate) fields are updated.
  - If the **Mode** = *Manual*, right-click inside the **Transaction** view and select **Quote Default** to retrieve the quotes for the transactions.

---

**Note:** If you have manually modified a transaction, select **Quote Default** to reset the quote according to the mode configuration.

---

### 8.2.1.5 Changing result mode

A result mode drives the calculation of results, and effectively one single transaction can simultaneously be treated in as many ways as there are result modes. In Transaction Manager, it is possible to change the display in order to view transactions according to each configured result mode.

- Select **Options - Result Mode** and choose the result mode in which you want to display the transactions.

---

**Note:** For more information about result modes, see *19.1 Parallel accounting* on page 533.

---

### 8.2.1.6 Entering competitive quotes

In the Competitive Quote view of Transaction Manager, you can enter details of any competing quotes you receive from your counterparties.

When you have received and compared all offers from your counterparties, you can select the best offer and update the transaction with the new values.

For example, for an FX swap, when the competitive quote's counterparty is flagged as **Chosen**, the Near Quote and Quote update the transaction fields for the FX swap as follows:

- Near Quote updates the transaction field **Nominal/Spot Rate**
- Quote updates the transaction field **Deal Rate**.

To be able to enter competitive quotes for a transaction, the relevant feature must be included in the instrument definition:

- **Competitive Premium** for Cap/Floor/Collar instruments, FRA Options, FX Options, and Swaptions
- **Competitive Price** for Equities
- **Competitive Rates** for Discount Papers, FRA contracts, FX transactions, and Short-Term Loans
- **Competitive Price** or **Competitive Rates** for Bonds and Credit-step-up instruments, whichever is appropriate

- **Competitive Rates (FX Swap)** for FX swaps.

---

**Note:** See the guide *TRM Instruments: Processing and Calculations* for more information about these features.

---

To enter and select a competitive quote:

1. In Transaction Manager, select the transaction for which you want to enter a competitive quote.
2. Select **View - Competitive Quotes** to display the **Competitive Quote** view in the Transaction Manager window (make sure that the view's columns are selected using **View - Select Columns**).
3. Right-click the transaction and select **New Competitive Quote**.
4. Enter the competitive quote details in the new row as follows:
  - The name of the counterparty in the **Counterparty** field.
  - The deal price, the deal rate, or the premium amount, whichever is appropriate, in the **Quote** field.
  - For an FX Swap, the rate of the near leg is displayed in the **Near Quote** field.

---

**Hint:** You can remove a quote you have entered by selecting **Delete Competitive Quote**.

---

5. To select the preferred quote in either the **Near Quote** or **Quote** fields, set the **Chosen** column to **Yes**.

The transaction is updated with the quote details (the counterparty and cashflow amount).

### 8.2.1.7 Adding charges and fees

In Transaction Manager, you can capture an unlimited number of transaction charges or fees at deal entry.

You can manually add a charge or fee to a cashflow at deal entry if the **Manual Charges** feature is applied to the instrument definition.

It is also possible to apply a charge automatically on a cashflow or transaction by applying a charge rule at instrument level using either the **Cashflow Charges** or **Transaction Charges** feature: see *TRM Instruments: Processing and Calculations Guide* for more information about these features.

For information about setting up charge rules, see 3.26 *Cashflow charges (optional)* on page 135 and 3.46 *Transaction charges (optional)* on page 155.

To manually attach a charge or fee to a cashflow:

1. Right-click the cashflow to which you want to add the charge.
2. Select **Create Charge**.
3. Select the charge you want to apply from the resulting list.

---

**Note:** Charges are set up in Cashflow Type Editor: see 3.28 *Cashflow types (optional)* on page 139.

---

4. Fill in the details of the charge in the **Charge** view using the information in the following table:

Information	Description
Amount	Amount of the charge or fee. This is calculated as the equivalent of the Payment Amount at the Payment FX spot rate when the Payment Currency is different from the Currency.

Information	Description
Amount %	Percentage of the Reference Value. This field is only used if you manually enter a percentage charge: it is not populated for automatically generated charges.
Amount Rounding	The rounding precision you want to use for this charge.
Attributes	Attributes of the charge: <ul style="list-style-type: none"> <li>• Amortize: the charge needs to be amortized</li> <li>• All-in: the charge needs to be included in the All-in Price/Yield</li> <li>• Re-offer: the charge needs to be included in the Re-offer Price/Yield</li> <li>• External: a system-required attribute This attribute identifies the charge as unique to the transaction. By default it is on.</li> <li>• User: a system-required attribute This attribute identifies the charge as manually added in TRM. By default it is on.</li> </ul> <p>Note: See 3.28 <i>Cashflow types (optional)</i> on page 139 for more information.</p>
Counterparty Client	Counterparty Client if different from the Credit Client.
Currency	Currency of the charge amount. This is always equal to the currency of the cashflow.
Payment Amount	Amount of the charge in the payment currency when Payment Currency is different to the currency of the charge amount.
Payment Currency	Currency in which the charge is paid.
Payment Date	Payment date of the charge. This value is copied from the cashflow row in which you created the charge.
Payment FX Rate	Exchange rate between the Currency and the Payment Currency. The default rate is the current (last available) FX spot rate in the accounting scenario of the owner of the transaction.
Reference Value	Value used to calculate Amount with Amount %. By default it is the Nominal Amount.
Value Date	Value date of the charge. This value is copied from the cashflow row in which you created the charge.

5. Click **OK**.

### 8.2.1.7.1 Transaction charges and yield/price calculations

In addition to the transaction yield and price that are calculated without considering any added charges, for bonds, loans, and discount papers, the system can also take some or all of these charges into account in yield/price calculations:

- All-in yield and price are calculated using any charges that have the All-In attribute
- Re-offer yield and price are calculated using any charges or fees with the Re-Offer attribute.

These attributes can be set either manually in Transaction Manager's Cashflow view, or defined for the charge in Cashflow Type Editor (see 3.28 *Cashflow types (optional)* on page 139).

---

**Note:** Only charges with the same value date as the transaction settlement date are taken into account in the calculation of all-in and re-offer yield/price calculations. For the purpose of yield calculations, any charges in a currency different from the transaction currency can be converted into the transaction currency using defaulted or manually entered FX rates.

---

### 8.2.1.8 Creating an FX pair shift

In Transaction Manager's Deal Capture mode, you can split a position from one underlying currency pair into two new positions, each of which contains one of the currencies with a third currency (usually, the portfolio currency).

For example, if the portfolio currency is EUR, and you make a trade where GBP is bought for JPY, you may wish to separate this trade into two deals, one where GBP is bought for EUR, and another where JPY is sold for EUR. You need to enter the reverse of the deal you want to shift from: you enter the FX pair shift as if you are selling GBP and buying JPY.

There are two ways of creating an FX pair shift: you can either split a position on an existing FX transaction or you can enter an FX pair shift directly. In both cases, the information required to process the FX pair shift is the same.

To create an FX pair shift in Transaction Manager's Deal Capture mode:

1. Do one of the following:
  - If you have an existing FX transaction that you want to base the FX pair shift on, you can split the position using the **FX Pair Shift** right-click action on the selected deal.  
  
Note that this processing action is only available if the **Allow-FX-Pair-Shift** feature has been assigned to the instrument: see *TRM Instruments: Processing and Calculations Guide* for more information.
  - If you want to create an FX pair shift directly, select **Action - FX Pair Shift**.
2. In the upper part of the **FX Pair Shift** dialog, enter the required data.

Note that you need to enter the reverse of the deal you want to shift from.

Information	Description
Instrument	FX instrument to use for the transaction.
Sign	Direction of the transaction: Buy or Sell.
Base CCY Quote CCY	Base and quote currency of the FX pair shift (the reverse deal).
FX Rate	FX rate of the reverse deal.
Opening Date	First date the transaction is taken into account in calculations.
Value Date	Official date when money is transferred.
Base Amount	Amount of the FX transaction in the base currency.
Quote Amount	Amount of the FX transaction in the quote currency. This value is calculated by the system using the above <b>FX Rate</b> .
Portfolio	Portfolio in which the transaction is entered.
Shift CCY	The third currency of the FX pair shift (usually, the portfolio currency). This value defaults to the base currency of the portfolio entered in the <b>Portfolio</b> field, but can be modified.
Counterparty	The counterparty of the transaction.
FX Rate	FX rate of the <b>Base CCY</b> and the <b>Shift CCY</b> .

TRM calculates the remaining values according to the FX rates of the underlying currency pair against the third currency. Note that:

- If you have based the FX pair shift on an existing transaction, most of the values in the **FX Pair Shift** dialog are filled automatically with the data from the selected deal, but some can be modified.

- If you have created an FX pair shift directly, only the **Opening Date** field in the **FX Pair Shift** dialog is populated (with today's date): the remaining data needs to be entered.

3. Click **OK** to split the position: TRM generates the transactions.

In the example, the FX pair shift would generate three transactions as follows:

- Sell GBP Buy JPY (the reverse of the initial deal)
- Sell JPY Buy EUR
- Sell EUR Buy GBP.

### 8.2.1.9 Trade assignment

A transaction can be bought during its life from an external counterparty, by paying or receiving settlement amounts for each leg. This amount is not paid to the counterparty of the new transaction but is paid to the seller.

Required data for assignment are:

Information	Description
Opening Date	Opening date of the transaction.
Instrument	Instrument to use for the transaction (such as IRS/CCIRS deals).
Sign	Buy or Sell.
Portfolio	Portfolio where the transaction is entered.
Counterparty	Counterparty of the purchased transaction.
Beneficiary	External counterparty from whom the swap is purchased.
Net Amount Method	<ul style="list-style-type: none"> <li>• Dirty: accrued interest is already included in the settlement amount/price</li> <li>• Clean: accrued interest is paid separately</li> </ul>
Net Amount (Leg1/Leg2)	Settlement amounts for each leg exchanged with the original owner of the transaction.

You can complete transaction characteristics as usual in Transaction Manager. Start dates of schedules must be equal to the last interest date for correct computation of accrued interest from the last interest to assignment value date.

A new transaction is created, with settlement cashflows exchanged with the original owner of the transaction. To undo the action, you can cancel the generated transaction.

## 8.2.2 Canceling deals

You can cancel a deal in Transaction Manager's Deal Capture mode, if after entering it you decide you no longer wish to proceed.

Canceling a transaction in this way results in either of the following:

- If the deal has not been applied, the deal is removed from the database.
- If the deal has been applied, the transaction remains in the database, and the status of the transaction changes to Cancelled.

Transactions with Transaction Status = Canceled can only be removed from the database using the appropriate Transaction Manager mode (for example, Cancellation or Admin).

To cancel a transaction:

1. Select the transaction that you want to cancel.
2. Select **Command - Cancel**.

### 8.2.3 Entering new deals in Enter Board

Enter Board is an application which is opened from Transaction Manager's **View** menu. It offers an alternative, less complex way in which to capture deals.

Using layouts, Enter Board can be configured to show only the minimum number of fields necessary to enter a deal and to enter values automatically, such as counterparties or currencies, using macros. You can also add settlement instructions in the Enter Board. Settlement instruction fields differ depending on the selected instrument. For example:

- For FX: There are two sets of instruction fields, one set for currency 1 and one for currency 2. For example, **Cpty Account (Currency 1), Cpty Account (Currency 2), Our Account (Currency 1), Our Account (Currency 2)** etc.
- For bonds and other deliverable IR instruments: There are three sets of instructions for settlement, payback and delivery. For example, **Cpty Account (Settlement), Cpty Account (Payment), Cpty Account (Delivery), Our Account (Settlement), Our Account (Payment), Our Account (Delivery)** etc.
- For loans, swaps and other non deliverable IR instruments: There are two sets of instructions for settlement and payback. For example, **Cpty Account (Settlement), Cpty Account (Payment), Our Account (Settlement), Our Account (Payment)**.
- For payments: There is one set of instructions. The fields are **Our Client, Our Bank, Our Account, Counterparty Client, Counterparty Bank, Counterparty Account**.
- For transfers: There is one set of instructions for the inflow and one set for the outflow. The fields are **Receiving Client, Receiving Bank, Receiving Account, Receiving Correspondent Bank, Paying Client, Paying Bank, Paying Account, Paying Correspondent Bank**.

In the Enter Board, it is also possible to set up lists of favorites, for example, a list of the currencies or the instruments in which you most often trade.

Layouts can be configured for each instrument group or instrument type and some standard default layouts are supplied at implementation, although it is possible to modify them later.

For example, if you select a layout designed to enter FX transactions, only the fields relating to this type of deal are displayed. If you click on the field button, the dialog only shows instruments for a specified group and it is not possible to navigate to any parent group. Furthermore, in the Instrument field, the auto-complete selection list which appears as you type, only suggests matches that belong to the current instrument group.

Transaction Manager and Enter Board are linked – whenever you enter a new transaction in Enter Board, it simultaneously appears in Transaction Manager. The fields that are available in the Enter Board view are the same as the fields in Transaction Manager. However, Enter Board layouts typically contain a subset of Transaction Manager's fields, that is, only the fields that are necessary to enter a certain type of trade. Because you can easily switch from one application to another, if a field you require is not present in the Enter Board layout, you can either edit the Enter Board layout, or enter the information in the field in Transaction Manager.

#### 8.2.3.1 Enter Board menus

Most of the menu items in Enter Board are the same as the menu items in Transaction Manager (see *8.1.1 Transaction Manager menus* on page 258). The following tables describe the menu items which are specific to Enter Board and any layout which is based on this application.

Other menu items which are common to all applications are described in *2.2.6 Using application menus* on page 34.

##### 8.2.3.1.1 File

Menu item	Description
Data Layout	Opens a dialog so you can select the correct field configuration to go with the current layout. This dialog also opens when you are importing a new Enter Board layout: see <b>File - Import</b> .



Menu item	Description
Instrument Group	Selects the default instrument group of the instrument that is displayed in the <b>Instrument</b> field.
Import	Opens the <b>Open</b> dialog so you can select the layout you want to import into Enter Board. Usually, this is done for you at implementation. See also <b>File - Data Layout</b> .
Export	Opens the <b>Save As</b> dialog so you can make an Enter Board layout available to other users in the organization, for example, on a shared network. Usually, this is done for you at implementation.
Hide	Allows you to remove Enter Board from your desktop display. To make Enter Board reappear, select <b>View - Enter Board</b> in Transaction Manager.

#### 8.2.3.1.2 Edit!

Menu item	Description
Edit Layout	Displays the Edit toolbar so you can modify an imported layout. This toolbar enables you to toggle between the edit mode and the normal mode of Enter Board. In the edit mode, you can add more fields or rows to a layout, move fields or rows, change the name of a field's label, or delete fields. See <i>8.2.3.2.1 Editing Enter Board layouts</i> on page 274.

#### 8.2.3.1.3 Command

Menu item	Description
Apply Reset Clear Accept Reject Cancel	Allows you to carry out different types of commands on entities. See <i>2.2.10.1.2 Command</i> on page 37 for more information about using commands.

#### 8.2.3.1.4 Macro

Menu item	Description
Edit...	Opens the <b>Macros</b> dialog so you can create a new macro or edit an existing one. Macros are displayed in the Macro toolbar. Macros are saved with the layout. See <i>8.2.3.2.3 Defining Enter Board macros</i> on page 275.

#### 8.2.3.1.5 New

Menu item	Description
Transaction	Clears the Enter Board fields in the layout so you can capture a new deal: see <i>8.2.3.3 Capturing deals in Enter Board</i> on page 277. See also <i>8.2.1 Entering new deals in Transaction Manager</i> on page 264 for more information.

### 8.2.3.1.6 Action

Menu item	Description
Duplicate	Actions which can be performed on the transaction.
Regenerate Cashflows	In Transaction Manager, these actions become available when you select a transaction in the appropriate view of Transaction Manager and right-click. See 8.4.7 <i>Performing actions on deals</i> on page 289.

To open Enter Board, do one of the following:

- Select **View - Enter Board** from the Transaction Manager menu
- Click the **Enter Board** icon in the toolbar.

### 8.2.3.2 Enter Board layouts

Enter Board layouts are configured at implementation, imported into the application, and saved to the TRM database. Some standard default layouts are also delivered with TRM.

Any of the fields from Transaction Manager's Transaction or Schedule views (and Cashflow view for cash transactions) can be included in the layout. Typically, the layout contains a subset of Transaction Manager's fields, that is, only the fields that are necessary to enter a certain type of trade. A data layout file defines which of these fields are present in the layout, but this can be modified by adding, removing, or renaming fields.

You can also further configure the layout within Enter Board, to create macros and a list of favorites for even faster deal entry.

Layouts are available for selection from the **Layout - My Layout** menu item.

#### 8.2.3.2.1 Editing Enter Board layouts

It is possible to modify a layout using the Edit layout toolbar. This toolbar is displayed when Enter Board is in edit mode. The **Edit!** menu enables you to toggle between the edit mode and the normal mode of Enter Board.

From the Edit layout toolbar, it is possible to add more fields to a layout or rename existing fields, for example, for a layout used to enter Credit Default Swaps, the **Deal Price** field can be renamed **Spread**.

As well as adding, renaming, or deleting fields or rows, you can also move the fields or rows in the Enter Board to a layout that best meets your purposes. To move a field or row, select the field or row and press **Ctrl** + arrow key to move the field or row in the chosen direction.

You can edit the Enter Board layout as follows:

Menu item	Description
Insert a row	Inserts a new row into the layout.
Insert a field	Inserts the field you chose from the drop-down list into the selected row. You can only insert fields that are not already in the layout, i.e. <b>Insert a field</b> is not enabled.
Insert a spacer	Inserts a space in the row so you can add another field.
Insert a label	Allows you to add a label to the row. A text field becomes active in which you can either enter a name for the label or rename a selected field.
Set label of the element	Saves the name you have given to the label or field. Note: If you rename a field, the new label name is also displayed in the list of available columns when you define a macro: see <i>8.2.3.2.3 Defining Enter Board macros</i> on page 275.
Restore original label	If you have changed a field's name, restores the standard name of the field.
Set relative element width	Allows you to increase (or decrease) the width of the field or label.
Delete selected element	Removes the selected row, field, or label from the layout.

---

**Note:** It is also possible to edit an Enter Board data layout file using an XML editor. This may be the preferred method for a complex layout. However, in most cases, Enter Board's edit mode should prove more than sufficient.

---

### 8.2.3.2.2 Defining Enter Board favorites

In Enter Board, to make data entry much easier, you can define a list of favorites, for example, a list of counterparties or a list of currencies that you frequently use.

To define a list of favorites in a layout:

1. In Enter Board, select the layout for which you want to define some favorites.
2. Right-click the field that corresponds to the list of favorites you want to create.  
For example, if you want to create a list of favorite currencies, right-click the **Currency** field.
3. Select **Favorites**.
4. In the **Favorites** dialog, do one of the following:
  - Click **Select** to open the selection list which corresponds to the field, and select each entity or value you want to include in the list of favorites.
  - Enter the value directly in the field in the top of the dialog and click **Add**.

You can change the order in which the items are listed by clicking **Move Up** or **Move Down**. You can also remove an item from the list by clicking **Remove**.
5. Repeat the procedure to create any other lists for the fields in the layout.
6. Select **Layout - Save** to save the favorites with the layout.

### 8.2.3.2.3 Defining Enter Board macros

In the Enter Board, you can use macros to define the common attributes of the transactions in which you frequently deal, such as Instrument ID, Counterparty, Currency, and Amount. For example, you may want to define a macro for a Depo/Loan transaction for 1M EUR with XYZ London as the counterparty.

When you select a macro, TRM automatically populates the corresponding Enter Board fields with the defined values.

To define a new macro in a layout:

1. In Enter Board, select the layout for which you want to define a macro.
2. Select **Macro - Edit** to open the main **Macros** dialog.
3. Click **Add** and fill in the **Macro Properties** dialog as follows:

Information	Description
Name	Name of the macro.
Hotkey	Press the key combination you want to use if you want to assign a keyboard shortcut to the macro, for example: Ctrl + <letter> or Ctrl + Shift and/or Alt + <letter> A warning message is displayed if the <b>Hotkey</b> is already in use.
Clear remaining unspecified fields	Switch on to clear all fields not specified in the macro.
Save as a new macro	Switch on to make a copy of an existing macro: see 8.2.3.2.4 <i>Modifying Enter Board macros</i> on page 276.

4. Click **OK** to add the macro name and corresponding hotkey to the list on the left side of the **Macros** dialog.
5. Select the fields you want to include in the macro from the list of available fields displayed in the center of the dialog.

If you have renamed a field label, the new name is also available for selection from the list: see 8.2.3.2.1 *Editing Enter Board layouts* on page 274.

Although you can order the fields as you wish, it is recommended that the selected fields are listed in a similar order to the fields in the layout to avoid errors in the calculation of certain values.

6. For each of the fields you have selected, specify the value:
  - Select the field in the right side of the dialog.
  - Enter or select the value in the **Value** field and click **Set**.
7. Click **OK** to close the dialog.

The macro is available either from the **Macro** toolbar or from the **Macro** menu (or by using the corresponding hotkey).

8. Select **Layout - Save** to save the macro with the layout.

#### 8.2.3.2.4 Modifying Enter Board macros

You can edit or remove macros that you have created using the corresponding buttons in the **Macros** dialog. You can also set up a new macro by editing an existing macro.

To modify a macro or create a new macro by modifying an existing one:

1. In Enter Board, select the layout which contains the macro you want to modify.
2. Select **Macro - Edit** to open the main **Macros** dialog.
3. Select the existing macro from the left side of the **Macros** dialog.
4. Modify the macro's values as required, and do one of the following:
  - If you have no further changes to make, click **OK** to close the **Macros** dialog and save the changes.

- If you want to create a new macro from the existing macro, click **Edit**, and fill in the **Macro Properties** dialog as follows:

Information	Description
Name	Name and keyboard shortcut for the new macro.
Hotkey	Note: The <b>Name</b> and the <b>Hotkey</b> of the new macro must not already be assigned to any other macro (including the one currently being edited).
Save as a new macro	Switch on to save the macro as a new one.

- Click **OK** to close the **Macro Properties** dialog.

5. Click **OK** to close the **Macros** dialog.

### 8.2.3.3 Capturing deals in Enter Board

To capture a deal in Enter Board:

1. Select the layout that corresponds to the type of deal you want to capture using the **Layout** menu.
2. Select **New - Transaction** to clear the fields in Enter Board.

A new blank row is also added in the Transaction view of Transaction Manager.

3. Enter the transaction information.

As you enter information in Enter Board, it is displayed in the corresponding fields in Transaction Manager.

4. Select one of the following actions from the Enter Board toolbar:

- **Apply** to save the transaction and not change the transaction state
- **Commit** to save the transaction and move its state forward in the transaction flow.

Once a transaction has been applied or committed, some information is automatically set by the system:

- Transaction Number: identifies the deal in the system
- State: shows the transaction's position in the workflow
- Status: gives additional information about the status of the deal.

You can reset a deal to cancel any modifications made since the last time it was applied by clicking **Reset**.

5. If you need to complete any other actions on the deal (for example, you need to manually add a charge), do so in Transaction Manager.

See the relevant section in *8.2.1 Entering new deals in Transaction Manager* on page 264 for more information.

## 8.2.4 Setting up a pre-trade limit check

Pre-trade limit checks and post-trade limit lookups are designed to enable you to easily identify which limits are affected by a specific transaction. The main difference between the two functions is that a pre-trade limit check can only be executed from a new transaction (i.e. a transaction that has not yet been saved in the database) whereas a post-trade limit lookup is executed from an existing transaction with a transaction number.

### 8.2.4.1 Defining limit check conditions

You can define limit check conditions for pre-trade (simulated) limit checks as well as for post-trade limit lookups.

To define limit check conditions:

1. In Transaction Manager, click **Options - Limit Setup**.

---

**Note:** The setup dialog is available in all Transaction Manager applications which have been started with the `-v` limit parameter.

---

2. Enter the following information in the resulting dialog:

Information	Description
Limit Monitor Book	The name of the book that will display the affected limits in Limit Monitor (see <i>8.2.4.2 Setting up Limit Monitor books</i> on page 278 for more information).
Limit Monitor Servers	One or more limit servers against which the limit check from a new transaction or a limit lookup from an existing transaction will be processed.

3. Click **OK**.

### 8.2.4.2 Setting up Limit Monitor books

It is recommended that you set up one or more Limit Monitor books specifically for pre-trade limit checks and post-trade limit lookups (see *16.3 Limit Monitor* on page 471 for information on how to create books). The default book is **TM-LIMIT-CHECK**.

The affected limits identified by a limit check and limit lookup can be filtered through Limit Monitor queries used on the respective pages of the book. These queries should be set up to display different types of limits on the most suitable pages. They can also be used to display only a subset of affected limits (such as counterparty trading limits) by querying limits in a specific category only (see *16.3.3.3 Configuring limit selection and queries* on page 475 for more information).

### 8.2.4.3 Processing pre-trade limit checks

A limit check can be used to identify all limits that will be affected by a new transaction before the transaction has been created in the system.

The system identifies one or several limit servers against which the limit check must be executed (as defined in **Limit Setup** in Transaction Manager). The transaction is given a temporary Limit Check Number and sent to the servers, which process it like a real transaction. If the limit check is executed against a simulated server, new limit amounts are calculated for each affected limit as usual. If it is executed against a real server, affected limits are identified but no new limit amounts are calculated; this is to avoid triggering incorrect violations and log entries from pre-trade limit checks. The servers generate a list of affected limits as output. Affected limits are all sublimit outputs affected by the new transaction (in the case of expanded sublimits, only rows affected by the transaction are included).

Limit Monitor is launched automatically (if it is not already started) and displays the limits affected in the book that you specified in the **Limit Setup**.

---

**Note:** All Limit Monitor queries saved as part of the page setup are applied to the overall list of affected limits. This feature can be used to display a subset of affected limits (e.g. counterparty limits) or to split the presentation of affected limits across several pages, each of which is set up to support the display of specific limit types (credit, settlement, risk, etc.).

---

To process a pre-trade limit check you need to:

1. Create a transaction in Transaction Manager. The transaction must be logically complete and must have a cashflow structure with dates and amounts as if it were a final transaction. It should not however be saved in the database.
2. Select **Limit Check**, either from the **Action** menu of the Enter Board, or by right-clicking on the active transaction in the **Transaction** view of Transaction Manager and selecting **Limit Check**.

---

**Note:** This action is available for all new transactions that do not yet have a transaction number, in all Transaction Manager applications, which have been started with the `-v` limit parameter.

---

3. In Transaction Manager, you can now do one of the following:
  - Click **Apply** to create the transaction in the database. All effects of the Limit Check Number on the limit amount are removed from the server and replaced by those of the actual transaction.
  - Click **Reset** or **Cancel**. The working version of the transaction is removed from Transaction Manager, and all effects of the Limit Check Number on the limit amount are deleted from the server.
  - Select **Cancel Limit Check** from the right-click menu. All effects of the Limit Check Number on the limit amount are deleted from the server.
  - Modify the transaction (e.g. change the **Nominal Amount** or **Counterparty**) and select **Limit Check** from the right-click menu. The current effects of the Limit Check Number on the limit amount are deleted from the server, and a new limit check is processed, resulting in a new set of affected limits and/or new limit amounts.

#### 8.2.4.4 Processing post-trade limit lookups

A post-trade limit lookup can be used to identify all limits affected by an existing transaction at any time after the transaction has been created in the system.

The system identifies one or several limit servers against which the limit lookup must be executed from the **Limit Setup** given in Transaction Manager. The servers generate a list of affected limits as output. Affected limits are all sublimit outputs affected by the transaction (in the case of expanded sublimits, only rows affected by the transaction are included).

Limit Monitor is automatically launched (if it is not already started) and displays the limits affected in the book that you specified in the **Limit Setup**.

---

**Note:** All Limit Monitor queries saved as part of the page setup are applied to the overall list of affected limits. This feature can be used to display a subset of affected limits (e.g. counterparty limits) or to split the presentation of affected limits across several pages, each of which is set up to support the display of specific limit types (credit, settlement, risk, etc.).

---

To process a post-trade limit look-up you need to do the following:

1. Select an existing transaction in Transaction Manager.
2. Select **Limit Lookup**, either from the **Action** menu of the Enter Board, or by right-clicking on the active transaction in the **Transaction** view of Transaction Manager and selecting **Limit Lookup**.

---

**Note:** This action is available for all transactions in all Transaction Manager applications, which have been started with the `-v` limit parameter.

---

3. You can now do one of the following:
  - Close the Limit Monitor application.
  - Select a transaction in Transaction Manager and execute the **Limit Lookup** action.

## 8.2.5 Enabling limit queries at transaction level

A limit query enables you to launch Limit Monitor directly from a transaction and to process some client values (normally, Counterparty) of the transaction to limit queries according to how you have set up the external parameters in Limit Monitor. See *16.3.3.3 Configuring limit selection and queries* on page 475.

### 8.2.5.1 Defining the limit query book

In order for you to execute the Limit Query action, you must define limit server, if it is not already defined (see *8.2.4.1 Defining limit check conditions* on page 233), and the limit query book to be used described in the following steps.

To define the limit query book:

1. In Transaction Manager, click **Options - Limit Setup**.

---

**Note:** The setup dialog is available in all Transaction Manager applications, which have been started with the `-v` limit parameter.

---

2. Enter the following information in the resulting dialog:

Information	Description
Limit Query Book	The name of the book from where the queries will be executed that contains the mapped external parameters (see <i>16.3.3 Configuring limits</i> on page 473 for more information).

3. Click **OK**.

### 8.2.5.2 Processing limit queries

To process the limit query: select a transaction in Transaction Manager, and execute the **Limit Query** action, either from the **Action** menu of the Enter Board, or by right-clicking on the active transaction selecting **Limit Query**.

---

**Note:** This action is available for all transactions in all Transaction Manager applications, which have been started with the `-v` limit parameter.

---

Limit Monitor opens the book specified in **Limit Setup** and executes the query on each page of the book according to the mapped external parameters.

## 8.3 Managing settlement instructions

Standard settlement instructions are specified in the client definition and assigned automatically at deal capture to each payable cashflow.

Rules (defined in Rule Editor) determine which instructions are used for which type of transaction or cashflow. If two rules match the same transaction or cashflow, TRM applies the rule with the highest priority (lowest number).

See *3.13.1.13 Setting up client settlement instructions* on page 100 and *18.3 Generating and processing settlements* on page 510 for more information.

### 8.3.1 Modifying settlement instructions

Settlement instructions can be viewed in the **Instructions** view of Transaction Manager. Each instruction affects one or more cashflows. There is a separate row for each instruction in the transaction.



Settlement instructions are defaulted based on the standard settlement instruction (SSI) definitions in the **Settlement Instructions** page of Client Editor. If the system setup allows, you can modify the defaulted settlement instructions in the **Instructions** view of Transaction Manager. The two ways of modifying settlement instructions are described below.

### 8.3.1.1 Selecting another SSI

To select another SSI:

1. In Transaction Manager, select the transaction for which you want to modify instructions.
2. Select **View - Instructions** to display the **Instructions** view.
3. In the **Instructions** view, right-click and choose **Select Counterparty Instructions** or **Select Our Instructions** (depending on which SSI you want to modify).
4. From the selection list, choose the SSI to be used in the settlement.
5. Save the changes you have made to the transaction using the appropriate command to move its state forward in the transaction flow.

### 8.3.1.2 Changing the banks and accounts in the settlement chain

To change any of the banks and accounts in the settlement chain:

1. In Transaction Manager, select the transaction for which you want to modify instructions.
2. Select **View - Instructions**. Click in the field you wish to edit and select a new value.

---

**Note:** The system tries to match the new bank/account against the settlement instruction definitions in the **Settlement Instructions** page of Client Editor, and if a match is found, the system completes the settlement chain accordingly.

---

3. Save the changes you have made to the transaction using the **Apply** command.

### 8.3.1.3 Setting settlement instructions for an individual cashflow

Usually, a settlement instruction applies to multiple cashflows. For example, often the Interest and Expiration cashflows of a deposit are settled in one payment, thus the cashflows share the same instruction. However, it is possible to set new instructions on an individual cashflow, e.g. if the Interest of the above deposit is to be settled on a different account.

To set the settlement instructions for an individual cashflow:

1. In Transaction Manager, select the transaction for which you want to modify the instructions.
2. Select **View - Instructions** to display the **Instructions** view.
3. In the **Cashflow** view, right-click the cashflow for which you want to set the settlement instructions and select **Modify instructions**. A new row is added to the **Instructions** view.
4. In the new row, specify the instructions that you want to apply to the cashflow. The instructions can be set using either of the two ways described above.
5. Save the changes you have made to the transaction using the appropriate command to move its state forward in the transaction flow.

---

**Note:** You can revert to the standard settlement instructions (SSI) as defined in the client definition by using the **Reset to SSI** right-click action on the modified cashflow.

---

## 8.3.2 Entering ad-hoc settlement instructions

In Transaction Manager, it is possible to enter ad-hoc settlement instructions to a cashflow. Ad-hoc settlement instructions can be added to cash, commercial-loan, equity and FX transactions when the **Allow Ad-Hoc Instructions** or the **Allow Ad-Hoc Clients/Instructions** action feature has been included in the instrument definition. A transaction is marked with the status **Ad-Hoc Settlement Instructions** which

allows you to modify the flow and force a second verification where instructions have been modified. (The status **Ad-Hoc Settlement Instructions** is visible in the Transaction view, **Transaction Status** column.)

---

**Note:** See the guide *TRM Instruments: Processing and Calculations* for more information about features.

---

### 8.3.2.1 Allow ad-hoc instructions

The **Allow Ad-Hoc Instructions** action enables you to attach counterparty settlement instructions ad hoc at transaction level, even if no standard settlement instructions or even bank accounts have been defined for the counterparty in Client Editor. When capturing the counterparty's ad hoc instructions, you can choose banks that have already been defined in the system, and then enter the bank account numbers required for settlement.

To add an ad-hoc settlement instruction to a cashflow:

1. Select the transaction to which you want to add an ad-hoc instruction.
2. In the **Cashflow** view, right-click the cashflow you want and select **Ad-Hoc Settlement Instructions**.
3. In the dialog, fill in the fields using the information in the following table:

Information	Description
Bank	Client ID of the bank. Note: Bank Name and Bank SWIFT Code appear when the bank is selected.
Account	Account number.
(#2, #3, #4)	You can define up to four levels of bank details.

4. Click **OK** to update the settlement instructions for the cashflow. The changes are displayed in the **Instructions** view. You can cancel the action using **Undo Ad-Hoc Instructions**. The default settlement instructions are reinstated.
5. Save the changes you have made to the transaction using the appropriate command to move its state forward in the transaction flow.

### 8.3.2.2 Allow ad-hoc clients/instructions

The **Allow Ad-Hoc Clients/Instructions** action enables you to attach a payment counterparty as well as its banks and account numbers ad hoc at transaction level, even if the payment counterparty or the banks have not been previously defined in the system. The payment counterparty and its instructions can be saved and reused later when you enter similar ad hoc instructions.

To add an ad-hoc client/instruction to a cashflow:

1. Select the transaction to which you want to add an ad-hoc instruction.
2. In the **Cashflow** view, right-click the cashflow you want and select **Ad-Hoc Clients/Instructions**.
3. In the dialog, fill in the fields using the information in the following table:

Information	Description
Counterparty	Name of the payment counterparty.
SWIFT Code	SWIFT code of the payment counterparty.
Payment Address	Payment address of the payment counterparty.
Account	Account number of the payment counterparty.
Bank	Client ID of the bank.
Bank Name	Name of the bank.

Information	Description
Bank SWIFT Code	SWIFT code of the bank.
(#2, #3, #4)	You can define up to four levels of bank details.
Reuse Instructions	<p>Switch on to allow these settlement instructions to be reused.</p> <p>If this switch is on, the ad-hoc settlement instructions are stored in the system and can be viewed and invalidated (but not modified) in Ad-Hoc Settlement Instructions Editor.</p> <p>Note: To invalidate an ad-hoc settlement instruction, open Ad-Hoc Settlement Instructions Editor, select the instruction you want to invalidate, switch on the switch <b>Invalidate This Ad-Hoc Settlement Instruction</b>, and click <b>Save</b>. The instruction is no longer visible in the editor or available in related drop-down lists.</p>

- Click OK to update the settlement instructions for the cashflow. The changes are displayed in the **Instructions** view. You can cancel the action using **Undo Ad-Hoc Clients/Instructions**. The default settlement instructions are reinstated.
- Save the changes you have made to the transaction using the appropriate command to move its state forward in the transaction flow.

## 8.4 Processing transactions

This section describes the steps you need to take to retrieve existing deals into Transaction Manager so that they can be verified, and subsequently confirmed, and also how to perform actions which are common to all types of transactions, such as packaging.

---

**Note:** For information about processing the transactions of a particular type of instrument, such as performing an early expiration: see the relevant section of *TRM Instruments: Processing and Calculations*.

---

### 8.4.1 Retrieving transactions

To allow you to carry out actions on existing deals or move them along the transaction flow, you may need to retrieve them into Transaction Manager. Retrieving transactions is done in the Query view of Transaction Manager. Transactions are retrieved from a blank transaction row called a Query Row. In this row you enter the criteria that you want the retrieved transactions to match.

It is possible to limit the transactions retrieved to only those that are currently active: see *8.4.1.2 Retrieving active transactions* on page 285.

You can only retrieve transactions that have the relevant state and status that corresponds to the Transaction Manager mode as defined in your transaction flow. For example, you may only retrieve transactions with the state Final onto the Final Transaction Admin mode of Transaction Manager if your transaction flow has been defined in that way.

When the transactions have been retrieved, you need to move to another of the views as you cannot modify the transactions in the Query view.

You can use selection criteria in several fields to retrieve transactions. The criteria entered are connected with an AND operator, which means that all the selection criteria must match simultaneously.

You can enter wildcard characters as selection criteria in fields that contain string-type data. There are several wildcard symbols available in the SQL syntax of Sybase; however the % character is the

most useful wildcard symbol. Some wildcard examples for selection criteria using the % symbol to find the **Counterparty ID** field are:

Criterion	Matches
S%	All the counterparties that begin with the character S.
%S%	All the counterparties that have the character S in them.
%S	All the counterparties that end with the character S.

In addition, you can enter several separate selection criteria. In this case, the search displays all transactions that match any of the entered criteria. To enter several separate criteria, press the down arrow key and enter the criteria in the row that is displayed.

To retrieve transactions:

1. In the Query view, select the columns in which you wish to enter your selection criteria.
2. Right-click the Query view and select **Add row**.  
You can remove a query row using **Delete row**.
3. Enter the appropriate query criteria for your request in the field. You can do this in one of two ways:
  - By typing the selection criterion directly into the field
  - By right-clicking the field to open a selection list. This feature is not available for all transaction columns.
4. Right-click the query row and select **Execute** to run the transaction query.  
Only those transactions which match all the criteria are retrieved. A message is displayed if no transactions are found.
5. Right-click the query row and select **Clear** to clear the query row if you wish to enter alternative query parameters.

#### 8.4.1.1 Retrieving transactions for a given period or range or both

You can retrieve transactions for a given period or range by specifying dates or values in the corresponding To and From columns for the following fields:

- Period: Date, Expiry Date, Maturity Date, Opening Date, and Value Date.
- Range: Deal Rate, Nominal Amount, Deal Price, and Units.

---

**Note:** Dates and values are inclusive.

---

To retrieve the transactions for a given period or range:

1. In the Query view, select the corresponding From and To columns for which you want to specify a period or a range.
2. In the From and To columns enter the period or range for which you want to retrieve transactions:

---

**Hint:** You can include a combination of these columns in a single query row to reduce the number of results.

---

- For example, to retrieve all transactions within a period:

To ...	Enter ...	In Columns ...
Display all transactions that were captured between January 1st, 2009 and December 1st, 2009.	From: 01-Jan-2009 To: 01-Dec-2009	Date From / To
Display all transactions with an expiry date between January 1st, 2009 and December 1st, 2009.	From: 01-Jan-2009 To: 01-Dec-2009	Expiry Date From / To
Display all transactions with a maturity date between January 1st, 2009 and December 1st, 2009.	From: 01-Jan-2009 To: 01-Dec-2009	Maturity Date From / To
Display all transactions with an opening date between January 1st, 2009 and December 1st, 2009.	From: 01-Jan-2009 To: 01-Dec-2009	Opening Date From / To
Display all transactions with an value date between January 1st, 2009 and December 1st, 2009.	From: 01-Jan-2009 To: 01-Dec-2009	Value Date From / To

- For example, to retrieve all transactions within a range:

To ...	Enter ...	In Columns ...
Display all transactions with a deal price between 1,500 and 2,000	From: 1500 To: 2000	Deal Price From / To
Display all transactions with a deal rate between 1.2 and 4.5	From: 1.2 To: 4.5	Deal Rate From / To
Display all transactions with a nominal amount between 1000000 and 1500000	From: 1000000 To: 1500000	Nominal Amount From / To
Display all transactions with units between 0 and 100	From: empty or 0 To: 100	Units From / To

3. Run the query to display all transactions that match the query criteria.

#### 8.4.1.2 Retrieving active transactions

When you execute the transaction query in Transaction Manager, all transactions that match the criteria are retrieved. To limit the transactions retrieved to only those that have cashflows which are currently active, in other words, which remain to be settled, you can use the **Options - Active Transactions** menu option.

---

**Note:** The **Options - Active Transactions** menu option is set by default in Transaction Manager's Fixing Admin mode so that only transactions that are active on the fixing date are retrieved.

---

---

**Important:** When this option is selected, the system also retrieves any transactions that originate from an active transaction (for example, early expiration or call/put transactions).

---

## 8.4.2 Displaying transaction data in a chart

After you have retrieved transactions, you can choose to display selected data in a chart by using Transaction Manager's charting functionality.

**Hint:**

---

To use Transaction Manager's charting functionality, Transaction Manager must be started up in the chart mode (`--chart`). See *8.1.2 Start-up parameters* on page 262.

---

To display the queried transaction data in a chart:

1. Retrieve the transactions in Transaction Manager's Chart mode (see *8.4.1 Retrieving transactions* on page 283).
2. Click **Display Chart**.
3. In the resulting dialog, select the data you want to display. One of the selected columns should be non-numeric.
4. A chart is displayed showing the selected data in the **Transaction - Chart** view. You can do any of the following:
  - To modify the selected data, right-click inside the chart and select **Select columns...**, change the selected data and click **OK**. The chart is redrawn according to the selected data.
  - To modify the chart properties, right-click inside the chart and **select Configure...** and then modify the properties (data, tools, legend, titles, axis, and so on) according to your needs.

## 8.4.3 Verifying transactions

Once a deal has been entered and committed in either Transaction Manager or Enter Board, the transaction's state changes according to your mode configuration (for example, from Open to Verify) and is no longer visible in the Deal Capture mode.

In a typical TRM implementation, the Verification mode of Transaction Manager is used to check these transactions (see *8.1.3 Transaction Manager modes* on page 262 for more information about modes).

To verify a transaction:

1. Retrieve the transactions with the state Verify into Transaction Manager's Verification mode (see *8.4.1 Retrieving transactions* on page 283).
2. Check the transaction details.
3. Send or return the transaction to the appropriate state in the transaction flow, as follows:
  - If the transaction details are correct, accept the transaction and move it forward in the transaction flow for back-office verification using **Command - Verify**
  - If the transaction details are not correct, reject the transaction and send it back to the Open state to be modified or canceled in the Deal Capture mode using **Command - Reopen**.

## 8.4.4 Confirming transactions

When the deal has been verified in the Verification mode of Transaction Manager, you can confirm the transaction with the counterparty in the Confirmation mode. Here, you confirm the transaction information with the counterparty as well as whether the transaction is a delivery versus payment.

You can give the transaction the status Confirmed (**Command - Set Confirmed**) if you agree it with the counterparty, and the status Delivery vs. Payment (**Command - Set Delivery vs. Payment**) if the delivery and payment of the transaction occur at the same time.

You can confirm all transactions that have the state Back Office Verify and Final (both, only if the transaction is not yet confirmed). In the Confirmation mode, you can only retrieve transactions with these states if the transaction information is not yet received by the counterparty or confirmed by both parties.

Transactions automatically have the status Delivery vs. Payment if they use a custodian who has a delivery versus payment custody account (a custodian who supports delivery versus payment). If the transaction does not have the status Delivery vs. Payment, the custodian treats the delivery and payment of the transaction as two completely separate issues. The latter can create a delay in the payment of the transaction.

The confirmation message for SWIFT payments is physically different for transactions with the status Delivery vs. Payment.

To confirm transactions:

1. Retrieve the transactions whose status you want to change into Transaction Manager's Confirmation mode (see *8.4.1 Retrieving transactions* on page 283).

You can only retrieve transactions with the state Final and Back Office Verify.

2. Select the transaction that you want to add the status to and check the transaction information with the counterparty.

- Select **Command - Set Confirmed** to add the status Confirmed to the transaction.

This means that the transaction is agreed with the counterparty.

- Select **Command - Set Delivery vs Payment** to add the status Delivery vs. Payment to the transaction.

This means that the delivery and payment of the transaction occur simultaneously.

You can remove either status by selecting **Clear Confirmed** or **Clear Delivery vs Payment** from the **Command** menu.

## 8.4.5 Correcting transactions

---

**Note:** The system does not allow you to modify transactions with Paid cashflows. Paid cashflows are cashflows from which settlements have been generated. Settlements can be canceled in either Settlement Processing or Transaction Manager. See *18.3.4.8 Canceling settlements* on page 520 in Settlement Processing or *8.4.7.12 Canceling provisional settlements in Transaction Manager* on page 298.

---

To correct a transaction or modify its status:

1. Retrieve the transaction into Transaction Manager's Final mode (see *8.4.1 Retrieving transactions* on page 283).

You can only retrieve transactions with the state Final.

2. Select the transaction that you want to correct or modify.

- If you want to correct a transaction's details, select **Command - Re-Open** to change the state of the transaction from Final to Re-Open.

The transaction is given the Amend status and is no longer displayed in Transaction Manager's Final mode. This is because it has been returned to the previous mode (such as Back Office Verify) as configured in the transaction flow. From here, send the transaction back to the Deal Capture mode where it is possible to modify it.

Note that reopening a transaction, which has already gone through the accounting process, may have an impact on the creation of accounting entries when it is processed again (see 19.2.2 *Processing results* on page 538 for more information).

If accounting entries are affected, then a warning message will be displayed. It is possible to personalize the warning message (see 21.3.5 *Creating personalized warning messages* on page 562 for more information).

3. If you want to change the status of a transaction, select the status you want from the **Command** menu, for example:

Status	Description
Set Confirmed Clear Confirmed	Select <b>Set Confirmed</b> if the information from the counterparty matches the information in the transaction (see also 8.4.4 <i>Confirming transactions</i> on page 286). Select <b>Clear Confirmed</b> to remove the Confirmed status if the information from the counterparty is incorrect, that is, it does not match the information in the transaction.
Set Pending Clear Pending	Select <b>Set Pending</b> if the transaction is pending. This is used for early expirations and roll over transactions. Select <b>Clear Pending</b> to remove the Pending status.
Set Back Valuation Clear Back Valuation	Select <b>Set Back Valuation</b> to back-date the value of a deal. An example of a back-valued deal is a transaction that has been left open by the dealer at the end of the day, pending confirmation. The following day, the confirmation is received, and the dealer then back-dates the deal to the previous day. When the deal is changed in this way, the system time stamps the transaction at 23:59:59:999 local time for the previous day. Select <b>Clear Back Valuation</b> to remove the status.

## 8.4.6 Matching and unmatching transactions

Automatic matching of transactions occurs each night with the End of Day Processing activity: see A.24 *End of Day Processing* on page 636 for details of the activity's parameters.

The selling parameters used to automatically match transactions are specified in the result type linked to the instrument definition: see 3.15.2 *Results* on page 115 for more information.

In TRM, you can also manually match sold transactions against bought transactions (both must be tradeable on the secondary market) in Transaction Manager's Matching mode. This option is available if you specified **Manual** or **FIFO** as the selling method for the instrument.

When you manually match transactions, you can match any sold transaction to any amount of any bought transaction. For example, you can match Transaction A with half of Transaction B and half of Transaction C.

### 8.4.6.1 Matching

To match transactions:

1. Retrieve the transaction into Transaction Manager's Matching mode (see 8.4.1 *Retrieving transactions* on page 283). It is recommended to use the transaction number or instrument as the criteria.

You can retrieve transactions in any state.

2. Select the transaction that you want to match.

In order to be matched:

- Transactions must use the same instrument and be in the same portfolio.



- The value date of the bought transaction must be before the value date of the sell transaction.

---

**Note:** It is not possible to match special transactions such as average balance or early expiration transactions.

---

3. Select **Action - Matching** to match the transactions. Transactions can be matched differently in different result modes:

Menu	Description
Matching (Single Result Mode)	Matches transactions in the active result mode only. You can set the active result mode in <b>Result Mode</b> in the <b>Options</b> menu. See 3.15.2 <i>Results</i> on page 115 for more information about result modes.
Matching (All Result Modes)	Displays a dialog from which you can select the modes to which matching is applied. See 3.15.2 <i>Results</i> on page 115 for more information about result modes.

4. When a transaction has been matched, the system creates closing cashflows for the sold transactions with a **Target Transaction Number** that points to the original transaction. These closing cashflows close the position of the bought transaction.

### 8.4.6.2 Undo matching

You can also unmatch sold transactions using **Action - Undo Matching** if the cashflows resulting from the sell transactions are not yet paid or booked.

---

**Note:** **Undo Matching** can be done only on the sell transactions and for transactions that have been matched using the FIFO selling method.

---

To undo matching:

1. Retrieve the transaction into Transaction Manager's Matching mode (see 8.4.1 *Retrieving transactions* on page 283). It is recommended to use the transaction number or instrument as the criteria.

You can retrieve transactions in any state.

2. Select the sell transaction for which you want to undo the matching.
3. Select **Action - Undo Matching**. Transactions can be unmatched in different result modes:

Menu	Description
Unmatching (Single Result Mode)	Unmatches transactions in the active result mode only. You can set the active result mode in <b>Result Mode</b> in the <b>Options</b> menu. See 3.15.2 <i>Results</i> on page 115 for more information about result modes.
Unmatching (All Result Modes)	Displays a dialog from which you can select the modes to which unmatching is applied. See 3.15.2 <i>Results</i> on page 115 for more information about result modes.

### 8.4.7 Performing actions on deals

In Transaction Manager, you can perform several actions on a deal. Some of these actions are common to all types of deals (for example, **Duplicate**), while other special actions require the addition of a feature to the instrument (such as **Roll Over**).

---

**Note:** For more information about processing the transactions of specific types of instruments, see the guide *TRM Instruments: Processing and Calculations*.

---

These actions become available when you select the transaction in question in the appropriate view of Transaction Manager and right-click. The actions that you are able to carry out on the selected transaction are displayed in a pop-up menu. If you cannot see an action that you expected to see in right-click action menu, you can check why the action is not available by using the Discovery Console. For more information, see *8.4.7.5 Checking the unavailable actions on a transaction* on page 293.

The system does not allow you to perform actions on transactions when the action will result in a settlement on or before some future cashflow(s) that are already in settlement, i.e. Paid flag. By default, in this case, the system displays a message showing the settlement ID, currency, and state of the impacted settlements and will not allow you to complete the action. To proceed with the action, you will have to cancel these settlements. You can cancel settlements in Settlement Processing, which is the main application for handling settlements, or in Transaction Manager at either transaction or cashflow levels. For more information about canceling settlements in Transaction Manager, see *8.4.7.12 Canceling provisional settlements in Transaction Manager* on page 298.

This default behavior is configurable in Configuration Table Editor and is described in the *TRM System Admin Guide*. If the system is configured to allow the continuation of actions on transactions with cashflows that are in settlement, the system also informs you of the impacted settlements, except that you are given the choice to continue or abort the action. If you choose to continue, the action will result in the paid cashflows being closed with unpaid ones, i.e. a reversal settlement can be processed later in Settlement Processing as with any other settlement. Settlement Processing is described in *18.3 Generating and processing settlements* on page 510.

---

**Note:** You can use the Settlement and Settlement State columns in the **Cashflow** view to check the settlement and settlement state.

---

#### 8.4.7.1 Duplicating transactions

The **Duplicate** action creates a new deal with the same characteristics as the initial transaction, apart from the transaction number and the state. After the deal has been duplicated, it is possible to change some of the characteristics of the new deal. This is a useful function when you need to create many deals with similar characteristics using the same instrument.

To enter a duplicate deal:

1. Select the transaction row for the deal data you want to duplicate.
2. Right-click the transaction and select **Duplicate**.

A new deal is created with the same transaction data as the original transaction. You can modify any of the transaction column data before applying the deal.

#### 8.4.7.2 Packaging transactions

If several transactions have something in common (for example, they are traded as a hedge or an arbitrage), you can package them together in a group to create a link between them, allowing you to analyze the grouped transactions for position monitoring in Treasury Monitor, or for reporting purposes.

In Transaction Manager, the **New Package** action assigns a transaction or several transactions to a package main type and package type. A transaction can belong to one or several packages as long as the packages have different package main types. Package main types and package types are defined in Package Type Editor: see *3.37 Package types (optional)* on page 147.

To add one or several transactions to a package:

1. In Transaction Manager, select the transaction/s that you want to add to a package.
2. Select **Action - New Package** from the menu.
3. Select the **Package Main Type** from the resulting selection list. Note that hidden and system main types are not available for creation.
4. Select the **Package Type** from the resulting selection list.

- Click **OK**. The transaction is added to a new package with a package ID. You can view the package ID and package attributes of a packaged transaction in the **Package View**, available from the **View** menu.

---

**Note:** You can add a single transaction to a package, by selecting the transaction and then using the right-click menu to select **Package - New Package**.

---

In addition to the **New Package** action, the following actions can be performed on a transaction, by right-clicking on the transaction and then selecting the **Package** menu:

Information	Description
Remove from Package	This menu lists the packages to which the transaction belongs. The list comprises the package ID, package main type and package type. Selecting an item removes the transaction from the package. Note: It is not possible to remove a transaction from a system package.
Update Package Type	You can use this action to change the package type (not the main type). Note: It is not possible to update a system package type.
Add to Package	This menu lists the packages to which other transactions on the board belong. For example, if you have several transactions displayed as the result of a query, the menu lists any packages to which any of these transactions belong. The package list comprises the package ID, package main type and package type. If the transaction already belongs to a package, this package will not show up in the list. Note: It is not possible to add transactions to system or hidden packages.

#### 8.4.7.2.1 Copying packages to new transactions

When a new transaction is created by performing an action on an existing transaction, all packages are copied from the existing transaction to the new transaction, with the following exceptions:

- System packages (packages in Package Main Types which have the **System** attribute) are not copied.
- By default, packages are cleared from purchase transactions when using the **Assignment (purchase)** action.
- The **Duplicate** action does not copy any packages.

For the following actions, it is possible to clear all packages from the new transaction by selecting the **Clear Packaging** switch:

- Roll over
- Option exercise
- Loan/swap transfer (for the opening transaction)
- Bond transfer (for the opening transaction).

#### 8.4.7.2.2 Querying for packaged transactions

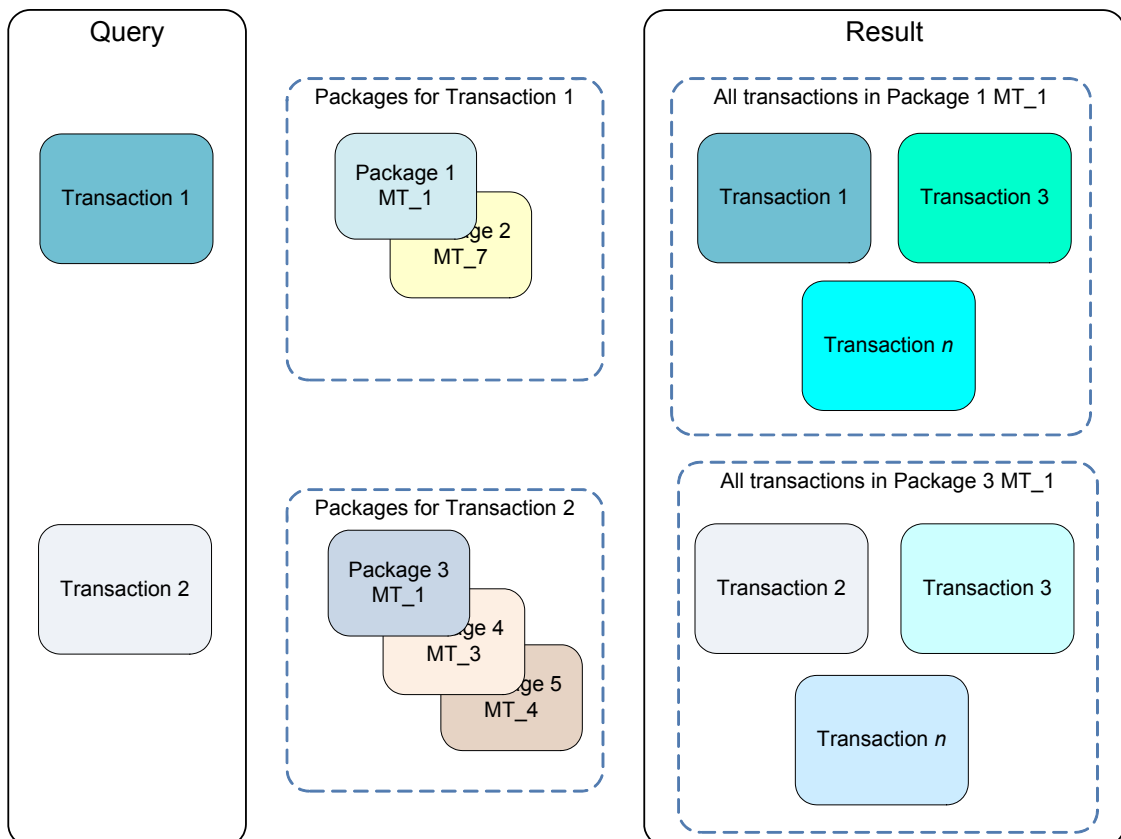
In Transaction Manager, you can query for transactions that belong to a particular package or package type using the **Package** or **Package Type** fields. To use the **Package Type** field, you first need to select a **Package Main Type**.

### 8.4.7.2.3 Displaying packaged transactions

It is possible to set two display options from the **Options** menu:

- **Preferred Package Main Type:** When a package main type is selected, the two fields **Package Type** and **Package** in the **Transaction** view are populated with the values of the package type and package ID of the selected package main type. If no preferred package main type is specified then these fields are empty.
- **Retrieve Full Package:** When you set this option, you need to also set a **Preferred Package Main Type**. In the below example, the **Preferred Package Main Type** is MT\_1. When you run a query, the query will do the following:
  - Retrieve all transactions that match the query parameters or criteria (in this example Transactions 1 and 2)
  - Examine the packages to which the matching transactions belong. In this example, Transaction 1 belongs to packages 1 and 2, and Transaction 2 belongs to packages 3, 4, and 5.
  - Look at which packages have a package main type that matches the **Preferred Package Main Type**. In the example, packages 1 and 3 have package main type MT\_1.
  - Retrieve all transactions that are also in the same packages as the matching transactions where the package main type is the **Preferred Package Main Type**. In the example, all transactions from packages 1 and 3 are retrieved since the package main type for these packages is MT\_1. No transactions from packages 2, 4 or 5 are retrieved because the package main type for these packages does not match the **Preferred Package Main Type**.

Settings: Retrieve Full Package  
 Preferred Main Package Type = MT\_1



### 8.4.7.3 Previewing messages

It is possible to preview any messages (for example, the confirmation of a deal) that will be generated and sent automatically according to the type of transaction and the rules that have been set up in TRM.

See *Chapter 21 Managing messages* on page 555 for more information about setting up and managing messages.

To preview a message:

1. Select the transaction for which you want to preview the message.
2. Right-click the transaction and select **Preview**.
3. In the **Preview** dialog, select the **Message Type** which corresponds to this type of transaction.

The list of available message types is filtered by the state of the transaction and matching message rule.

4. Click **OK**.

TRM creates and displays an on-screen version of the final message. This preview is for display purposes only.

---

**Note:** Once the transaction has been applied and committed, messages requests are created. These requests either enter the message process flow for further processing, or are transmitted immediately. The message process flow, including when messages should be transmitted, is defined at implementation.

---

### 8.4.7.4 Running reports on transactions

You can generate a Transaction Log report for a single transaction from Transaction Manager.

- Right-click the transaction's Transaction Number, and select **Run Report**.

This report shows the attributes of the selected transaction along with the user ID responsible for making any modifications.

See *B.51 Transaction Log Report* on page 680 for details of the report's parameters.

See also *8.4.8 Generating reports on transactions* on page 299 for information about other types of transaction-related reports.

### 8.4.7.5 Checking the unavailable actions on a transaction

When you right-click a transaction, you can see the actions that you can perform on that particular transaction. To check why some actions are not available (or denied) use the Discovery Console.

To check why some actions are not available (or denied):

1. Retrieve the transaction and select it.
2. Select **Options - Discovery Console**. The **Discovery Console** dialog is displayed.
3. Right-click the selected transaction. The list of denied actions appears in the dialog.
4. Expand the list, the actions are displayed by the name of the view and the time where and when you performed the right-click.

---

**Note:** A new entry is added each time you perform a right-click on the transaction.

---

5. For each action, you can see the name of the action and the reason why it is not available. For example:

- `execute_trigger` - Execute Trigger: no event to trigger

Informs you that you cannot execute a trigger because there are not any events. You can then check why there are no events.

- reset-kept-columns - Reset Kept Columns: schedule action only

Informs you that you can only perform this action in the **Schedule** view. You can then go to the indicated view.

6. Additionally, you can select a **Regular Expression** and enter a regular expression or use the **Filter** field and **Apply** to display a particular action.

**Hint:**

---

For example, to display only reset actions, enter `reset` in the **Filter** field and click **Apply**. The Discovery Console updates the displayed actions to match the filter.

---

### 8.4.7.6 Adding information links to deals

In the Transaction view of Transaction Manager, you can add complementary information to a deal (for example, a document containing information related to the transaction, or a link to an issuer's web site).

To add a link to a transaction:

1. Select **View - Select Columns**.
2. Add the **Document Link** column.
3. Select the transaction to which you want to add the link.
4. Double-click the **Document Link** column to open the **Browse for Folder** dialog.
5. Select the required document or if you want to add a link to a web page, type the URL directly in the column.
6. To open the link or web page, right-click the column and select **Open**.

---

**Note:** You can also attach a link directly to an instrument in Instrument Editor. See 3.3.9.3 *Adding links* on page 49 for more information.

---

### 8.4.7.7 Generating transaction comments

In the **Transaction Comment** view of Transaction Manager, you can view any rule-based transaction comments that apply to the transaction. These comments can be generated manually using the **Add Comments** action. Once generated, it is possible to manually edit the value of a comment if the transaction is not in the **Final** state.

To manually generate transaction comments:

1. Open the **Transaction Comment** view from the **View** menu in Transaction Manager.
2. Right-click on the transaction and select **Add Comments**. The **Transaction Comment** view will be populated with any transaction comments that apply to the transaction.

---

**Note:** Any transaction comments that need to be copied to settlement processing (i.e. transaction comments that have the **Copy to Settlement** switch set to on in Comment Rule Editor) will be copied automatically.

---

3. If you have manually edited some comments and want to go back to the default comments or if you want to remove comments that no longer apply, re-run the **Add Comments** action. Re-running the action gives you the opportunity to either:

- **Replace existing comments with default values**

This action replaces any comments that have been modified manually by the default comments defined in the Comment Rule Editor.

– **Delete existing comments for non matching rules**

This action removes any comments that no longer apply to the transaction. For example, a comment may be added to a transaction based on a rule that applies to all transactions in USD. Then, if the transaction's currency is changed from USD to Euro, the rule and therefore the comment no longer apply.

---

**Note:** See 3.22 *Comments and comment rules (optional)* on page 132 for more information on transaction comments.

---

### 8.4.7.8 Setting base FX rates

The Base FX Rate is the rate used to convert amounts when the currency of the cashflow and the portfolio's base currency are not the same. This rate has an impact on the calculation of the FX Profit figure during end-of-day processing.

For some transactions (namely on Bond, Discount Paper, Depo/Loan, and Equity instruments), it is possible to manually fix the Base FX Rate and Base FX Book Rate, so that a subsequent running of the End-of-Day Processing activity does not change the rate or base amount of any of the following types of cashflow:

- Principal cashflow
- Discount/Premium cashflow
- Redemption/Amortization/Expiration flow on the opening date or since when date
- Position cashflow on the opening date or since when date.

To set the Base FX Rate for a transaction:

1. Select the transaction in Transaction Manager's Transaction view.
2. Right-click the transaction and select **Set Base FX Book Rate**.

Note that this action is only available when the currency of the cashflow and the portfolio's base currency are not the same.

3. In the resulting dialog, enter the values using the information in the following table:

Information	Description
Leg	Leg of the transaction. Note: This field is only displayed when a transaction contains leg information.
FX Rate	Base FX Rate that you want to set for the transaction.

4. Click **OK** to set the rate.

The attributes Fixed FX Rate or Fixed FX Book Rate are set on the cashflows.

---

**Note:** See 19.2 *Realizing and processing results* on page 537 for more information.

---

### 8.4.7.9 Defining the valuation approach at transaction level

In Transaction Manager's Valuation Approach view, you can specify a transaction- and mode-specific valuation approach for an individual deal for a specific time frame.

This is useful in situations where you initially value a transaction using one approach, but later decide to change to another approach for either the original transaction or subsequent transactions from the same instrument.

You can define the valuation approach at transaction level when the *Mode/Transaction Specific Method* feature is present in the instrument definition.

---

**Note:** See the guide *TRM Instruments: Processing and Calculations* for more information about this feature.

---

To specify a valuation approach for an individual deal:

1. In Transaction Manager, select the transaction for which you want to specify the valuation approach.
2. Select **View – Valuation Approach** to display the Valuation Approach view in the Transaction Manager window (make sure that the view's columns are selected using **View - Select Columns**).
3. Right-click the transaction and select **New Valuation Approach** to add a row to the Valuation Approach view.
4. Enter the details in the new row as follows:

Information	Description
Active From	Start date for the period within which the valuation approach is valid for the transaction. If this field is left blank, the opening date of the transaction is used.
Active To	End date for the period within which the valuation approach is valid for the transaction. If this field is left blank, the closing date of the transaction is used.
Valuation Approach	Valuation approach to be applied to the transaction for the active period.
Valuation Mode	Valuation mode in which the specified valuation approach is used for the active period.

5. Repeat the procedure if you want to add further valuation approaches for other periods.
6. Select **Command – Apply** to save the transaction.

---

**Note:** When valuing such a transaction, TRM uses the approach that is active on the valuation date (in the requested mode) and does the valuation accordingly. If no approach is found at transaction level, the system falls back on the valuation approach specified at instrument level (in the **Mode Valuation** page).

---

#### 8.4.7.10 Assigning valuation models at transaction level

In Transaction Manager's Valuation Model view, you can specify a transaction-specific valuation model for an individual deal for a specific time frame.

This is useful in situations where you initially price a transaction using one model, but later decide to change to another pricing model for either the original transaction or subsequent transactions from the same instrument.

You can define the valuation model at transaction level when the *NumeriX Setup* and *NumeriX Valuation* features are present in the instrument setup: see the guide *TRM Instruments: Processing and Calculations* for more information about these features.

To specify the valuation model used to price an individual deal:

1. In Transaction Manager, select the transaction for which you want to specify the valuation model.
2. Select **View – Valuation Model** to display the Valuation Model view in the Transaction Manager window (make sure that the view's columns are selected using **View - Select Columns**).



3. Right-click the transaction and select **New Valuation Model** to add a row to the Valuation Model view.
4. Enter the details in the new row as follows:

Information	Description
Start Date	Start date for the period within which the valuation model is valid for the transaction. If this field is left blank, the opening date of the transaction is used.
End Date	End date for the period within which the valuation model is valid for the transaction. If this field is left blank, the closing date of the transaction is used.
Calibration	ID of the calibration model to be applied to the transaction for the active period.
Valuation Model	Valuation model you want to use for the active period. Choose from a list of models that have been predefined in the calibration editors (for example, Hull-White-One-Factor or Hull-White-Two-Factor).
Valuation Method	Pricing direction (for example, Forward/Backward Monte Carlo).
Quality Analytics Quality	Quality required for the pricing

5. Repeat the procedure if you want to add further valuation models for other periods.
6. Select **Command – Apply** to save the transaction.

---

**Note:** See 4.7 Pricing complex derivatives on page 190 for more information about setting up and using pricing models.

---

#### 8.4.7.11 Changing IR exposure calculations at transaction level

TRM enables you to switch on or off the IR exposure calculations on a per transaction basis when using NumeriX valuation. That is, when you have set up NumeriX settings (**NumeriX page - Numerix Setup** feature) and either switched on or off the **Calculate Exposure** switch at the instrument level, you can change that setting in Transaction Manager’s **Valuation Model** view.

This is useful when you only want to switch on or off the IR exposure calculations of a single transaction, as opposed to all transactions that use that instrument.

To switch on or off the IR exposure calculations on a per transaction basis:

1. In Transaction Manager, select **View – Valuation Model** to display the **Valuation Model** view in the Transaction Manager window. (Make sure that the **Calculate IR Exposure** column is visible.)
2. Select the transaction for which you want to switch on or off IR exposure calculations.
3. In the **Valuation Model** view, click inside the **Calculate IR Exposure** column and do one of the following options:
  - Select **Yes**, if you want to switch on IR exposure calculations on the selected transaction, i.e. the **Calculate Exposure** switch is off at the instrument level.
  - Select **No**, if you do not want switch off IR exposure calculations on the selected transaction, i.e. the **Calculate Exposure** switch is on at the instrument level.

---

**Note:** If you want the IR exposure defined at the the instrument setup to apply, simply leave the column empty.

---

4. Select **Command – Apply** to save the transaction.

### 8.4.7.12 Canceling provisional settlements in Transaction Manager

You can cancel paid cashflows in Transaction Manager when the following conditions are met:

- Settlements are in a state flagged as 'provisional'. The default provisional states are Generated, Rejected, Waiting for Netting, and Error.
- The instrument used in the transaction includes the action feature *Cancel Provisional Settlement*. See the *TRM Instruments: Processing and Calculations Guide*.

You can cancel settlements at transaction and cashflow levels according to whether you want to cancel single cashflows or all cashflows on or after a specified date. In both cases, the **Cancel Provisional Settlements** action processes the settlements as follows:

- If the related settlement is not a netted settlement across transactions, then the settlements are canceled (i.e. deleted), and the Paid flag removed from the cashflows that were part of the settlement.
- If the related settlement is a netted settlement across transactions, then the cashflows of the transaction affecting the net settlement are removed from this settlement, and the Paid flag removed from these cashflows.

After you have canceled the settlements and proceeded with the action you wanted to initially perform on the transaction, the settlements can be regenerated and processed in Settlement Processing (*Chapter 18 Managing cash and settlements* on page 495).

#### 8.4.7.12.1 Canceling single provisional settlements

To cancel a single cashflow in settlement (paid):

1. In Transaction Manager's **Cashflow** view, you can check the settlement state of the cashflows.

---

**Note:** To check the settlement ID and state of the settlement, the columns Settlement and Settlement State must be visible in the **Cashflow** view.

---

2. Right-click the cashflow for which you want to cancel the settlement and select **Cancel Provisional Settlement**.

#### 8.4.7.12.2 Canceling all provisional settlements on or after a specific date

To cancel all cashflows in settlement (paid) on or after a specific date:

1. In Transaction Manager's **Cashflow** view, you can check that the settlement state of the cashflows.

---

**Note:** To check the settlement ID and state of cashflows, the columns Settlement and Settlement State must be visible in the **Cashflow** view.

---

2. In the **Transaction** view, right-click the transaction on which you want to cancel settlements and select **Cancel Provisional Settlement**.
3. In the resulting dialog, enter the date from which you want to cancel the settlements. Only the cashflows with a payment on or after the specified date will be canceled.
4. Click **OK**.

---

**Note:** If non-provisional settlements exist on or after the specified date, the system displays a message listing the settlements that could not be canceled. These settlements can be canceled manually in Settlement Processing.

---

#### 8.4.7.13 Processing special actions or events

The processing of special actions or events on a transaction (for example, Fixing, Option Exercising, and so on), is usually carried out when the transaction is in the Final state. Therefore, for this

reason, the Deal Capture mode of Transaction Manager is not normally used to perform such actions.

It is recommended that additional modes of Transaction Manager are configured in order to handle these types of special events. Transaction Manager modes are configured at implementation to meet the requirements of your organization: see the *TRM System Administration Guide* for more information.

**Note:** For more information about processing special actions or events on the transactions of specific types of instruments, see the guide *TRM Instruments: Processing and Calculations*.

## 8.4.8 Generating reports on transactions

There are a number of reports you can use to view transaction information.

Report	Description
Transactions	Used to view transaction information for a specific day or for a specific period. See <i>B.50 Transactions Report</i> on page 679 for details of the report's parameters.
Transaction Log	Used to view all modifications made to one or more transactions over a period of time along with the user ID responsible for making the modifications. This report can also be launched for a single transaction from Transaction Manager: see <i>8.4.7.4 Running reports on transactions</i> on page 293. See <i>B.51 Transaction Log Report</i> on page 680 for details of the report's parameters.
Transaction Market Rate	Used to view all market data associated with a particular trade. The report displays the market data for each time the trade was applied in the Front Office and contains all price columns relevant to the transaction. See <i>B.52 Transaction Market Rate Report</i> on page 680 for details of the report's parameters.
Cashflow	Used to view the Treasury's future incoming and outgoing cashflows. See <i>B.5 Call Reports</i> on page 661 for details of the report's parameters.
Cashflow Fixing	This report displays the cashflows which have been fixed. It shows the fixing information for floating-rate deals, such as floating loans and the floating legs of IR swaps, as well as the cashflow fixing of FRAs. See <i>B.7 Cashflow Fixing Report</i> on page 662 for details of the report's parameters. Note: The Event Diary report can be used to display the transactions (grouped by affect number) that need to be fixed on a given date.
Cashflow Log	Used to display a log of the changes made to cashflows. See <i>B.8 Cashflow Log Report</i> on page 662 for details of the report's parameters.
Competitive Quote	Used to view competing quotes received from other institutions. This information can be used, for example, for audit purposes and for bank relationship management. See <i>B.14 Competitive Quote Report</i> on page 665 for details of the report's parameters.
Event Diary	This report shows all transactions in a selected portfolio (hierarchy) that have cashflows (grouped by affect number) on which an event may be initiated during a specified period. The transactions need to be open in the Inventory between the Start Date and the End Date of the report in order to be displayed. Events can include: all types of fixings, call or put exercises, triggered events, currency or transaction conversions, equity-related events, and option expirations or other types of option events. See <i>B.24 Event Diary Report</i> on page 668 for details of the report's parameters.

## 8.5 Deal mirroring

TRM enables you to mirror deals by generating "child" transactions from "parent" transactions.

Deal mirroring works in a similar way to the **Duplicate** action in Transaction Manager (see 8.4.7.1 *Duplicating transactions* on page 290). However, instead of creating a new deal with the same characteristics as the initial transactions, you have the following possibilities:

- Internal deal mirroring

This is similar to a reverse **Duplicate** action, where transactions that are traded inter-company can be entered in one portfolio and then be simultaneously mirrored in the portfolio of the counterparty.

With internal deal mirroring, most of the values of the child transaction are inherited from the parent transaction. Some values (such as, transaction sign and amount) are reversed in the child transaction, while some values follow an advanced logic (for example, settlement instructions, and so on.)

See 8.5.1 *Internal deal mirroring* on page 300 for more information.

- Deal mirroring using mirror cases

Mirror cases are used in more complex deal mirroring. They can automatically create one or more child transactions with values that are either the same as the parent transaction, or different from the parent transaction.

See 8.5.2 *Deal mirroring using mirror cases* on page 305 for more information.

With both types of deal mirroring, you first need to create standard rules (in Rule Editor) to determine which transactions should be affected by the mirroring: see *Chapter 5 Managing rules* on page 221.

---

**Note:** Deal mirroring requires some additional parameters in the configuration of the transaction flow: see the *TRM System Administration Guide* for more information.

---

### 8.5.1 Internal deal mirroring

Internal deal mirroring is carried out when a transaction that is initiated in one portfolio, is copied with the same terms and conditions but with the opposite sign and amount, to the portfolio of the counterparty.

The initial transaction is known as the parent transaction and the mirror copy transaction is known as the child transaction. Most of the values of the child transaction are inherited from the parent: the child transaction uses the same instrument, the same currency, the same dates, the same rate, and so on.

Typically, internal deal mirroring is used in the following situations:

- When the organization is trading with one of its branches or subsidiaries, (for example, by lending funds), and both parties (that is, the initiator of the transaction and the counterparty) are identified in TRM with the Portfolio Owner role in their respective client definitions.
- When the trading desk is transferring a position to the customer desk: the counterparty and the owner of the transaction are the same.

#### 8.5.1.1 Setting up static data for internal deal mirroring

This section describes the additional values or specific configuration needed for static data entities used in internal deal mirroring.

### 8.5.1.1.1 Setting up portfolio permissions

In addition to the standard permissions, it is important that there is some control on which users can trigger mirroring to create transactions into target portfolios.

This is done by ensuring that the correct users and corresponding permissions are assigned to the portfolios involved in internal deal mirroring.

To set up a target portfolio for internal deal mirroring:

1. In Portfolio Editor's **Allowed Users** page, specify the values as follows:

Information	Description
User	User ID of the dealer allowed to initiate deal mirroring in this portfolio.
Permission	MIRROR.

2. Repeat the procedure for each user involved in internal deal mirroring on this portfolio.
3. Save the portfolio definition using **File – Save**.

---

**Note:** See 3.14.1.2 *Assigning allowed users and processes* on page 110 for more information.

---

### 8.5.1.1.2 Setting up clients

Mirroring internal deals is based on the values set up in the client definition.

In Client Editor, you can specify a list of counterparties that are eligible for mirroring, and for each counterparty, one or more portfolios which may contain the mirror transaction.

Each counterparty/portfolio combination must be given a rule and priority. If the counterparty selected in the deal is listed in the client definition of the portfolio owner, a rule is executed to determine the default counterparty portfolio.

See 3.13.1.7 *Setting up internal deal mirroring* on page 96 for more information.

---

**Note:** If you have not defined any values for the counterparty in the portfolio owner's client definition, you can still trigger mirroring by manually selecting the **Counterparty Portfolio** at deal entry. In this case, all portfolios of the counterparty will be available for selection.

---

### 8.5.1.1.3 Setting up instruments

Internal deal mirroring is available on deals involving the following types of instrument: short-term loans, long-term loans, FX spot, FX forward or FX swap deals, FX options, and commercial loans.

Instruments used in internal deal mirroring must be assigned with the **Internal Deal Mirroring** feature.

---

**Note:** See the guide *TRM Instruments: Processing and Calculations* for more information about features. For information about mirroring on commercial loans, see the *CLM User Guide*.

---

## 8.5.1.2 Processing internal deal mirroring

This section describes the processing procedures for internal deal mirroring.

### 8.5.1.2.1 Generating internal deal mirroring

Transactions involved in internal deal mirroring are entered in a similar way to normal transactions, but the transaction flow requires some additional configuration.

Concretely, internal deal mirroring is automatically generated when the transactions reach a state that has an order number greater than or equal to the order number of the hidden state that triggers the mirroring. This hidden state is called IDM-MIRRORING. A hidden state is never visible in Transaction Manager.

When the parent transaction reaches this state, internal deal mirroring generates the child transaction.

The transaction states and values of both transactions are synchronized: each time the values in either transaction are modified or either of the transactions moves forwards (or backwards) in the flow, the other transaction is updated or moved in the same way.

Most of the values of the child transaction are inherited from the parent: the child transaction uses the same instrument, the same currency, the same dates, the same rate, and so on. However, the transaction sign and amount are reversed in the child transaction.

The values in either of the transactions can be modified up to a later "agreed" state in the deal mirroring flow (this state being comparable to the Final state of a normal transaction). However, once the transactions have reached this agreed state, their deal data can no longer be modified: it is only possible to execute some processing actions on the transactions: see *8.5.1.2.2 Executing processing actions on mirrored deals* on page 303.

See also the *TRM System Administration Guide* for more information about configuring the transaction flow.

To mirror a transaction into a target portfolio:

1. Enter the transaction information for the parent transaction (as described in *8.2 Capturing deals* on page 263).

The deal data required for specific types of instruments can be found in the guide *TRM Instruments: Processing and Calculations*.

Information	Description
Instrument	Instrument ID used in the transaction.
Portfolio	Portfolio in which the transaction is entered. For a portfolio suffix which contains a space, use backslash-space e.g. for "Portfolio EUR" enter "Portfolio\ EUR".
Counterparty	Counterparty to be used for the mirror child transaction. The counterparty must be named in Client Editor's <b>Counterparty Portfolio</b> page. This value is used to filter the available portfolios in the <b>Counterparty Portfolio</b> field.
Counterparty Portfolio	Target portfolio in which the child transaction will be generated. This portfolio must be assigned with the necessary Mirror permissions for the user entering the deal. The portfolios available for selection depend on the Counterparty Portfolio definition of the portfolio owner: <ul style="list-style-type: none"> <li>• If only one portfolio has been defined, this is selected by default.</li> <li>• If more than one portfolio has been defined, then the portfolio that matches the rule is selected, but it is possible to select another of the defined portfolios.</li> </ul> Note: If you do not enter <b>Counterparty</b> before <b>Counterparty Portfolio</b> , then the <b>Counterparty Portfolio</b> selection list will display all trading portfolios.
Transaction Sign	Direction of the parent transaction. The child transaction will be generated with the opposite sign.
Amount	Amount of the parent transaction. The child transaction will be generated with the same but opposite amount.

Note that you need to ensure that the static data you enter has been set up correctly in order to generate the mirror child transaction: see *8.5.1.1 Setting up static data for internal deal mirroring* on page 300.

2. Save the parent transaction and move it forward in the transaction flow using the options in the **Command** menu.

When the parent transaction reaches the appropriate state in the deal mirroring flow, the child transaction is generated. Some information is automatically set by the system:

– On the child transaction

Transaction Number: identifies the deal in the system  
State: shows the child transaction's position in the workflow  
Mirror Parent = Transaction Number of the parent transaction  
Transaction Sign and Nominal Amount = opposite to the parent transaction

– On the parent transaction:

State: shows the parent transaction's position in the workflow  
Mirror Child = Transaction Number of the child transaction

3. Save either of the transactions using the options in the **Command** menu. The other transaction is automatically updated.

You can also move both transactions back in the transaction flow by selecting **Command – Re-open** on either of the saved transactions.

4. Before the mirrored transactions reach the final state, make any changes to the values of either of the transactions (for example, if necessary, modify the amount): the change will automatically be reflected in the other transaction.

At this stage in the flow, either party can modify the transactions' values, but cannot execute any processing actions (such as Fixing, Early Expiration, or Roll Over). Processing actions can only be executed when the transactions have reached the final state.

5. Confirm the transactions using the options in the **Command** menu.
6. When the transactions have reached the final state, you can execute processing actions on the transactions using the information in the following section.

#### 8.5.1.2.2 Executing processing actions on mirrored deals

Once the parent and child transactions have reached the final state in the deal mirroring process flow, you can perform the relevant processing actions on either the parent or the child transaction (for example, Fixing, Early Expiration, or Roll Over).

When a processing action is executed on one of the transactions, the same action is mirrored on the other deal.

---

**Note:** When a deal is generated by an action, only a limited number of fields in the action dialog can be updated.

---

The following actions can be executed on mirrored deals:

- **Early expiration** is executed on the mirror transaction with the same parameters except for amount (which is reversed). A new transaction is generated and linked to the parent early expiration transaction.  
  
Early expiration is available on short-term and long-term loans, FX spot and FX forward deals, and FX swaps and FX options.
- **Roll Over** is executed on the mirror transaction with the same parameters except for amount (which is reversed). A new transaction is generated and linked to the parent roll over transaction.  
  
Roll over is available on short-term and long-term loans, and FX swaps.
- **Fixing** is executed on the mirror transaction with the same parameters as the initial transaction. The **Undo Fixing** action is also available.  
  
Fixing is available on long-term loans.
- **Netting** is executed on the mirror transaction with the same parameters as the initial transaction. The **Undo Netting** action is also available.

This action is available on Non-deliverable forward (NDF) FX deals.

Note that some processing actions will not be reflected on mirrored deals: these include actions such as: **Asset Swap**, **Book Value Change**, **Classification**, and **Package**.

To execute an action on both deals:

1. Right-click either of the mirrored transactions and select the action you want to execute: **Early Expiration**, **Roll Over**, **Fixing**, or **Netting**.
2. Depending on the action you have chosen, the transactions will be modified (as in **Fixing**) or new transactions will be generated (as in **Roll Over**) which are linked to the corresponding parent transaction.
3. Select **Command – Apply** to save either the modified deals or the new deals.

---

**Note:** For more information about performing actions on specific types of instruments, see the guide *TRM Instruments: Processing and Calculations*.

---

#### 8.5.1.2.3 Rejecting mirrored deals

When the parent and child transactions reach a certain state in the flow, you can no longer modify their deal data or move them back in the transaction flow: you can only reject the transactions using **Command – Reject**.

Note that if mirrored deals that have reached the final state are rejected, they can only be definitively cancelled and removed from the system by an administrator possessing the appropriate permissions.

The administration procedure must also ensure that all eventual payments or bookings linked to rejected deals have been correctly reversed or cancelled.

#### 8.5.1.2.4 Settlement of mirrored deals

Generated settlement instructions for mirrored deals are automatically mirrored into the child transaction, as follows:

- The **Our Bank** and **Our Account** values of the parent transaction are copied into the **Counterparty Bank** and **Counterparty Account** fields of the child transaction.
- The **Counterparty Bank** and **Counterparty Account** values of the parent transaction are copied into the **Our Bank** and **Our Account** fields of the child transaction.

Each portfolio owner can modify their settlement instructions and any changes are then automatically reflected in the other transaction.

However, each portfolio owner must independently run their own payment generation processes in Settlement Processing.

After this point, payments are no longer synchronized: each payment will have its own transfer method, go separately through the settlement process flow, and so on.

#### 8.5.1.2.5 Accounting for mirrored deals

Accounting processes are executed independently for each mirrored deal.

Each portfolio owner must run their own accounting activities regardless of the other party.

If a mirrored transaction is subsequently modified by the other portfolio owner when one side has already run their daily accounting, the appropriate accounting reversal entries are triggered automatically in the system.

Selling and profit and loss calculations are result mode dependent and must be done independently for each transaction.

---

**Note:** See *Chapter 19 Managing accounting* on page 533.

---



## 8.5.2 Deal mirroring using mirror cases

In TRM, you can configure a mirror case to automatically create one or more child transactions with either the same, or different, values from the initial parent transaction.

In the mirror case, you select a rule to capture the transactions that should be mirrored, and you define the child transactions that should be generated when the rule is matched.

There are several reasons for wanting to mirror deals in this way, including implementing risk-management strategies, fulfilling regulatory requirements, and transferring positions between portfolios.

For example, configuring mirror cases allows you to automate the following tasks:

- Transfer positions between trading and customer desks, and strip the resulting deals of any margin that the customer desk passed on to the customer.
- Transfer a customer margin to a specific profit portfolio, and convert that margin to the base currency of the underlying portfolio structure.
- Transfer FX exposure between portfolios.
- Hedge FX rate risk by IR risk. Deal mirroring does this automatically by generating two depo/loan transactions from your choice of FX forward or swap future cashflows. The remaining spot part of the FX deal is also taken care of automatically.

### 8.5.2.1 Setting up user permissions

Users must have certain permissions to be able to mirror deals using mirror cases. These permissions are granted in Security Center's Permission Editor.

---

**Note:** See the *TRM System Administration Guide* for more information.

---

### 8.5.2.2 Configuring mirror cases

Mirror cases are configured in Deal Mirroring Editor. This editor layout is based on the application Static Data Editor (see 3.2 *Static Data Editor* on page 41 for more information).

To configure a generic mirror case:

1. In Deal Mirroring Editor, enter the main attributes of the mirror case in the upper part of the editor.

Information	Description
Mirror Rule	Rule (defined in Rule Editor) used to select the parent transaction.
Package Main Type	Main package type for the package type. You need to select a <b>Package Main Type</b> before you select a <b>Package Type</b> . Package main types are defined in Package Type Editor.
Package Type	Package into which the child transactions will be grouped. Package types are defined in Package Type Editor.

2. In the **Parent and Type** section of the **Child Attributes** page, fill in the fields specific to the mirror case.

Information	Description
Child	Number of this particular child transaction.
Mirror Type	Type of mirror case. Choose from: Duplicate, Spot, Swap, Forward, Payment, and Depo/Loan.  Note: The values required to set up a mirror case which are described in this section apply to all mirror types unless otherwise specified. The values that are specific to a particular mirror type are described in 8.5.2.2.1 <i>Setting up specific mirror types</i> on page 310.

Information	Description
Derived From	<p>Number of the parent transaction from which the child transaction is derived:</p> <ul style="list-style-type: none"> <li>• Enter "0" if you are referring to the initial transaction.</li> <li>• Enter the child's number (from the <b>Child</b> field) if you want to derive the transactions from another parameterized child transaction from this mirror case.</li> </ul>

3. In the **Attributes** section of the **Child Attributes** page, fill in the fields using the information in the following table.

Information	Description
Portfolio	<p>Portfolio into which the child transaction should go.</p> <ul style="list-style-type: none"> <li>• Parent Portfolio - the same portfolio as its parent transaction.</li> <li>• Parameterized Parent Portfolio - a portfolio whose name is derived from either: the whole of the parent portfolio's name, plus a suffix; or from the first few characters taken from the parent portfolio's name, plus a suffix. The number of characters used is defined in the <b>Portfolio Prefix</b> field.</li> </ul> <p>The suffix can be any character string and represent, for example, the currency ID of the transaction.</p> <ul style="list-style-type: none"> <li>• Parent Counterparty - a portfolio that has the same name as its parent transaction's counterparty.</li> </ul> <p>For example, when the counterparty of the parent transaction is "Acme," the child transaction goes into the portfolio "Acme." You need to set up the appropriate information in Client Editor and in Portfolio Editor before using this option.</p> <ul style="list-style-type: none"> <li>• Parameterized Parent Counterparty - a portfolio whose name is derived from either: the whole of the name of the parent transaction's counterparty, plus a suffix; or from the first few characters taken from the name of the parent transaction's counterparty, plus a suffix. The number of characters used is defined in the <b>Portfolio Prefix</b> field.</li> </ul> <p>This can be useful for portfolios named after subsidiaries. For example, transactions with "Subsidiary A" can be mirrored to "Subsidiary A USD," "Subsidiary A EUR," and "Subsidiary A JPY." The suffix can be any character string.</p> <ul style="list-style-type: none"> <li>• Parameterized Portfolio - a portfolio whose name is not derived from another portfolio but is solely composed of a prefix and a suffix.</li> </ul>
Portfolio Prefix	<p>Prefix to use for the portfolio (for use only when you use one of the Parameterized options in the <b>Portfolio</b> field).</p> <p>Choose from:</p> <ul style="list-style-type: none"> <li>• Currency ID - to use the currency ID.</li> <li>• Enter a number to specify how many characters are taken from the name of the portfolio or the name of the parent transaction's counterparty.</li> </ul>
Portfolio Suffix	<p>Suffix to use for the portfolio (for use only when you use one of the Parameterized options in the <b>Portfolio</b> field).</p> <p>Choose from:</p> <ul style="list-style-type: none"> <li>• Currency ID - to use the currency ID.</li> <li>• Any character string.</li> </ul> <p>For example, if the parent portfolio is named <code>TRADING</code> and you are parameterizing the name by currency, the name of the child portfolio used is <code>TRADINGUSD</code> when the currency of the transaction is USD.</p>

Information	Description
Instrument	<p>Instrument for the child transaction. In addition to the instruments defined in TRM, you can choose from:</p> <ul style="list-style-type: none"> <li>• Parent Instrument - the same instrument as its parent. This is useful for the Duplicate mirror type, and for some FX transactions.</li> <li>• Parameterized Instrument - based on a combination of the full name of the parent instrument's ID or the currency ID of the transaction, depending on what you select in the <b>Instrument Prefix</b> and <b>Instrument Suffix</b> fields.</li> </ul>
Instrument Prefix	<p>(For use only if you have chosen Parameterized Instrument in the <b>Instrument</b> field). Choose from:</p> <ul style="list-style-type: none"> <li>• Any string, such as Depo/Loan.</li> <li>• Currency ID - to use the currency ID.</li> <li>• Parent Instrument - to use the name of the parent instrument.</li> </ul>
Instrument Suffix	<p>(For use only if you have chosen Parameterized Instrument in the <b>Instrument</b> field). Choose from:</p> <ul style="list-style-type: none"> <li>• Any string, such as Depo/Loan.</li> <li>• Currency ID - to use the currency ID.</li> <li>• Parent Instrument - to use the name of the parent instrument.</li> </ul> <p>For example: you can set the prefix as <code>DEPO/LOAN</code> and the suffix equal to the currency ID. The instrument would then be <code>DEPOLOANUSD</code> when the currency of the transaction is USD.</p>
Counterparty	<p>Counterparty of the child transaction. In addition to the counterparties defined in TRM (a client with the <code>Counterparty</code> role), you can choose from:</p> <ul style="list-style-type: none"> <li>• Parent Counterparty - the same counterparty as its parent. This is useful for the Duplicate mirror type.</li> <li>• Parent Portfolio - the portfolio of the parent.</li> <li>• Parent Portfolio Owner - the portfolio owner of the parent.</li> </ul>
Transaction Direction	<p>Direction of the child's transaction. You can choose from:</p> <ul style="list-style-type: none"> <li>• Parent Direction - to use the same as the parent's.</li> <li>• Reverse Direction - to use the opposite of the parent (buy becomes sell, and sell becomes buy).</li> <li>• Positive Direction - always positive, no matter what the direction of the parent.</li> <li>• Negative Direction - always negative, no matter what the direction of the parent.</li> <li>• Reverse Direction/Reverse Adjusts - to override the default TRM handling of margins when the duplicate of a transaction with adjusts is done.</li> <li>• Reverse Direction/All Cashflows - (Duplicate mirror type only) to reverse all cashflows (including, for example, charges).</li> </ul>

Information	Description
Amount	<p>Value to determine the amount of the child. You can choose from the following:</p> <ul style="list-style-type: none"> <li>• Parent Amount - to use the parent's amount</li> <li>• Parameterized Parent Amount - to use a multiple of the parent's amount: for example 2 for twice the amount, 0.5 for half the amount, and so on. You specify the actual multiplier using the <b>Amount Multiple</b> field.</li> <li>• Parent Cashflow Amount - to use the amount of the parent's cashflow. The actual cashflow that is used to supply the amount depends on the values you selected for the <b>Parent Cashflow Type</b>, <b>Parent Cashflow Group</b>, and <b>Parent Cashflow Currency</b> fields.</li> <li>• Parameterized Parent Cashflow Amount - (Payment mirror type only) to use a multiple of the parent cashflow's amount (for example, 2 for twice the amount, 0.5 for half the amount, and so on). You specify the actual multiplier using the <b>Amount Multiple</b> field.</li> <li>• Parent Adjust Amount - (Payment mirror type only) to use the margin adjust of the parent.</li> <li>• Discounted Parent Amount - (Spot and Swap mirror types only) to use the discounted amount of the parent.</li> <li>• Parent Discount - (Spot mirror type only) to use the discount of the parent; in other words, Amount - Discounted Parent Amount.</li> <li>• Settlement Amount - to use the settlement amount of the parent.</li> <li>• Parent Cashflow Settlement Amount - to use the settlement amount of the parent's cashflow.</li> </ul>
Opening Date	Opening date for the child transaction.
Value Date	Value date for the child transaction.

4. In the **Attribute Overrides** section of the **Child Attributes** page, fill in the fields specific to the mirror case.

Information	Description
Counterparty	<p>Select the custom parameter or property (defined in Parameter Editor or Property Editor) that you would like to use to override the default value for the counterparty.</p> <p>To do the override:</p> <ol style="list-style-type: none"> <li>1. In this field, select the value to use here which corresponds to the parameter or property you have defined for this purpose. For example, you have renamed Parameter 7 as Mirror Counterparty. The parameter is listed in the transaction column selection list.</li> <li>2. In Transaction Manager, select Mirror Counterparty (Parameter 7) as one of the transaction columns.</li> <li>3. In the Parameter 7 column, enter the counterparty that you want to use for the mirror child. You can define a selection list of the allowed values in Parameter Editor.</li> </ol> <p>Note: To meet any extra transaction specification needs your organization may have, you can define up to ten of your own custom parameters for transactions or payments: see 3.38 <i>Parameters (optional)</i> on page 148 for more information. Properties of type string (and string-based IDs) and number can be used: see 3.39 <i>Properties (optional)</i> on page 148.</p>
Portfolio	As for Counterparty above, except this time it is to override the portfolio.
Deal Rate	(For Duplicate, Depo/Loan, Spot, Forward, and Swap mirror types) Use the deal rate from special attributes.
FX Spot Rate	(For Spot, Forward, and Swap mirror types) Value taken from the parameter.

Information	Description
FX Fwd Points	(For Spot, Forward, and Swap mirror types) Value taken from the parameter.
Amount Multiple	Value taken from the parameter.

5. In the **Switches** section of the **Child Attributes** page, turn on the switches you need that are specific to the mirror case.

Switch	Description
Strip-Off Margins	Select this if you want to delete margin cashflows on the child transaction. For long term loans, you will also delete the Margin schedule on the child transactions and adjust the rate of the corresponding interest schedule.
Apply Only	Select this if you want the transaction to stay in state Open in Transaction Manager's Deal Capture mode and not be moved along the transaction flow.
Standalone	Select this to prevent the status Mirror Child (256) from being set on the new child transaction. The parent number stays filled and connects the child with its parent transaction.  When mirroring goes wrong, this standalone child is cancelled, along with all the other children created. When mirroring successfully completes, the child is already standalone and is no longer connected to the parent movement in the flow. As children and parent transactions are not bound through child status, it is no longer possible to cancel the child transaction when reopening the parent.  It is also possible to reopen a child transaction and to perform another mirroring after the commit. The former child transaction is now a parent of other child transactions. Once the child transaction is created as not bound, it cannot be bound retrospectively.
Not Bookable	Select this to prevent the child transaction cashflows from being booked.  This can be useful for distinguishing between "real" mirrored transactions and transactions that were mirrored only for simulation or reporting purposes.
Not Payable	Select this to define the child transaction cashflows as not to be paid.  This can be useful for distinguishing between "real" mirrored transactions and transactions that were mirrored only for simulation or reporting purposes.
Strip-Off Margins (Nominal Rate)	This is the same as Strip-Off-Margins except the Deal Rate is set to the Nominal Rate on the child transaction.
Generate Difference Cashflow	(Not in use in this version of TRM)

6. Click **Add**.

You can add several child transactions by repeating the procedure, incrementing the number in the **Child** field each time. Child transactions can be derived from either the initial transaction, or from another mirror child (as defined in the **Derived From** field in the **Parent and Type** section of the **Child Attributes** page).

7. In the **Not Rule** field on the **Rule Exceptions** page, select a rule to exclude any transactions from the mirror rule.
8. Select **File - Save As New** to save the mirror case.

### 8.5.2.2.1 Setting up specific mirror types

In addition to the generic values described in 8.5.2.2 *Configuring mirror cases* on page 305, the following sections describe the values you can set up for a specific mirror type.

#### Mirror Type = Duplicate

Use the Duplicate mirror type to create a duplicate of the parent transaction.

Information	Description
Opening Date	Opening date for the child transaction. You can choose from the following: <ul style="list-style-type: none"> <li>Parent Opening Date - to use the parent transaction's opening date. This is the default value if you leave this field blank.</li> <li>Today - use today's date. This will then have an impact on the other dates (value date, maturity date, and so on). Today is relevant only when the parent transaction is an FX Spot, FX Forward, or FX Swap.</li> </ul>
Value Date	Value date for the child transaction. You can choose from the following: <ul style="list-style-type: none"> <li>Parent Value Date - to use the parent's value date. This is the default value if you leave this field blank.</li> <li>Spot Date - to use the parent's spot date. This has an impact on the other dates (maturity date, and so on). Spot Date is relevant only when the parent is an FX Spot, FX Forward, or FX Swap.</li> </ul>
Strip-Off Adjusts	Adjusts Deal Rate. Switch on to remove margins (adjust fields) from the parent before the child transaction is generated. This is relevant only when the parent is an FX Spot, FX Forward, FX Swap, or MM depo/loan.
Strip-Off Adjusts (Nominal Rate)	Adjusts Nominal Rate and Deal Rate. Switch on to remove margins (adjust fields) from the parent before the child transaction is generated. This is relevant only when the parent is an FX Spot, FX Forward, FX Swap, or MM depo/loan.
Lead Amount	Specifies whether the amount is by the base or quote amount, or keeps the setting of the parent transaction.
Deal Rate	Choose one of the following: Parent Deal Rate or Override.
Nominal/Spot Rate	Select Parent Nominal/Spot Rate to copy the parent transaction's nominal/spot rate into the child transaction.

#### Mirror Type = Spot

Use the Spot mirror type to derive an FX Spot deal from an FX Forward, FX Spot, FX Swap, MM, or Equity parent transaction.

Information	Description
FX Spot Rate	FX spot rate of the child spot deal. This field is mandatory if the parent is an FX transaction. You can choose from the following: <ul style="list-style-type: none"> <li>Parent Spot Rate</li> <li>Parent Final Spot Rate</li> <li>Parent Final FX Rate.</li> </ul>
Deal Rate	Rate used for the deal. This field is mandatory if the parent is an FX transaction. You can choose from the following: <ul style="list-style-type: none"> <li>Parent Spot Rate</li> <li>Parent Deal Rate</li> <li>Market Rate</li> <li>Override from parameter.</li> </ul>

Information	Description
Opening Date	Opening date for the child. This field is mandatory. You can choose from the following: <ul style="list-style-type: none"> <li>Parent Opening Date - to use the parent's opening date. This is the default value if you leave this field blank.</li> <li>Today - use today's date. This will then have an impact on the other dates (value date, maturity date, and so on).</li> <li>Parent Spot Date - to use the parent's spot date.</li> </ul>
Value Date	Value date for the child. This field is optional. You can choose from the following: <ul style="list-style-type: none"> <li>Parent Value Date - to use the parent's value date. This is the default value for this field.</li> <li>Spot Date - to use the parent's spot date. This will then have an impact on the other dates (maturity date, and so on).</li> </ul>
Amount	Choose from: <ul style="list-style-type: none"> <li>Settlement Amount</li> <li>Parameterized Parent Amount</li> <li>Parent Amount</li> <li>Discounted Parent Amount - use this, for example, when an uneven swap is being mirrored into an FX forward and an FX spot. This is valid only if the parent is an FX transaction.</li> <li>Parent Discount - use this, for example, when an FX swap is mirrored in two depo/loans and one spot. Amount is taken from Book/Ref Value from cashflow.</li> </ul>
Lead Amount	Specifies whether the amount is by the base or quote amount, or keeps the setting of the parent transaction.
Payment/2nd currency	Second currency if the parent is an MM or equity transaction. The default value is the portfolio-based currency.
FX Spot Rate	FX spot rate of the child spot deal. This field is mandatory if the parent is an FX transaction. You can choose from the following: <ul style="list-style-type: none"> <li>Parent Spot Rate</li> <li>Parent Final Spot Rate</li> <li>Parent Final FX Rate.</li> </ul>
Deal Rate	Rate used for the deal. This field is mandatory if the parent is an FX transaction. You can choose from the following: <ul style="list-style-type: none"> <li>Parent Spot Rate</li> <li>Parent Deal Rate</li> <li>Market Rate</li> <li>Override from parameter.</li> </ul>

### Mirror type = Forward

Use the Forward mirror type to derive an FX forward from an FX Swap, MM or Equity transaction.

The child forward transaction amount is equal to the amount of the parent swap. The child may have different spot or forward FX rates from its parent.

Information	Description
FX Spot Rate	FX spot rate of the forward child deal. You can choose from the following: <ul style="list-style-type: none"> <li>Parent Spot Rate</li> <li>Parent Final Spot Rate</li> <li>Parent Final FX Rate.</li> </ul>

Information	Description
FX Forward Points	Forward points to use when deriving the child. You can choose from the following: <ul style="list-style-type: none"> <li>• Parent Forward Points</li> <li>• Parent Total Forward Points.</li> </ul>
Opening Date	Opening date for the child. This field is optional. You can choose from the following: <ul style="list-style-type: none"> <li>• Parent Opening Date - to use the parent's opening date. This is the default value if you leave this field blank.</li> <li>• Today - use today's date. This will then have an impact on the other dates (value date, maturity date, and so on).</li> </ul>
Value Date	Value date for the child. This field is optional. You can choose from the following: <ul style="list-style-type: none"> <li>• Parent Value Date - to use the parent's value date. This is the default value if you leave this field blank.</li> <li>• Spot Date - to use the parent's spot date. This will then have an impact on the other dates (maturity date, and so on).</li> </ul>
Amount	One of the following: Parameterized Parent Amount or Settlement Amount.
Lead Amount	Specifies whether the amount is by the base or quote amount, or keeps the setting of the parent transaction.
Deal Rate	Choose one of the following: <ul style="list-style-type: none"> <li>• Parent Deal Rate</li> <li>• Market Rate (this is the default)</li> <li>• Override.</li> </ul>
Payment/2nd Currency	Currency if the parent is an MM or Equity transaction. The default value is the portfolio-based currency.

### Mirror type = Swap

Use the Swap mirror type to derive an FX swap from an FX Spot, FX Forward, another FX Swap, MM, or Equity transaction.

The child swap transaction amount is equal to the amount of the parent. For swaps, "amount" is the far amount, and you can set up the generation of uneven swaps by configuring the child's near amount to the discounted amount. (This can be combined, for example, with a generation of discounted spot mirror child). The child may have different spot and forward rates from its parent.

If you are generating the FX swap from an FX spot deal, the value date of the FX spot must be different from its spot date, otherwise the generated cashflows cancel each other out. So, when entering the FX spot you need to make the value date earlier than the spot date (or the FX instrument definition has to have the value date earlier than the spot). This is true, for example for "cash" spot transactions.

Information	Description
FX Spot Rate	FX spot rate of the swap child deal. This field is mandatory if the parent is an FX transaction. You can choose from the following: <ul style="list-style-type: none"> <li>• Parent Spot Rate</li> <li>• Parent Final Spot Rate</li> <li>• Parent Final FX Rate.</li> </ul>
FX Forward Points	Forward points to use when deriving the child. This field is mandatory if the parent is an FX transaction. You can choose from the following: <ul style="list-style-type: none"> <li>• Parent Forward Points</li> <li>• Parent Total Forward Points.</li> </ul>



Information	Description
Opening Date	Opening date for the child. This field is optional. You can choose from the following: <ul style="list-style-type: none"> <li>Parent Opening Date - to use the parent's opening date. This is the default value if you leave this field blank.</li> <li>Today - use today's date. This will then have an impact on the other dates (value date, maturity date, and so on).</li> </ul>
Value Date	Value date for the child. This field is optional. You can choose from the following: <ul style="list-style-type: none"> <li>Parent Value Date - to use the parent's value date. This is the default value if you leave this field blank.</li> <li>Spot Date - to use the parent's spot date. This will then have an impact on the other dates (maturity date, and so on).</li> </ul>
Amount	Parent Amount, Parameterized Parent Amount and Settlement Amount are supported.
Spot Amount	Used for the near cashflow. You can select Discounted Parent Amount to generate an uneven FX swap.
Lead Amount	Specifies whether the amount is by the base or quote amount, or keeps the setting of the parent transaction.
Deal Rate	Choose one of the following: <ul style="list-style-type: none"> <li>Parent Deal Rate</li> <li>Market Rate</li> <li>Override.</li> </ul>
Payment/2nd Currency	Currency if the parent is an MM or Equity transaction. The default value is the portfolio-based currency.

### Mirror Type = Depo/Loan

Use the Depo/Loan mirror type to derive a depo/loan from an FX Forward, Swap, MM or Equity transaction.

Information	Description
Parent Cashflow Currency	If the parent is an FX transaction, select either the base or quote cashflow currency, or any of the currencies available in the list.
Amount	Select Parent Cashflow Amount if the parent is an FX transaction, otherwise select Parent Amount, if the parent is an MM or Equity transaction.
Deal Rate	If the parent is an FX transaction, you can select either of the following for the Deal Rate: <ul style="list-style-type: none"> <li>Parent FX Forward Points Based - to use the rate based on the forward points. This is the most commonly used option.</li> <li>Parent Currency Interest Rate Based - to use the rate based on the interest rate linked with the parent currency (fields Quote Currency %, Base Currency %).</li> </ul>

Information	Description
Use Parent Settings	<p>If the Depo/Loan is derived from an MM or Equity parent transaction, the child transaction inherits the following from the parent:</p> <ul style="list-style-type: none"> <li>date basis, accrued date basis</li> <li>payment convention, interest adjustment</li> <li>coupons per year, amount precision</li> <li>nominal/spot rate</li> <li>accrued from (= From When column of accrued interest cashflow)</li> <li>fixing offset, fixing period, fixing rate, fixing calendar</li> <li>spread, repayment method, repayment %, repayment per year</li> <li>first irregular interest period</li> </ul> <p>If the parent is a Swap transaction, the first leg of the child Swap transaction is filled from the second leg of the parent transaction. In all other cases, the first leg is taken from the parent MM or Equity transaction. If the parent fields are empty, they are searched during setup of the child instrument in the instrument definition.</p>

### Mirror Type = Payment

Use the Payment mirror type to derive a payment from the parent transaction.

Field	Description
Parent Cashflow Type	Select the cashflow type depending on your instrument type. If you have an FX instrument you do not need to select a value here.
Parent Cashflow Leg Group	Used for swaps. This is the leg for which you want to generate a payment. You can choose from: <ul style="list-style-type: none"> <li>• Near Leg (value date flow)</li> <li>• Far Leg (maturity date flow).</li> </ul>
Parent Cashflow Currency	Used for payments from FX deals (spots, forwards, swaps). The currency of the parent cashflow. You can choose from: <ul style="list-style-type: none"> <li>• Quote Currency</li> <li>• Base Currency</li> <li>• Any actual currency that is specified in the list.</li> </ul>
Amount	Select either: <ul style="list-style-type: none"> <li>• Parent Cashflow Amount</li> <li>• Parameterized Parent Cashflow Amount</li> <li>• Parent Cashflow Settlement Amount - if you select this option, you do not need to specify a currency; the Settlement Currency will be used by default.</li> </ul>
Amount Multiple	Use this field if <b>Amount</b> = Parameterized Cashflow Amount. This is the number by which the parent cashflow amount will be multiplied to produce the child amount.
Opening Date	Opening date for the child. You can choose from the following: <ul style="list-style-type: none"> <li>• Parent Opening Date - to use the parent's opening date. This is the default value if you leave this field blank.</li> <li>• Parent Cashflow Value Date - the default is to use the value date of the parent's cashflow.</li> <li>• Parent Cashflow From When - to use the date from the cashflow's From When field.</li> </ul>
Value Date	Value date for the child. This field is optional. You can choose from the following: <ul style="list-style-type: none"> <li>• Parent Cashflow Value Date - the default is to use the value date of the parent's cashflow.</li> <li>• Spot Date - to use the spot days of the currency.</li> </ul>

### 8.5.2.3 Generating mirrored deals

To generate mirrored deals:

1. In addition to the standard transaction columns, select the deal mirroring specific transaction columns in Transaction Manager:
  - **Parent Number** - the transaction number of the parent transaction.
  - **Status** - the status of the transaction, which can be either Mirror Parent or Mirror Child.
2. Enter a deal (as described in 8.2 *Capturing deals* on page 263) that matches a mirror case.

---

**Note:** The deal must also match a mirror switch rule.

---

3. Select **Command - Apply** and/or **Command - Commit** to save the deal.

The child transactions are generated by a mirror server according to the rule and mirror case.

---

**Note:** The mirror switch rule and the mirror server are managed by the system administrator.

---

### 8.5.2.4 Querying mirrored deals

To retrieve all mirrored parent and child deals, even those not directly linked by the parent number, i.e. in the case of rollovers, select **Include Mirror Transactions** in Transaction Manager's **Options** menu. See 8.1.1.5 *Options* on page 261.

### 8.5.2.5 Canceling mirrored deals

To cancel a mirrored deal:

1. In Transaction Manager, select the deal you want to cancel.
2. Select **Command - Re-Open**.

---

**Note:** You cannot re-open transactions that have the status Mirror Child; you can only re-open the transactions that have the status Mirror Parent.

---

## 8.6 Managing call transactions

A Call Account is similar to a normal bank account. The client can withdraw and deposit funds (lend or borrow) from the account whenever it is necessary. The funds earn interest on the account at a rate that is fixed daily. The interest is accrued and paid or capitalized at regular intervals. The client can withdraw all or part of the interest from the account when interest is payable (without first having to capitalize the interest).

Call Money is an overnight deposit used in the wholesale banking market. Although such transactions are normally expired the following day, they can also be rolled over and the interest rate changed. It is possible to increase/decrease the principal of the original deal. In addition, the interest can be paid, capitalized, or simply accrued.

The main difference between Call Money and Call Account is the presumed length of the transaction. Call Money is assumed to mature on a daily basis, while Call Account is automatically rolled over every day.

Call Money and Call Account instruments are set up in Instrument Editor.

---

**Note:** See the guide *TRM Instruments: Processing and Calculations* for details about setting up call money or call account instruments.

---

## 8.6.1 Call Manager

Call Manager is an application based on the Transaction Manager application layout, designed specifically for managing Call Money and Call Account transactions.

### 8.6.1.1 Call Manager menus

The menu items in the Call Manager applications are basically the same as the menu items in Transaction Manager (see *8.1.1 Transaction Manager menus* on page 258). The exceptions are described in the following tables.

#### 8.6.1.1.1 View

Menu item	Description
Cashflow	Displays the Cashflow view. This view shows historical cashflow information for the currently selected transaction. It displays all movements made on the trade, and the accrued interest within the period defined. Note: You cannot modify call transactions in this view.
Movement	Displays the Movement view. This view is used to enter new movements on a call transaction. Users with the correct permissions (for example, a back-office administrator) can also amend the payment details in this view.
Daily Balances	Displays the Daily Balances view. This view displays the daily opening and closing balances of the call transactions. It also displays realized and unrealized accrued interest figures.

#### 8.6.1.1.2 Options

Menu item	Description
Call Configuration	Choose from: <ul style="list-style-type: none"> <li>• <b>Query Only Active Transactions</b> - allows you to restrict the query to only search for active transactions when you are retrieving call transactions.</li> <li>• <b>Query Only Expired Transactions</b> - allows you to restrict the query to only search for expired transactions when you are retrieving call transactions.</li> <li>• <b>Automatically Update Balances</b> - automatically updates the balances after any action (such as roll over or interest realization): see <i>8.6.1.3 Automatically updating balances</i> on page 317.</li> </ul>

#### 8.6.1.2 Start-up parameters

The start-up parameter used to open Transaction Manager's Call Manager mode is:

```
FKTransactionManager.exe -c CM.xml
```

See *C.11 Transaction Manager* on page 685 for information about the options available.

#### 8.6.1.3 Automatically updating balances

To automatically update the balances after any action (such as roll over or interest realization), the **Automatically Update Balances** item in the **Options** menu must be selected.

In most situations, you should have this item selected unless you are doing back-dated deals that have automated realization set up in the call instrument definition.

When performing back-dated deals with this option selected, TRM forwards the date on which the change is valid to the bank account balance calculation. Instead of recalculating the balance from

the opening date, the balance is recalculated only from the "change" date onwards. Depending on the type of back-dated change, this date is calculated as follows (numbers represent calendar days):

- Movement: Value Date -1
- Update AI: Date entered -1
- Realize AI: Opening Date entered -1
- Undo Realize AI: Date entered -1
- Expire: Expiring Date entered -1
- Undo Expire: Date entered -1.

## 8.6.2 Entering call transactions

Call account or call money transactions are entered in a similar way to other types of deals (see 8.2 *Capturing deals* on page 263).

1. In Call Manager, select **New - Transaction**.

2. Enter the call transaction information in the new row in the Transaction view.

Some of the data required to enter a deal is common to all types of transactions (see 8.2.1 *Entering new deals in Transaction Manager* on page 264).

For information about the specific data required for call transactions, see the relevant section of the guide *TRM Instruments: Processing and Calculations*.

3. Select the appropriate actions from the **Command** menu to save the transaction and move its state forward in the transaction flow.

## 8.6.3 Processing call transactions

In Call Manager, you can perform several actions on call money or call account transactions, some of which are common to both types of call transactions (for example, **Realize AI**), while others are specific to one type of call transaction only (for example, **Dormant/Pledged** on call account transactions).

These actions become available when you select the transaction in the appropriate view of Call Manager and right-click. The actions that you are able to carry out on the selected call transaction are displayed in a pop-up menu.

The call dialog displays a default settlement date from the calendar of the redemption schedule, to be used as the payment date of the settlement cashflow. You can overwrite this date.

---

**Note:** For information about processing call transactions, see the guide *TRM Instruments: Processing and Calculations*.

---

## 8.6.4 Generating call reports

There are a number of reports you can use to view call information:

Report	Description
Call (Portfolio) Call (Transaction)	These reports display the balances, movement, and interest over a given period. They only display call money or call accounts that match the parameters: they do not display any other types of instruments.  See <i>B.5 Call Reports</i> on page 661 for details of the reports' parameters.

## 8.7 Managing cashflow forecasts

A cashflow forecast is the estimation of a money transfer (payment or receipt) in the future where the exact amount is not currently known. The estimation may change over time.

When TRM is used with the Cash Management Module (CMM), CMM can provide TRM with cashflow forecasts. The forecasts imported from CMM are aggregated and turned into forecast exposures and saved in TRM.

TRM is then able to use these forecast exposures in figure calculations (both for risk management and hedge accounting), and in the hedge accounting process.

---

**Note:** See *19.5 Hedge accounting in Wallstreet Suite* on page 546 for more information about hedge accounting.

---

### 8.7.1 Setting up forecast instruments

The instruments used to generate forecast exposures in TRM are defined in Instrument Editor.

The setup for Forecast Exposure instruments is described in the guide *TRM Instruments: Processing and Calculations*.

### 8.7.2 Setting up cashflow forecasting

This section describes how to define the parameters and criteria used to import cashflow forecasts from CMM, and how to group together these values in order to generate forecast exposures in TRM.

---

**Note:** All editor layouts used to set up cashflow forecasting parameters are based on the application Static Data Editor (see *3.2 Static Data Editor* on page 41 for more information).

---

#### 8.7.2.1 Defining forecast aggregation values

The values used for the aggregation (grouping) of the forecasts that are imported from CMM are defined in Forecast Aggregation Editor.

To define the values used for the grouping of imported forecasts:

1. In Forecast Aggregation Editor, enter the main values of the aggregation in the upper part of the editor.

Information	Description
ID & Name	Unique ID and name for the aggregation.
Domain	Domain in which the aggregation is available.

2. From the **Cashflow Forecast Aggregation** page's **Name** field in the lower part of the editor, select and add the values used to aggregate the forecasts.

The selection list contains the CMM fields that are available for aggregation.

3. Save the aggregation values using **File – Save As New**.

---

**Note:** To use forecast exposure, all the fields in the aggregation list must be mapped in the mapping list. See *8.7.2.3 Defining forecast mapping* on page 320 for more information.

---

#### 8.7.2.2 Defining forecast queries

The criteria used to select which exposures are imported from CMM are defined in a query in Forecast Query Editor.

To define the values applied in the query for the importing of forecasts:

1. In Forecast Query Editor, enter the main values of the query in the upper part of the editor.

Information	Description
ID & Name	Unique ID and name for the query.
Domain	Domain in which the query is available.

2. In the **Cashflow Forecast Selection Params** page in the lower part of the editor, select and add each field that you want to include in the query with the corresponding value it needs to meet the selection criteria.

Information	Description
Field	CMM fields available for the query.
Operator	Operator that can be used to configure an expression. For example, if you want to import all forecasts in a currency other than your home currency (EUR), set up the criteria as follows: <b>Field = Entity Currency ID, Operator = "!=" (not equal to), Value = EUR</b> The following operators are available: <ul style="list-style-type: none"> <li>• "==" - selection value equal to forecast value</li> <li>• "!=" - not equal</li> <li>• "&gt;" - greater than</li> <li>• "&lt;" - smaller than</li> <li>• "&gt;=" - greater than and equal to</li> <li>• "&lt;=" - smaller than and equal to</li> </ul>
Value	Available values for the selected CMM field, for example, a list of currencies, or entities.
Source	Available forecast exposure values.

3. Save the selection query using **File – Save As New**.

### 8.7.2.3 Defining forecast mapping

Mapping of TRM fields to CMM fields for the purpose of importing cashflow forecasts is done in Forecast Field Mapping Editor. The Forecast Field Mapping Editor specifies the relationship between columns on forecasts returned from CMM and columns in TRM.

To map one TRM field to one or more CMM fields:

1. In Forecast Field Mapping Editor, enter the main attributes of the forecast mapping.

Information	Description
ID & Name	Unique ID and name for this forecast mapping.
Domain	Domain in which the forecast mapping is available.

2. In Forecast Field Mapping Editor's **Mapping** page, specify the TRM field that maps to one or more CMM fields. To map a TRM field to a combination of CMM fields, use the plus sign '+' to separate the CMM fields as shown in the following example:

TRM Field = Forecast ID

CMM Field = Time Bucket To + Workflow Status + Counterparty ID

3. Repeat the procedure for each TRM/CMM field combination you want to define in the mapping.

4. Save the forecast mapping definition using **File – Save As New**.

---

**Note:** To use forecast exposure, all the fields in the mapping list have to be in the aggregation list. See *8.7.2.1 Defining forecast aggregation values* on page 318 for more information.

---

### 8.7.2.4 Defining forecast exposure capture

In Forecast Exposure Capture Editor, you link the criteria you defined for the aggregation and selection of imported forecasts with a Forecast Exposure instrument and other forecast exposure parameters (for example, the Portfolio, to determine into which portfolio the forecast exposure will be imported).

To define forecast exposure capture:

1. In Forecast Exposure Capture Editor, enter the information used to generate the forecast exposures using the information in the following table:

Information	Description
ID & Name	Unique ID and name for this forecast exposure capture.
Domain	Domain in which the forecast exposure capture is available.
Portfolio	Portfolio into which the forecast exposure transaction is placed under this forecast exposure capture.
Instrument	Forecast Exposure instrument used with this forecast exposure capture. Note: See the guide <i>TRM Instruments: Processing and Calculations</i> for information on how to set up this type of instrument.
Counterparty	Counterparty used for the forecast exposure capture.
Owner	Portfolio owner used for the forecast exposure capture.
Currency	Currency of the forecast exposure capture.
Aggregation	Aggregation values used for the grouping of imported forecasts (as defined in Forecast Aggregation Editor) under this forecast exposure capture. See <i>8.7.2.1 Defining forecast aggregation values</i> on page 318.
Selection	Selection criteria used to determine which forecasts to import (as defined in Forecast Query Editor) under this forecast exposure capture. See <i>8.7.2.2 Defining forecast queries</i> on page 319.
Mapping	Criteria (defined in Forecast Mapping Editor) used to determine field mapping between Wallstreet Suite modules (TRM and CMM). See <i>8.7.2.3 Defining forecast mapping</i> on page 320.
Result Mode	Specific result mode (accounting standard) that the forecast exposure capture is linked to. The groups AS-LOCAL, AS-FAS, AS-IFRS are preconfigured during implementation.
Active Since	Date range within which this forecast exposure capture is valid.
Active Until	Leave these fields blank if this exposure capture is valid indefinitely.

2. Save the forecast exposure capture you have defined using **File – Save As New**.

### 8.7.2.5 Importing forecast exposures

Forecast exposures in TRM correspond to a group of cashflow forecasts that have been imported into the system from CMM.



- To import forecast exposures from CMM into TRM, you use the *Forecast Exposures from CMM* activity: see *A.35 Forecast Exposures from CMM* on page 641 for details of the activity's parameters.

---

**Note:** The **Due Date** specified in the activity setup corresponds to the "as of date" in the CMM report. The "as of date" can be compared to the **Opening Date** in TRM.

---



---

**Note:** Activities are set up and managed in Activity Manager: see *Chapter 6 Managing activities* on page 227 for more information.

---

## 8.7.3 Forecast Exposure Board

A cashflow forecast is the estimation of a money transfer (payment or receipt) in the future where the exact amount is not currently known. The estimation may change over time.

In TRM, a forecast exposure corresponds to a group of cashflow forecasts that has been imported into the system from CMM.

Forecast Exposure Board is an application based on the Transaction Manager application layout, designed specifically for managing forecast exposures.

Forecast Exposure Board is used to query aggregated forecast exposures that have been imported from CMM, and allows you to drill down into the individual cashflow forecasts. It is also possible to view the state of both current and historical forecasts and make any adjustments to the forecast if necessary.

### 8.7.3.1 Forecast Exposure Board menus

The menu items in Forecast Exposure Board are basically the same as the menu items in Transaction Manager (see *8.1.1 Transaction Manager menus* on page 258). The exceptions are described in the following tables.

#### 8.7.3.1.1 View

Menu item	Description
Forecast Exposures Query	Displays the <b>Forecast Exposures Query</b> view. This view is used to enter search criteria in order to retrieve forecast exposures. The retrieved forecast exposures are displayed in the Forecast Exposures view.
Exposure Drilldown	Displays the <b>Exposure Drilldown</b> view. This view displays the results when a <b>Drill Down</b> action has been performed on a forecast exposure.
Figures	Displays the <b>Figures</b> view. This view displays the figures for the selected forecast exposure following the <b>Calculate Figures</b> right-click action.

### 8.7.3.2 Start-up parameters

The start-up parameter used to open Transaction Manager's Forecast Exposure mode is:

```
FKTransactionManager.exe -c FE.xml --view forecast-exposure --title "Forecast Exposure Board"
```

See *C.11 Transaction Manager* on page 685 for information about the options available.

## 8.7.4 Processing forecast exposures

In Forecast Exposure Board, you can perform several actions on forecast exposures, for example, **Adjust** and **Drill Down**).

These actions become available when you select the forecast exposure in the **Forecast Exposures** view of Forecast Exposure Board and right-click. The actions that you are able to carry out on the selected forecast exposure are displayed in a pop-up menu.

---

**Note:** For information about processing forecast exposures, see the guide *TRM Instruments: Processing and Calculations*.

---

## 9.1 Overview

---

**Important:** Supported trading platforms are 360T and FXall using the FIX protocol 4.4. Only FX Spot, Forward, NDF and Swap are supported in this version.

---

Order management is a front office application. Order management provides traders with a means to enter orders (namely, single FX orders) and to automatically route them internally within Wallstreet Suite or externally to the foreign currency trading platform (360T, 360T Intergroup Exchange or FXall).

The two-way interface with FXall and 360T consists in single FX (Spot, Forward, NDF, Swap) orders export and executions imports between Wallstreet Suite and these trading platforms using the FIX protocol. A one-way interface from FXall QuickTrade or 360T is also possible, so that orders directly processed and executed in these platforms are imported in Wallstreet Suite.

Furthermore, 360T Intergroup Exchange is mainly used for orders processed on behalf of subsidiaries. Orders executed on I-TEX generate both an internal execution between the subsidiary and the Main Treasury and the external execution between the Main Treasury and counterparty banks (Street). The latter execution can be automatically mirrored in TRM (as a Main Treasury trade with the subsidiary) by using the Internal Deal Mirroring functionality (for more information about deal mirroring, see *8.5 Deal mirroring* on page 300).

The orders are limited to all or nothing orders at market price i.e. that the order execution is expected to be traded as one single execution of the whole quantity.

These order transactions are assigned dedicated system-defined package types: ORDER (single order executions) and MULTI-TRANSACTION (multiple trade executions). These package types are defined in the Package Type Editor: see *3.37 Package types (optional)* on page 147.

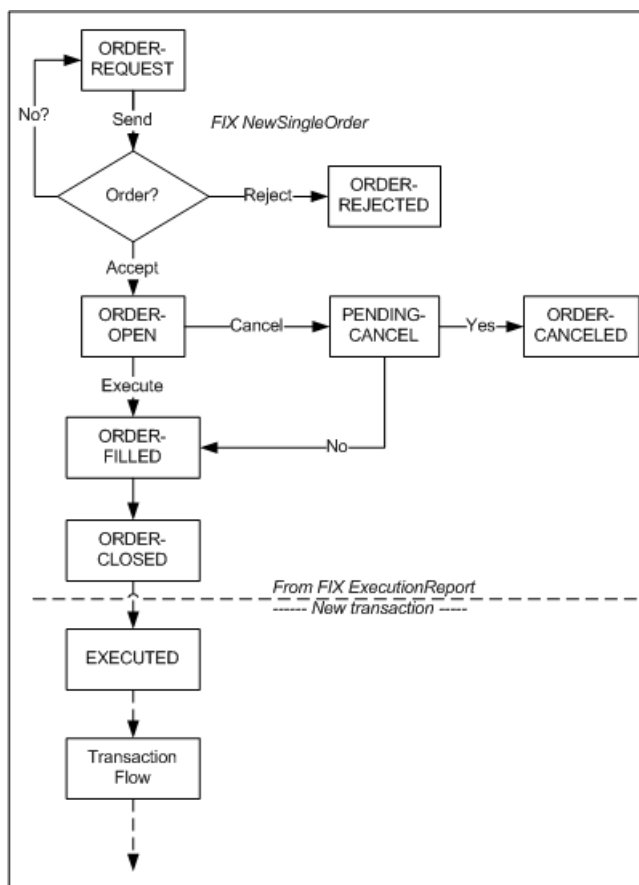
In order management, the term execution is used to designate the processing that is done in the external platform unless specified otherwise.

---

**Note:** In this version, the Financial Information eXchange (FIX) Protocol 4.4 is supported. This protocol is a messaging standard developed specifically for the real-time electronic exchange of securities transactions.

---

The order processing is handled using a similar flow to transactions except that it has specific states and commands as shown in the following diagram.



## 9.2 Setting up order management

Order platforms and routing rules are required to use Wallstreet Suite's order management functionality. Order routing and order platforms are defined respectively in Order Platform Editor and Order Routing Editor. You must first define the platform entities that you want to use in the routing rules.

At the instrument level, the instruments that you want to use in order management must be set up with the trading feature **FX Trading Platform**, and optionally, for FX Swap instruments, you can also set up the trading feature **FX Swap Split** to define the near / far leg to be used when splitting the two legs into separate FX transactions. For more information about these instruments, see *TRM Instruments: Processing and Calculations Guide*.

## 9.2.1 Defining an order platform

To define an order platform:

1. In the Order Platform Editor, enter the main attributes of the order platform using the following information:

Information	Description
ID Name	Enter the unique ID and name for the order platform.
Switches	<p>Switch on according to your needs as follows:</p> <ul style="list-style-type: none"> <li>• If you are defining an order management within Wallstreet Suite that does not require the sending of messages, select <b>Internal</b>.</li> <li>• If you do not want orders sent to this platform to be canceled, select <b>No Order Cancellation</b>. By default, this switch is ON for FXall trades.</li> </ul> <p>Note: In FXall order cancellation is not currently supported.</p> <ul style="list-style-type: none"> <li>• If you are using Intergroup Exchanges, select <b>Support for ITEX</b>.</li> </ul>

2. In the **Mapped Object** page, define how you want the various entities to be mapped in the external trading platform according to whether they are input (from the trading platform) or output (from Wallstreet Suite).

Information	Description
Entity	Select the entity you want to map. Choices are: <b>Client</b> , <b>Instrument</b> , <b>Portfolio</b> , <b>User</b> , and <b>InstrumentClass</b> .
When no input/output mapping found	<p>Define how you want to handle the values when no corresponding mapping is found:</p> <ul style="list-style-type: none"> <li>• <b>Keep Value</b> - keep the same value, i.e. do not map.</li> <li>• <b>Stop</b> - to stop the execution.</li> <li>• <b>Use default value</b> - enter the value you want to use by default in the default value field when mapping is found. In general, you would set an input default value for client, portfolio, instrument and user.</li> </ul> <p>Note: The output default value is mainly used for client specific developments.</p>
Input/Output Default Value	<p>If you select <b>Use default value</b> in the previous field, enter the default value you want to be used.</p> <p>Note: The output default value is mainly used for client specific developments.</p>

3. In **Data Mapping** page, define how you want the various entities to be mapped. By default, you have only to set up the mapping for incoming instruments (i.e. switch **In** is ON).

**Note:** Mappings for client, portfolio, user, and instrument class are not required but can be used for client specific developments, such as, to enrich the sending of the order (NewSingleOrder), in which case, the switch **Out** would be ON; or to enrich ExecutionReport, in which case, the switch **In** would be ON)

Information	Description
Entity	Select the entity you want to map. Choices are: <b>Client</b> , <b>Instrument</b> , <b>Portfolio</b> , <b>User</b> , and <b>InstrumentClass</b> .
Reference	ID of the client, portfolio, instrument, user, instrument class used in Wallstreet Suite.
External Reference	ID of the client, portfolio, instrument, user, instrument class used in the trading platform.

Information	Description
In Out	<ul style="list-style-type: none"> <li><b>In</b> - switch ON to map the references executed in the external platform and imported in to Wallstreet Suite.</li> <li><b>Out</b> - switch ON to map the references in the order (NewSingleOrder) sent from Wallstreet Suite to the external platform.</li> </ul>

4. In **Account** page, complete the account information as follows:

Information	Description
Account ID Name	Add the account ID and name that you want to use to book the trade as defined in the trading platform ( <b>Tag 1 Account</b> in FIX Protocol). The account is assigned to the legal trading entity on behalf of which the order is processed.
ITEX Account	Only switch ON when the order is processed on a 360T Intergroup Exchange platform.

5. Save the definition using **File - Save As New**.

## 9.2.2 Defining order routing rule

Order routing rules enable you to assign and route orders automatically to the specified platform using the relevant account.

To define an order routing rule:

1. In the Order Routing Editor, enter the main attributes in the upper part of the editor using the information in the following table:

Information	Description
ID Name	Unique ID and descriptive name for the routing rule.
Platform	Platform (defined in the Order Platform Editor) you want to use. See <i>9.2.1 Defining an order platform</i> on page 325. Note: Right-click and select <b>Edit entity...</b> to open the editor.
Priority	Priority of the rule. If the underlying event matches more than one rule, TRM uses the rule with the highest priority.
Rule Not Rule	Rule or Not Rule (defined in Rule Editor) that defines which orders are routed or not routed. You can modify the rules directly in the Rule Editor.
Account	Account defined in the order platform. For each platform that matches the rule, the account is assigned.

2. Save the routing rule using **File - Save As New**.

## 9.3 Order Managers

In TRM, there are three dedicated order manager boards: Order Admin, Order Capture, and Order Processing. These boards are based on Transaction Manager and have the same menus and configuration options, see *Chapter 8 Managing transactions* on page 257 for more information.

The following table describes each of these boards in more detail:

Board	Description
Order Admin	This board is similar to Transaction Admin in that it enables you to enter, query and perform actions on orders in all states.
Order Capture	This board is similar to Deal Capture except that a transaction entered in this board is potentially to be processed as an order. When the destination platform is blank, it shows deals in state ORDER-REQUEST and is handled as an internal order.  Furthermore, if you have set up an order routing rule (see 9.2.2 <i>Defining order routing rule</i> on page 326), the platform and account are automatically populated. Otherwise, you will have to enter the platform and account manually.
Order Processing	This board is used to process open orders. It shows order transactions in state ORDER-OPEN. You cannot enter new orders in this manager.

### 9.3.1 Views

This section describes the order-specific or related views (**View** menu) that are available in the order managers previously described. In addition to these views, there is also the **Transaction** view, which is always displayed. This view shows new and selected order transactions.

To show order-related information, make sure that **Order Package** and **Order Status** columns are visible. **Order Package** shows the package ID and **Order Status** shows the status of the order: **Filled** (after an execute), **Rejected** (after a reject), or **Pending New** (after an accept).

Information	Description
Order Execution	Displays the <b>Order Execution</b> view.  Shows execution information about the order transaction, including nominal amount, currency, opening date and time, transaction number and state, and so on.  You can monitor transactions in this view directly in the Execution Verification board, by right-clicking the order transaction and selecting <b>Execution Lookup</b> . See 9.5 <i>Monitoring orders</i> on page 329
Order Event	Displays the <b>Order Event</b> view.  Displays the log information of the selected order transaction, including date and time, ID, log, and order status. You can also use the Order Platform Log to check the messages and monitor the status of the orders. See 9.5 <i>Monitoring orders</i> on page 329.
Package	Displays the <b>Package</b> view.  ORDER (single order executions) and MULTI-TRANSACTION (multiple trade executions) are dedicated system-defined order package types that are defined in the Package Type Editor. You can select the following package types: <ul style="list-style-type: none"> <li>• SINGLE-ORDER: Assigned to all order transactions.</li> <li>• INTER-EXCHANGE: Assigned to multiple trade executions linked together (MULTI-TRANSACTION) and processed through 360T I-TEX.</li> <li>• FX-SWAP: For executions of FX swaps when splitting far and near legs into separate FX transactions. (For FX swap instruments defined with the feature <b>FX Swap Split</b>. See the <i>TRM Instruments: Processing and Calculations Guide</i>.)</li> </ul>

## 9.4 Processing orders

This section describes how to enter, execute and process orders in TRM.

## 9.4.1 Entering orders

To enter a new order :

1. In one of the Order Manager modes that enables you to enter a new order, select **New - Transaction** (or press **Ctrl+N**).
2. In the new row, enter the following information as well as basic FX transaction information:

Information	Description
Platform	Platform (defined in the Order Platform Editor) you want to use. For more information about defining order platforms, see <i>9.2.1 Defining an order platform</i> on page 325.
Portfolio	The portfolio you want to use.
Instrument	The instrument you want to use. Only instruments with the feature <b>FX Trading Platform</b> are displayed. If the instrument you want to use is not visible, check that it has the FX Trading Platform feature. For more information about this feature, see the <i>TRM Instruments: Processing and Calculations Guide</i> .
FX Base Amount	Amount of the FX transaction in the base currency.

3. When you have populated all required order information, apply and send the order to the platform. Sent orders are visible in Order Processing.

**Hint:** You can check the status of an order in the **Order Event** view.

## 9.4.2 Manually executing internal orders

It is sometimes necessary to manually execute internal orders (i.e. orders processed only in TRM).

To manually execute internal orders, in Order Admin or Order Processing, right-click the relevant internal order and select **Execute Order**. You can check the **Order Event** view or Order Platform Log for more information about the status of the execution: see *9.5 Monitoring orders* on page 329.

## 9.4.3 Overriding external order execution

In most cases, the orders are executed in the external platform. However, it may be necessary to override the platform execution and manually execute, accept or reject the orders in TRM, for example, when the orders are pending and cannot be executed by the external platform. You can only override orders that have an order status of **Pending New**.

To override external orders (i.e. orders processed through external platforms, such as, 360T, FXAll):

1. In Order Admin, right-click the relevant pending order (status **Pending New**) and select one of the following actions according to your needs:
  - **Execute Order (override platform):** The order status is set to **Filled**.
  - **Reject Order (override platform):** The order status is set to **Rejected**.
  - **Accept Order (override platform):** The order status is set to **New**. The order can be executed or rejected.
2. Check the **Order Event** view or Order Platform Log for information about the status of the execution: see *9.5 Monitoring orders* on page 329.



## 9.5 Monitoring orders

You can monitor the orders in either of the following places:

Application	Description
Execution Verification	Enables you to show the order transactions in state EXECUTED and to confirm the execution and move them to the state VERIFY.
Order Platform Log	Enables you to check messages and monitor the status of the orders.
Exception Verification	<p>Enables you to retrieve order transactions in state EXCEPTION only. Order transactions can be flagged as exceptions by setting up transaction conditions. For more information about transaction conditions, see <i>Chapter 17 Managing transaction conditions</i> on page 485.</p> <p>You can either accept them and they are returned to the regular flow or reject them and they are set to state <b>Re-Open</b>.</p>



Funds provide investors with the possibility to invest collectively in a wide range of investments which would not be possible for most individual investors. Furthermore, funds enable investors to share the related fund fees. Funds include investment, managed, mutual, and hedge funds. A fund's valuation is based on the Net Asset Value (NAV) per fund share unit, that is to say, the asset value minus the fees, divided by the outstanding fund share units. The fund management company usually determines the NAV per unit on every business day, and makes it available to all investors via a publication in a daily newspaper and/or website.

TRM enables you to:

- Set up a dedicated fund portfolio to generate and consolidate all fund-related transactions.
- Issue fund shares to counterparties and buy back fund shares.
- Enter and query fund fees such as shareholder transaction costs, investment advisory fees, and marketing and distribution expenses.
- Calculate, monitor and publish the net asset value of the fund unit.

## 10.1 Setting up fund portfolios

To create a fund portfolio you first need to define the following entities:

- A fund owner. The fund owner (the fund manager) is defined in Client Editor (see *3.13.1 Creating clients* on page 90 for information). The fund owner must have the following roles: **Portfolio Owner, Counterparty, Issuer, Account Holder**. In the **Accounts** and **Settlement Instructions** pages, the fund owner must have cash (including bank balances) and custody accounts and instructions.
- Fund share and fund fee instruments. You can define fund share instruments for capitalization and distribution shares in different currencies. You can define fund fee instruments for the different fees such as management fees and incentive fees. Instruments are defined in Instrument Editor. Instrument setup is described in *TRM Instruments: Processing and Calculations Guide*.
- The default net asset value calculation. This is done in NAV Calculation Setup Editor, see *10.3 Setting up default NAV calculation values* on page 334 for more information.

### 10.1.1 Creating fund portfolios

A fund portfolio is used to generate and consolidate all fund-related transactions (fund investment, fund fee, and outstanding fund share unit transactions).

Furthermore, a fund portfolio may have underlying trading portfolios which invest in specific asset classes (for example, cash, equity, fixed income etc.).

To create a fund portfolio:

1. In Portfolio Editor, create the portfolio as described in *3.14.1 Creating portfolios* on page 108.

---

**Note:** If you want to monitor/group a set of funds, you can create a top portfolio and set your funds as subportfolios in order to create a fund hierarchy.

---

2. In the main page, define the **Owner** and the **Base Currency**.

Information	Description
Owner	The fund management company.
Base Currency	The default currency of the fund.

3. In the **Switches** page, turn on the switch **Fund**.

4. The **Fund Fees** page is used to define the fee setup. You need to enter the following information:

Information	Description
Priority (optional)	The <b>Priority</b> is used if the fees depend on other fees. <b>Note:</b> For example, an Incentive Fee may be paid based on Net Assets minus Management Fee 1%. In this case, Management Fee 1% has an Order Number = 1, and Incentive Fee an Order Number = 2.
Fee Instrument (mandatory)	ID of the fund fee instrument defined in Instrument Editor. For information on the fund fee instrument see <i>TRM Instruments: Processing and Calculations Guide</i> .
Charging Basis (mandatory)	<b>Net Assets</b> (default): The basis for the calculation of the fee is today's market value of the net assets. Formula: $(\text{market\_value} - \text{market\_value\_exclude} - \text{\_total\_accrued\_fees}) * \text{percentage}/100 * \text{\_fraction\_of\_year}$ By default the calculation of the fees excludes the market value of the instruments which have the fund management company itself (i.e. the owner of the fund) as an issuer. <b>Net Assets (T-1)</b> : The basis for the calculation of the fee is the previous day's market value of the net assets. Formula: $(\text{market\_value\_previous} - \text{market\_value\_exclude\_previous} - \text{\_total\_accrued\_fees}) * \text{percentage}/100 * \text{\_fraction\_of\_year}$ <b>Investment Return</b> : The basis for the calculation of the fee is today's market value of the net assets relative to the original investment. Formula: $(\text{market\_value} - \text{market\_value\_exclude} - \text{\_original\_investment\_total\_accrued\_fees}) * \text{percentage}/100 * \text{\_fraction\_of\_year}$ <b>Original Investment</b> : The basis for the calculation of the fee is the original investment. Formula: $\text{\_original\_investment} * \text{percentage}/100 * \text{\_fraction\_of\_year}$ <b>Customized</b> (available if you have set up a new charging basis fee in the Fund Fee Module): The basis for the calculation of the fee is customized by a CSD using the Fund Fee Module settings.

5. In the **Fund Shares** page, assign the different fund share instruments:

Information	Description
Fund Instrument	ID of the fund share instrument defined in Instrument Editor. For information on the fund fee instrument see <i>TRM Instruments: Processing and Calculations Guide</i> .
Scaling Factor	Any number (typically slightly > 1) determining the price difference between non-dividend-paying and dividend-paying shares in the fund. This is a multiplier; the NAV per unit displayed in Rate Monitor being NAV x NAV scaling factor. If the scaling factor is left empty, it defaults to 1. For example, <ul style="list-style-type: none"> <li>If Fund Share Instrument A is a capitalized share and the dividend reinvestment = 5%, the scaling factor is: 1,05</li> <li>If Fund Share Instrument B is an income share, the scaling factor is: 1</li> </ul>

6. In the **NAV Calculation Setup** page, specify the following information:

Information	Description
NAV Calculation Setup	ID of the NAV calculation setup defined in NAV Calculation Setup Editor. See <i>10.3 Setting up default NAV calculation values</i> on page 334 for more information.

7. In the **Properties** page, add the following properties and values:

Property	Value	Description
EXCLUDE-GROUP-ID	OWN-ISSUE	This property is used during the calculation of fees to exclude the market value of the instruments which have an issuer in the specified issuer group. The purpose is to prevent shareholders from paying "double" fund management fees on their fund shares.
ORIGINAL-INVEST	Money	This property is used during the calculation of fees to calculate the fee based on the original investment amount.

8. Save the portfolio definition using **File - Save**.

## 10.2 Fund Managers

In TRM, there are two managers that are used for managing fund shares and fund fees: Fund Share Manager and Fund Fee Manager. These managers are based on Transaction Manager and have the same menus and configuration options, (see *8.1 Transaction Manager* on page 257 for more information).

### 10.2.1 Managing fund shares

You use Fund Share Manager to issue fund shares to counterparties and buy back fund shares from counterparties. Different fund share instruments can be set up so that you can issue capitalization or distribution shares in different currencies (see *TRM Instruments: Processing and Calculations Guide* for more information). To issue a fund share you create a new transaction. See *8.2.1 Entering new deals in Transaction Manager* on page 264 for more information on creating transactions.

---

**Note:** In the Fund Share Manager you issue and buy back fund shares by entering a transaction and then setting the **Transaction Sign** to either **Sell** or **Buy** respectively.

---

### 10.2.2 Managing fund fees

#### 10.2.2.1 Entering fund fees

In Fund Fee Manager you can query the various fees that are associated with the fund such as fund management fees, brokers fees and custody fees.

Fund management fee transactions are generated by:

- The activity Fund Data Calculation/Reporting when you set the report **Status** to **Published**. You can schedule to run the activity as often as required (for example, nightly). See *10.5.2 Automating NAV reporting* on page 342 for more information.
- NAV Report Manager when you manually set the NAV report to **Published**. See *10.5.1.2 Publishing a report* on page 342 for more information.

Other fees (brokers fees, custody fees or other one-off fees) can be manually entered in Fund Fee Manager by selecting **New - Transaction**. See *8.2.1 Entering new deals in Transaction Manager* on page 264 for more information on creating transactions.

### 10.2.2.2 Realizing fund fees

You can realize the accrued fund fee both manually and automatically (for manual realization, see *TRM Instruments: Processing and Calculations Guide*).

You can automate the payment of fund fees by setting up the Fund Fee Realizing activity. This activity creates a payment transaction for the fees that have accrued since the previous payment. Only NAV fees in the state **Final** and with NAV status **Published** can be realized.

To automate the payment of fund fees, you need to ensure that the following have been done:

- The Fund Data Calculation/Reporting activity has run and generated accrued fund fees. The accrued fund fee transaction updates the realization date based on the realization frequency defined in the **Fund Fee Realization** page of Instrument Editor.
- The realization frequency has been defined in the **Fund Fee Realization** page of Instrument Editor. If this is not defined, the realization will take place on demand according to the activity's due date.

To set up the Fund Fee Realizing activity:

1. In Activity Manager, create a new activity using activity type Fund Fee Realization.
2. Select group **NIGHTLY**.
3. Enter the necessary parameters. See *A.38 Fund Fee Realizing* on page 643 for more information.

You can create an Undo Realize Fund Fee activity using the activity type Fund Fee Realization. You need to set the **Mode** in the **Parameters** page to **Undo Realize**. You use the Undo Realize Fund Fee activity to:

- Remove all the paid flags on the accrued fund fee cashflows
- Remove the generated fund fee, and principal cashflows.

## 10.3 Setting up default NAV calculation values

The net asset value of the fund is the cumulative market value of an entity's assets less the value of its liabilities. The net asset value per unit, which is the price per fund unit, is calculated simply by dividing the net asset value by the number of units.

The net asset value per unit is calculated based on a NAV scenario of market rates used to calculate the assets' market value. Furthermore, a minimum transaction state and a cut-off time identify the fund portfolio transactions that must be included in the NAV calculation. In NAV Calculation Setup Editor you specify the minimum transaction state, the cut-off times/time zone and rate scenarios. For example, you can specify that the published NAV will include all the transactions that are in **State Final**, that have been included before the cut-off time of 5pm CET, and that the transactions will be valued using a default scenario (i.e. market closing rates).

---

**Note:** In Scenario Editor, you can define multiple rate scenarios for the rates used in the valuation of the fund's assets and fees (for example a Market Price scenario, a Fair Value Scenario). You can also create scenarios for storing the NAV output. See *4.2.1 Defining scenarios* on page 166 for more information on how to create scenarios.

---

You attach the calculation setup that you define in NAV Calculation Setup Editor to the fund portfolio (see *10.1 Setting up fund portfolios* on page 331 for more information). This setup is displayed when you start up NAV Monitor (in the **Initialize NAV Monitor** dialog). See *10.4.2 Monitoring net asset value in NAV Monitor* on page 336 for more information.

To define default calculation values in NAV Calculation Setup Editor:

1. Use the following information to define the NAV calculation setup:

Information	Description
ID	Unique ID of the net asset value calculation.
Name	Name of the net asset value calculation.
Active From	Date from which the NAV Calculation Setup applies. If left empty, it will apply to all dates.
Active To	Date until which the NAV Calculation Setup applies. If left empty, it will apply to all dates.
Domain	Domain in which the net asset value calculation is available.

2. Enter the following information in the **NAV Calculation Setup** page:

Information	Description
Transaction State	Minimum state that the transactions must have reached in order to be included in the analysis.
Time Zone	ID defined in the Time Zone Editor and used to set the cut-off time zone.
Cutoff Time	Time, up until which, transactions are included in the NAV calculation.
Rate Scenario	The scenario of the market rates in which the fund's assets and fees are calculated.

3. Save the NAV calculation setup using **File - Save**.

## 10.4 NAV Monitor

In TRM, you can monitor the net asset value in real-time using NAV Monitor. You can view results both as figures in a grid, and as various charts. NAV Monitor is based on Treasury Monitor, with the same menus and configuration options (see *12.1 Treasury Monitor* on page 361 for more information). In NAV Monitor you can group and display all NAV-related data as well as key-figures, and you can save the calculated NAV data for NAV Report.

### 10.4.1 Configuring NAV Monitor

You can configure NAV Monitor by creating pages or groups of pages in books, by selecting the rows and columns you want to be displayed in each page, and by selecting the values or key-figures to monitor. See *12.1.3 Configuring Treasury Monitor* on page 365 for more information.

You insert a new page using **Page - New Grid Page** or **Page - New Chart Page** and then selecting one of the four types of page that are available:

---

**Note:** You can change the page name by double-clicking on the page name and entering a new name in the **Set Page Name** dialog.

---

Information	Description
Position Page	Relates to one fund and is only active if one of the funds in the navigation bar is selected.
Total Page	Displays the totals for each fund. The rows are fixed at one per fund.

Information	Description
Fund Info Page	Relates to one fund and is only active if one of the funds in the navigation bar is highlighted. It displays the fund instruments attached to the highlighted fund. This page also has fixed rows, one per fund instrument.
Fund Fee Page	Relates to one fund and is only active if one of the funds in the navigation bar is selected. The management fees are an integral part of the NAV calculation.  The fund management fees are defined in Portfolio Editor and are calculated for display purposes in NAV Monitor. The calculation is done in real-time and therefore is updated when the fund's market value changes. This page displays the fixed and relative management fees for each fund. The rows adjust to the number of management fees.

#### 10.4.1.1 Setting a warning deviation

You can use the **NAV Warning Deviation** function in the **Total Page** to highlight the funds that have a large change in the net asset value.

To set a NAV warning deviation:

1. In the **Total Page**, right-click in the grid and select **NAV Warning Deviation**. The **Set NAV Warning Deviation %** dialog is displayed.
2. Set the warning deviation. This is based on the formula  $Abs(NAV\ Change\ in\ \%) > k$ , where the parameter  $k$  is 10.00% by default. This warning deviation is saved with a book definition.

#### 10.4.1.2 Setting a quoted instrument deviation

You can use the **Quoted Instrument Warning Deviation** function in the **Position Page** to highlight the funds that have a large change in the quote.

To set a quoted instrument warning deviation:

1. In the **Position Page**, right-click in the grid and select **Quoted Instrument Warning Deviation**. The **Set Quoted Instrument Warning Deviation %** dialog is displayed.
2. Set the warning deviation. This is based on the formula  $Quote\ (relative\ Change\ in\ \%) > k$ , where the parameter  $k$  is 10.00% by default. This warning deviation is saved with a book definition.

### 10.4.2 Monitoring net asset value in NAV Monitor

#### 10.4.2.1 Defining NAV parameters

To define net asset value parameters:

1. Start NAV Monitor or, if the NAV Monitor is already open, select **File - Change Parameters** to open the **Initialize NAV Monitor** dialog.
2. If you want to select a position you have previously saved, enter the following information and click OK:

Information	Description
Position	The position you want to monitor by selecting one of the views available in the selection list. This field is available if you have launched NAV Monitor in pre-configured mode.  <b>Note:</b> You can save all the start-up parameters (including your preferred book) except for <b>NAV Date</b> and <b>Previous Report Date</b> , which are dynamic entries.
Book (optional)	The book you want to monitor. This book is saved for the next time.



**3.** In the **Selection** page, enter the parameters you want to monitor:

**Note:** You can define certain parameters at fund level in NAV Calculation Setup Editor. See *10.3 Setting up default NAV calculation values* on page 334 for more information.

Information	Description
Portfolio (mandatory)	ID of the relevant top fund or individual fund. By default, when you enter the portfolio, certain parameters are inherited from the NAV calculation setup defined for the fund: ( <b>Transaction State</b> , <b>Cut-Off Time Zone</b> , <b>Cut-Off Time</b> , <b>Rate Scenario</b> , <b>NAV Output Scenario</b> ). See <i>10.3 Setting up default NAV calculation values</i> on page 334 for more information).
Transaction State (mandatory)	Minimum state that the fund assets and fee transactions must have reached in order to be included in the analysis. <b>Note:</b> By default, the <b>Transaction State</b> is retrieved from the NAV calculation setup defined for the fund. However, the <b>Transaction State</b> can be manually overwritten.
NAV Date (mandatory)	The date of the net asset value. <b>Note:</b> The default value is today's date.
Previous Report Status (mandatory)	In the course of one day, there may be several reports. You therefore need to set the status of the previous report. <b>Note:</b> The default value is <b>Published</b> .
Previous Report Date (mandatory)	Used if you want to compare the current NAV with a previous report. This date corresponds to the <b>NAV Date</b> of the previous report. <b>Note:</b> The default value is today's date - 1.
Time Zone (mandatory)	Time zone as defined in the Time Zone Editor.
Cut-Off Time (mandatory)	Time, up until which, transactions are included in the analysis. <b>Note:</b> By default the <b>Cut-Off Time</b> is retrieved from the NAV calculation setup defined for the fund. However, the <b>Cut-Off Time</b> can be manually overwritten.
Figure Currency (mandatory)	The currency in which you want the results to be displayed. <b>Note:</b> By default the currency of the fund defined in Portfolio Editor. This value can be overwritten.
Rate Scenario (mandatory)	The Market Information scenario in which the fund's assets and fees are calculated. <b>Note:</b> By default the <b>Rate Scenario</b> is retrieved from the NAV calculation setup defined for the fund. However, the <b>Rate Scenario</b> can be manually overwritten.
Result Context	Accounting standard for which you want to define the scenario.
State Context	Value specifying whether certain transaction types are to be included in the position: <ul style="list-style-type: none"> <li>• Default - no cost-of-carry or collateral transactions.</li> <li>• w/Cost-of-Carry - cost-of-carry transactions.</li> <li>• w/Collateral - collateral transactions. These transactions are generated from repo transactions.</li> <li>• w/Cost-of-Carry/Collateral - both cost-of-carry and collateral transactions.</li> <li>• w/Cost-of-Carry/Order - both cost-of-carry and order transactions.</li> <li>• w/Order - order transactions.</li> </ul> <b>Note:</b> w/Cost-of-Carry can only be selected for portfolios which have the Cost-of-Carry switch turned on: see <i>12.1.7 Monitoring cost-of-carry positions</i> on page 390 for more information.

Information	Description
Update in Real-Time	Switched on by default. If you do not want to update the analysis in real-time, turn off the <b>Update in Real Time</b> switch.  As TRM calculates all transaction-related cashflows that are active for the selected period and portfolio, you may wish to turn off the switch for large portfolio structures. You can revert to real-time mode by selecting <b>Update - Realtime</b> .

4. Save the position parameters you have defined in the **Saving** page and then click OK:

Information	Description
Position Name	Name of the position.
Position Owner	User or user group that can modify the position.
Position User	User or user group that can use the position.
Save /Delete button	Save/delete the position you have defined in the <b>Saving</b> page.

#### 10.4.2.2 Selecting key figures

The following tables explain the key figures that are specific to NAV data. All the key figures show results for the period you defined in the **Initialize NAV Monitor** dialog.

---

**Note:** To open the list of key-figures, select **View - Select Key Figures** or right-click the column header and select **Select Key Figures**.

---

##### 10.4.2.2.1 Position Page

The **Position Page** has the same key-figures as the Treasury Monitor. See *12.1.4.7 Selecting key-figures* on page 379 for more information.

##### 10.4.2.2.2 Total Page

The **Total Page** has the following key-figures:

#### Valuation

Key Figure	Description
Market Value (Normal)	The market value.
Market Value (Change)	The change in the market value. This is calculated from the last selected report. (Market Value - Previous Market Value).
Market Value (Relative Change)	The relative change in market value, expressed as a percentage. This is calculated from the last selected report. $((\text{Market Value} - \text{Previous Market Value}) / \text{Previous Market Value}) * 100$ .
Accrued Interest (Normal)	The accrued interest.
Accrued Interest (Change)	The change in the accrued interest. This is calculated from the last selected report (Accrued Interest - Previous Accrued Interest).
Accrued Interest (Relative Change)	The relative change in accrued interest, expressed as a percentage. This is calculated from the last selected report. $(\text{Accrued Interest} - \text{Previous Accrued Interest}) / \text{Previous Accrued Interest} * 100$ .

### Previous Report

Key Figure	Description
Previous Report Id	ID of the previous report.
Previous Report Owner	User who has validated the previous report.
Previous Report Time	Time of creation of the previous report.
Previous Report Date	Previous NAV report date.
Previous NAV	Net asset value of the previous report.
Previous Report Status	Status of the previous report.

### Net Asset Value

Key Figure	Description
NAV	The net asset value. (Market Value + Total Accrued Fees)/Fund Shares.
NAV Change	The change in the net asset value. This is calculated from the last selected report. (NAV - Previous NAV).
NAV Change in %	The relative change in the net asset value, expressed as a percentage. This is calculated from the last selected report. (NAV Change/Previous NAV) * 100.

### Fund

Key Figure	Description
Fund Shares	From the fund units entered in the fund portfolio (sum of outstanding units of the fund shares generated in the fund) $\Sigma$ (scaling factor*units).

#### 10.4.2.2.3 Fund Info Page

The **Fund Info Page** has the following key-figures:

#### Previous Report

Key Figure	Description
Previous NAV per Unit	Net asset value of the fund share at a previous date.
Previous Report Date (Normal)	Previous net asset value report date.

#### Fund Instrument

Key Figure	Description
Units	Outstanding shares. Units of the fund share in the fund portfolio.
NAV Scaling Factor	Net asset value scaling factor.
FX Rate	FX sport rate to convert the currency into the currency set in NAV Monitor.
Price	Price of the fund share (from rate scenario).

### Net Asset Value

Key Figure	Description
NAV per Unit (Normal)	The net asset value per unit (NAV (Fund)) * NAV scaling factor.
NAV per Unit (Change)	The change in the net asset value per unit. This is calculated from the last selected report. NAV per unit - NAV per unit in the previous report.
NAV per Unit (Relative Change)	The relative change in the net asset value per unit, expressed as a percentage. This is calculated from the last selected report. (NAV Change/ NAV in the previous report) * 100.

#### 10.4.2.2.4 Fee Info Page

The **Fee Info Page** has the following key-figures:

#### Valuation

Key Figure	Description
Market Value (Normal)	The market value.
Market Value (Change)	The change in the market value. This is calculated from the last selected report (Market Value - Previous Market Value).
Market Value (Relative Change)	The relative change in market value, expressed as a percentage. This is calculated from the last selected report $((\text{Market Value} - \text{Previous Market Value}) / \text{Previous Market Value}) * 100$ .
Market Value Exclude (Normal)	Market value of the instruments that belong to the Exclude Issuer group set up on a portfolio.
Fund Management Fee (Normal)	Fixed fee or relative management fee set.
Fund Management Fees (Change)	The change in the fund fee. This is calculated from the last selected report (Fund Management Fee - Previous Fund Management Fee).
Fund Management Fees (Relative Change)	The relative change in the fund fee, expressed as a percentage. This is calculated from the last selected report (Fund Management Fee Change/Previous Fund Management Fee)*100.
Fee Percent (Normal)	The management fee percentage.
Accrued Fund Management Fees (Normal)	Accrued Fund Management Fee + Fund Management Fee Amount from the last published report.

#### Previous Report

Key Figure	Description
Previous Fund Management Fees	The fund management fee loaded from the selected previous report.
Previous Report Date	The date of the previous NAV report.

### 10.4.3 Saving NAV reports

To save the net asset value as a report:

1. In NAV Monitor, switch to report mode by selecting **Report - Report**. The following report menu options are available:

Information	Description
Report	Switch to show or not the report. Only enabled if a fund is selected in the list.
Save Report	Enabled if a report is open and a fund is selected in the list.
Save All Reports	Enabled if a report is open.
Reset	Enabled if a report is open and has been modified manually.
Open Report Manager	Opens NAV Report Manager.

2. Select **Save Report**.
3. Add a **Comment** in the **Save Report** dialog. You can see this comment in NAV Report Manager.
4. You can view the report in NAV Report Manager by selecting **Report - Open Report Manager**.

## 10.5 NAV Report Manager

NAV Report Manager enables you to view all saved NAV reports and to publish one NAV report per day. NAV reports are created and saved in NAV Monitor (see *10.4 NAV Monitor* on page 335 for more information).

NAV Report Manager can be started from Application Manager or from NAV Monitor (from the **Report** menu).

The available report columns are:

Information	Description
Comment	User comment as defined in NAV Monitor or the Fund Data Calculation/Reporting activity. You can modify the comment. In order to store your modifications in the database, you need to click <b>Apply</b> .
ID	ID of the NAV report.
Owner	User who has saved the report.
Time	Time of the NAV report (including Time Zone ID).
Date	Date of the NAV report.
Fund Portfolio	ID of the fund portfolio.
NAV	Net asset value.
State	State of the report (for example <b>Open</b> ).
Status	Status of the report (for example <b>Published</b> , or <b>End of Day</b> (if you do not want to publish the report)).

### 10.5.1 Managing reports

In NAV Report Manager you can:

- Query for reports by selecting **View - Query**.
- Run a report by right-clicking on the report and selecting **Run Report**.

- Save report data for different scenarios using the **Save NAV** command.
- Publish one report per day using the **Set Published** command.

---

**Note:** Reports have a state, and you can only save a report or change a report's status when the report is in **State Final**.

---

### 10.5.1.1 Saving a report scenario

To save a report for a specific scenario:

1. Select the report you want to save.
2. Select the menu **Command - Save NAV**. Enter the scenario in the dialog.

Information	Description
NAV	Net asset value (read only).
Scenario	NAV scenario.

The report will be saved.

---

**Note:** Each time you save a report for a specific scenario, you overwrite the previous report.

---

### 10.5.1.2 Publishing a report

To publish a report:

1. Select the report you want to publish.
2. Select the menu **Command - Set Publish**. The report **Status** will change to **Published**.

---

**Note:** You can unpublish a report by selecting the menu **Command - Clear Published**.

---

3. When a report is in the **Final** state and **Published** status, the system automatically generates a transaction for the fund fee. The transaction can be viewed in the Fund Fee Manager.

---

**Note:** If a report which is in the **Final** state has a Status of **Unpublished**, the system deletes the generated fee transactions.

---

## 10.5.2 Automating NAV reporting

You can use the Fund Data Calculation/Reporting activity to automatically save the fund report and set it to the required state and status. This activity simulates the behavior of NAV Monitor and NAV Report Manager. For information about activities, see 6.2.1.2 *Defining activity intervals* on page 231.

To set up the Fund Data Calculation/Reporting activity:

1. In Activity Manager, create a new activity using activity type Fund Data Calculation/Reporting.
2. Select group **NIGHTLY**.
3. Enter the necessary parameters. See A.37 *Fund Data Calculation/Reporting* on page 641 for more information.
4. Click **Save As** to save the whole activity definition.

---

**Note:** Fund Management fee transaction(s) and NAV published price(s) can only be created for a report in the **Final** state and with the status **Published**.

---







In principle, most money market and foreign exchange operations can be collateralized. Collateralization is a means to reduce or offset the risk borne by one party against another party in a transaction. The collateral is an asset which is transferred from one to the other to cover the risk in case of default.

## 11.1 Setting up master agreements

Collateral is governed by a master agreement agreed between two parties that set forth the terms applicable to the transfer of collateral and the respective obligations of the transferor and transferee.

Master agreements can set the same terms for all counterparties or they can be counterparty-specific, with specific terms (for example, haircut and valuation currency) varying from one counterparty to another.

Different operations can be governed by different master agreements with different terms with the same counterparty. For example, the terms applicable to a repo/reverse repo will be different to those applicable to commercial loans.

All collateralized transactions (including all transactions in which collateral is delivered) are linked to a collateral agreement.

### 11.1.1 Defining collateral agreements

A collateral agreement set up in TRM defines the important terms of an agreement, for example, margin conditions, substitution, instruments involved, and collateral monitoring rules.

The agreement establishes a link between the main terms of exposure and collateralization, namely details of the haircut (cover haircut and collateral haircut).

The following formula is used to calculate asset exposure covered by collateral:

$$\text{Exposure of asset} * (1 + \text{cover haircut}) = \text{MV of collateral} * (1 - H_{\text{FX}} - H_1 * F_1 - H_2 * F_2 - H_3 * F_3)$$

where:

$H_{\text{FX}}$  = FX haircut,  $H_1, 2, 3$  = collateral haircuts, and  $F_1, 2, 3$  = collateral haircut factors

Collateral agreements are defined in Collateral Agreement Editor. This editor layout is based on the application Static Data Editor (see 3.2 *Static Data Editor* on page 41 for more information).

---

**Note:** Some of the terms which make up the master agreement need to be defined as separate entities in TRM: see 11.1.1.1 *Defining the components of collateral agreements* on page 348.

---

To set up a collateral agreement:

1. In Collateral Agreement Editor, enter the main attributes of the master agreement in the upper part of the editor.

Information	Description
ID & Name	Unique ID and name for the collateral agreement.
Domain	Domain in which this collateral agreement applies.
Requirement Method	Method used to calculate the value to be collateralized. Choose from: <ul style="list-style-type: none"> <li>• Accrued Value (book value + accrued interest)</li> <li>• Book Value</li> <li>• Market Value</li> <li>• Nominal Amount</li> <li>• Repayment Amount (total amount of all repayment cashflows)</li> </ul>
Currency	Valuation currency of the collateral agreement.
Cover Haircut Set	Cover Haircut Set is used to determine which value is automatically assigned to field cover haircut of a guarantee entry in a collateralized transaction. The value is a percentage (i.e. 2.00 for 2%) used to adjust up value to cover (normally book value) when calculating collateral requirement of a transaction. Using the previous example of a 2.00 cover haircut would mean that collateral requirement of a transaction with book value of 100 would be 102.  Cover haircut sets are defined in Cover Haircut Editor: see <i>11.1.1.1.1 Defining cover haircut sets</i> on page 348.
Collateral Valuation Set	Collateral valuation set used to specify the conditions of collateral valuation, including the collateral haircuts used to adjust the market value of the collateral down based on its quality.  Collateral valuation sets are defined in Collateral Valuation Editor: see <i>11.1.1.1.4 Defining collateral valuation sets</i> on page 351.
Counterparty	This field is used in collateral management of commercial loans to restrict the use of a Collateral Agreement to a single counterparty or guarantor. In the case of collateral management of repo operations, the same is achieved via the <b>Covered Clients</b> page described in the next step.  Leave empty if the agreement can be used by any counterparty or guarantor in commercial loans.
Signature Date	Signature Date of Collateral Agreement.
Active From Date Active To Date	Period within which the Collateral Agreement is valid.
Cover All Clients	Switch on to indicate that the agreement is eligible for all clients.  Note: When this switch is on, the <b>Covered Clients</b> page is disabled.
Display Only Eligible	Switch on to display only eligible collaterals in Transaction Manager. An eligible collateral is a collateral that is defined as acceptable security under the collateral agreement of the repo. Conditions for eligible collaterals are defined in the Collateral Haircut Editor through the <b>Ineligible</b> field. See <i>11.1.1.1.3 Defining collateral haircut sets</i> on page 350.

2. In Collateral Agreement Editor's **Covered Clients** page, define the specific client to which this master agreement applies:
  - For commercial loans: A covered client refers to the client whose exposure is secured by the collateral, not to the owner of collateral. If a guarantor of a loan also provides collateral as additional security, this guarantor is the owner of collateral and also the counterparty in the collateral agreement, whereas the counterparty of the loan transaction whose exposure is secured by the collateral is a covered client in the collateral agreement.

- For repo operations: It is always assumed that the collateral is provided by the counterparty of the repo and counterparty definition in collateral agreement is not used at all. Instead, if the eligibility of a collateral agreement is restricted to one or several specific counterparties, they must be identified in the **Covered Clients** page of Collateral Agreement Editor.
3. In Collateral Agreement Editor's **Substitution** page, specify the method and instrument to be used for collateral substitution under the master agreement.

Information	Description
Collateral Substitution Method	Method used to calculate the amount of new collateral delivered against the substituted collateral under this agreement. Choose from: <ul style="list-style-type: none"> <li>• <b>Current Collateral Value:</b> The new collateral must have the same market value on the substitution date as the collateral to be returned.</li> <li>• <b>Original Collateral Value:</b> On the substitution date, the new collateral must be worth as much as the collateral to be returned was worth when the transaction was arranged.</li> </ul>
Substitution Instrument	Instrument used in collateral substitution. Collateral substitution instruments are described in the guide <i>TRM Instruments: Processing and Calculations</i> .

---

**Note:** If this setup is not defined in the Collateral Agreement, collateral substitutions cannot be made in any transactions under it.

---

4. In Collateral Agreement Editor's **Margin** page, specify the conditions for margin management under the master agreement.

Information	Description
Margin Instrument	Instrument used in margin transactions. If you do not specify a margin instrument you will not be able to make margin transactions in this agreement. Margin instruments are described in the guide <i>TRM Instruments: Processing and Calculations</i> guide.
Minimum Movement Value	Minimum acceptable value of collateral being transferred under this agreement.
Margin Trigger Type	Method used to calculate Cover % validated against Margin Trigger % (Call) and Margin Trigger % (Return) to trigger a margin call or margin return for a collateral position in Collateral Valuation Board under this agreement. Choose from: <ul style="list-style-type: none"> <li>• <b>Requirement Cover %:</b> The cover % is calculated as the percentage of Cover Value (of collateral) over Requirement Value (of underlying exposure) where requirement value is the exposure adjusted with cover haircut</li> <li>• <b>Value Cover %:</b> The cover % is calculated as the percentage of Cover Value (of collateral) over Value to Cover (of underlying exposure) where value to cover is the unadjusted exposure</li> </ul> For example, with a cover haircut of 2.00%, Requirement Cover % produces initial Cover % of 100% and Value Cover % initial Cover % of 102%
Margin Trigger % (Call)	Cover % that will trigger a margin call for a collateral position in the agreement in Collateral Valuation Board.
Margin Trigger % (Return)	Cover % that will trigger a margin return for a collateral position in the agreement in Collateral Valuation Board

5. Save the collateral agreement definition using **File – Save As New**.

### 11.1.1.1 Defining the components of collateral agreements

The following entities can be set up separately and grouped together under a collateral agreement to define a master agreement:

- Cover haircut set: Defines the rules that determine the cover haircut by which the underlying exposure is adjusted when calculating the cover requirement according to the parameters of the collateralized transaction.
- Collateral valuation set: Groups together collateral haircuts and collateral FX haircuts, as well as some additional valuation conditions:
  - FX haircut set to define the rules to determine which haircut applies between currencies (that is, the asset currency and the collateral currency) in collateral operations
  - Collateral haircut sets to define the rules to determine the collateral haircuts by which the market value of the collateral is adjusted when calculating the cover value according to the instrument, ratings, and other related parameters of the collateral instrument.

Use the following sections to define the individual components that make up the master agreement.

---

**Note:** All editor layouts used to set up the component entities of collateral agreements are based on the application Static Data Editor (see 3.2 *Static Data Editor* on page 41 for more information). Collateral-related entities are created in the same way as other types of static data entities: see 3.3.1 *Creating new static data entities* on page 45.

---

#### 11.1.1.1.1 Defining cover haircut sets

Cover haircut is used to adjust the exposure of a collateralized transaction up when calculating its cover requirement. The haircut is not assigned to the transaction directly but to a guarantee entry of the transaction. Repo transactions always have a single guarantee entry, but commercial loans may have any number of them. Each guarantee entry is linked to a collateral agreement and a haircut is assigned to it based on the cover haircut definitions of the agreement.

To define a cover haircut set to identify the rules for assigning the cover haircut to the collateralized transactions according to the transaction parameters:

1. In Cover Haircut Editor, enter the main attributes of the cover haircut set in the upper part of the editor.

Information	Description
ID & Name	Unique ID and name for the cover haircut set.
Domain	Domain in which the cover haircut set is available.

2. In Cover Haircut Editor's **Cover Haircut** page, specify the attributes to determine which cover haircut is used.

Information	Description
Value	Value of the cover haircut to be applied (expressed as a percentage). This value is assigned to matching collateralized transactions and is displayed in the Cover Haircut column of <b>Transaction</b> view and/or in the Cover Haircut column of <b>Guarantee</b> view in Transaction Manager.
Description	Any meaningful information you want to add to describe the cover haircut.
Order Number	Number used to determine which cover haircut has priority if there is more than one cover haircut with conditions that match the transaction.
Rule Not Rule	Rule that determines when the cover haircut will be used or not used. Rules are defined in Rule Editor.
Guarantor	Condition is met if the client of the guarantee entry matches the Guarantor given in the field.

Information	Description
Guarantor Main Group Guarantor Group	Condition is met if the client of the guarantee entry belongs to Guarantor Group of the Guarantor Main Group given in these fields.
Gap Set Maturity Gap From Maturity Gap To	Condition is met if the transaction maturity falls to a maturity gap in the identified gap set which is within the range defined by values given in Maturity Gap From/To fields.
Currency	Condition is met if the currency of the transaction matches the Currency given in this field.
Nominal Amount From Nominal Amount To	Condition is met if the Nominal Amount of the transaction is within the range defined by the values given in these fields.
Book Value From Book Value To	Condition is met if the book value of the transaction is within the range defined by values given in these fields.
Rating Rating Code	Condition is met if the client of the guarantee has a rating matching the rating and rating code given in these fields. Credit ratings are defined in the Credit Rating Editor: see <i>3.31 Credit ratings (optional)</i> on page 142.
Min Rating (level) Max Rating (level)	Condition is met if the client of the guarantee has a credit rating with rating level definition which is within the range defined by the values given in these two fields. Credit ratings are expressed as a level. The rating level identifies how much risk is carried by the code: the lower the level (number), the less risk involved, i.e. the higher the rating (code).  For example, for S&P, if the minimum is set to BBB and the maximum is set to AAA, then you would select the corresponding minimum rating (i.e. lowest) as 6 and the maximum rating (i.e. highest) as 1, where 6 corresponds to rating code BBB and 1 to AAA.

3. Click **Add** to add the cover haircut definition.
4. Save the cover haircut definition using **File - Save As New**.

#### 11.1.1.1.2 Defining collateral FX haircut sets

A collateral FX haircut is used to adjust the market value of collateral instrument down when calculating its cover value. The haircut is optionally assigned to the collateral entry (row) of a transaction based on currency and the currency of that collateral.

To define an FX haircut set to identify which FX haircut is used if the collateral currency is different from the exposure currency:

1. In Collateral FX Haircut Editor, enter the main attributes of the FX haircut set in the upper part of the editor.

Information	Description
ID & Name	Unique ID and name for the FX haircut set.
Domain	Domain in which the FX haircut set is available.

2. In Collateral FX Haircut Editor's **Collateral FX Haircut** page, specify the attributes to determine which FX haircut is used.

Information	Description
Value	Value of the FX haircut to be applied. This value is assigned to collateral entries of transactions and displayed in column Collateral FX Haircut of the <b>Repo</b> view (for repo related transactions) and in column FX Haircut of the <b>Collateral</b> view (for commercial-loan related transactions) in Transaction Manager.
Description	Any meaningful information you want to add to describe the FX haircut.
Order Number	Number used to determine which FX haircut has priority if there are two or more FX haircuts with conditions matching the transaction currency and collateral currency.
Currency Currency Group	Currency and Currency Group of the collateralized transaction.
Collateral Currency Collateral Currency Group	Currency and Currency Group of the collateral instrument.

3. Click **Add** to add the collateral FX haircut definition.
4. Save the collateral FX haircut definition using **File - Save As New**.

#### 11.1.1.1.3 Defining collateral haircut sets

Collateral haircut is used to adjust the market value of a collateral instrument down when calculating its cover value. The haircut is assigned to the collateral entry of a transaction based on attributes of the collateral instrument.

To define a collateral haircut set to identify which haircut is used according to the instrument, ratings, and other relevant parameters of the collateral instrument:

1. In Collateral Haircut Editor, enter the main attributes of the collateral haircut set in the upper part of the editor.

Information	Description
ID & Name	Unique ID and name for the collateral haircut set.
Domain	Domain in which the collateral haircut set is available.

2. In Collateral Haircut Editor's **Collateral Haircut** page, specify the attributes to determine which collateral haircut is used.

Information	Description
Ineligible	Switch on to make the collateral ineligible (value = 100%) in the agreement. If a collateral instrument with a total haircut of 100% is selected in a transaction, it is considered as ineligible and is not accepted by the system.
Value	Value of the haircut to be applied (expressed as a percentage).
Description	Any information you want to add about the haircut.
Order Number	Number used to determine which haircut has priority if there are two or more haircuts with conditions matching the collateral instrument.

Information	Description
Instrument Group Instrument ... to ... Issuer Group	Matching parameter of the collateral instrument to which the haircut applies.
Issuer Rating Issuer Rating Type	Matching the rating and rating code of the collateral instrument to which the haircut applies. Credit ratings are defined in the Credit Rating Editor: see 3.31 <i>Credit ratings (optional)</i> on page 142.
Min Issuer Rating (level) Max Issuer Rating (level)	Matching the credit rating of the issuer to the rating level range given in these two fields. Credit ratings are expressed as a level. The rating level identifies how much risk is carried by the code: the lower the level (number), the less risk involved, i.e. the higher the rating (code).  For example, for S&P, if the minimum is set to BBB and the maximum is set to AAA, then you would select the corresponding minimum rating (i.e. lowest) as 6 and the maximum rating (i.e. highest) as 1, where 6 corresponds to rating code BBB and 1 to AAA.
Branch Code 0... to ... Branch Code 19	Matching branch code of the collateral instrument to which the haircut applies.

3. Click **Add** to add the collateral haircut definition.
4. Save the collateral haircut definition using **File - Save As New**.

#### 11.1.1.1.4 Defining collateral valuation sets

Collateral valuation sets define the conditions used in the valuation of collateral. When the market value of a collateral instrument is adjusted down to calculate its cover value, the total haircut used in the calculation is received by combining collateral FX haircut with up to three separate collateral haircut components as follows:

$$\text{Cover Value} = \text{MV of collateral} * (1 - \text{HFX} - \text{H1} * \text{F1} - \text{H2} * \text{F2} - \text{H3} * \text{F3})$$

where:

HFX = FX haircut, H1, 2, 3 = collateral haircuts, and F1, 2, 3 = collateral haircut factors

The setup defining the source of each haircut component (HFX, H1, H2, H3) as well as factors used to adjust collateral haircut components (F1, F2, F3) are given in the collateral valuation set.

To group together collateral haircuts and collateral FX haircuts to define a collateral valuation set:

1. In Collateral Valuation Set Editor, fill in the fields using the information in the following table.

Information	Description
ID & Name	Unique ID and name for the collateral valuation set.
Domain	Domain in which the collateral valuation set is available.
Instrument	ID of the collateral transfer instrument. This is only used in collateral management of commercial loans.
Valuation Method	Method used for in valuation, usually <b>Dirty Price</b> . Choose from: <ul style="list-style-type: none"> <li>• <b>Clean Price</b> - Accrued interest of collateral instrument is ignored when calculating collateral market value.</li> <li>• <b>Dirty Price</b> - Accrued interest of collateral instrument is included when calculating collateral market value.</li> </ul>
FX Haircut Set	ID of the FX haircut set you want to use in the collateral valuation set. FX haircut sets are defined in Collateral FX Haircut Editor: see <i>11.1.1.1.2 Defining collateral FX haircut sets</i> on page 349.
Haircut Set (1, 2, 3)	ID of the collateral haircut set you want to use in the collateral valuation set. Collateral haircut sets are defined in Collateral Haircut Editor: see <i>11.1.1.1.3 Defining collateral haircut sets</i> on page 350.
Haircut Factor (1, 2, 3)	Corresponding factor for the collateral haircut set.
Switches	<ul style="list-style-type: none"> <li>• <b>Bid Valuation</b>: Switch on to use bid price. If this switch is not on, then the average Bid and Ask prices are used.</li> </ul>

2. Save the collateral valuation set definition using **File - Save As New**.

### 11.1.2 Attaching master agreements to portfolio owners

Collateral agreements can be attached to a portfolio owner definition: see *3.13.1.9 Attaching collateral agreements to portfolio owners* on page 97.

### 11.1.3 Applying master agreements to instruments

Collateral agreements can be applied to an instrument definition using the **Collateral-setup** feature. In this case, the instrument definition overrides any collateral agreement setup in the portfolio owner definition.

---

**Note:** See the guide *TRM Instruments: Processing & Calculations* for more information about this feature and about features in general.

---

## 11.2 Monitoring collateral positions

The primary TRM application used to monitor collateral positions consisting of underlying exposures of collateralized transactions and collateral received against those exposures is called Collateral Valuation Board.

Collateral positions can also be monitored on several report generator reports.



## 11.2.1 Collateral Valuation Board

Collateral Valuation Board is based on the Entity Manager application and has the same look and feel as, for example, the Transaction Manager. Collateral Valuation Board is specifically designed to allow you to monitor the collateral position of the underlying exposures as well as the collateral securing them.

### 11.2.1.1 Collateral Valuation Board menus

The menu items in Collateral Valuation Board are basically the same as the menu items in Transaction Manager (see *8.1.1 Transaction Manager menus* on page 258).

#### 11.2.1.1.1 View

Collateral Valuation Board has its own set of views displaying the collateral related data.

Information	Description
Query	This view is used to fetch a position to be monitored according to the entered query criteria.
Collateral Position	<p>Collateral Position is the main view of the application. It aggregates requirements (in other words, the underlying exposures secured by collateral) and collateral securing them based on the following grouping columns:</p> <ul style="list-style-type: none"> <li>• Portfolio (Grouping) – Aggregates all requirement and collateral entries in the same portfolio in a single row.</li> <li>• Collateral Agreement (Grouping) – Aggregates all requirement- and collateral entries in the same Collateral Agreement in a single row.</li> <li>• Counterparty (Grouping) – Aggregates all requirement and collateral entries against the same counterparty in a single row.</li> <li>• Collateral Number (Grouping) - Aggregates all requirement and collateral entries with the same collateral number in a single row.</li> </ul> <p>When more than one of the grouping columns is selected, an aggregated row is created for each combination of values in the selected columns, for example, for each combination of Collateral Agreement and Counterparty.</p>
Requirement	Displays all collateral requirements of collateralized transactions that match the query.
Collateral	Displays all collaterals that match the query.

### 11.2.1.2 Start-up parameters

The start-up parameter used to open Collateral Valuation Board is:

```
FKTransactionManager.exe -c Collateral.xml -v collateral --title "Collateral Valuation Board"
```

See *C.11 Transaction Manager* on page 685 for information about the options available.

### 11.2.1.3 Using Collateral Valuation Board

#### 11.2.1.3.1 Constructing a collateral position

In Collateral Valuation Board's **Query** view, you can define your query parameters in the same way as in the **Query** view of Transaction Manager.

The query identifies collateral requirements as well as the collateral securing them. In addition to generic parameters like portfolio and counterparty, some additional parameters are used in Collateral Valuation Board query.

Information	Description
Date	Position date used to identify active requirements and collateral. This is defaulted to current date.
Valuation Date	Date as of which the valuation is made for the identified requirements and collateral. Market rates used in the valuation are always taken from the same date as the position, but for example, accrued interest is calculated to valuation date. Defaulted to Date but can be changed to any later date.
Figure Currency	Valuation currency of the collateral position. When figure currency is not given in the query, the currency of the collateral agreement is used as the valuation currency for requirements and collateral. This behavior is almost always the correct one since collateral management is made separately under each agreement and all margin calls are executed against valuations in the currency of the agreement. This field is only used to identify a common valuation currency in the rare cases of grouping the collateral position across agreements with different currencies.
First Date Method	Method used to define the first date as of which a requirement or collateral affects the position. Choose from: <ul style="list-style-type: none"> <li>• <b>Date &gt;= Active From</b> (default method) Matched by the query if Active From date of the requirement or collateral (normally, Opening Date of the transaction) is on or before the position date (Date of the query)</li> <li>• <b>Date &gt;= Value Date</b> Matched by the query if Value Date of the transaction is on or before the position date (Date of the query)</li> <li>• <b>Valuation Date &gt;= Value Date</b> Matched by the query if Value Date of the transaction is on or before the Valuation Date of the query</li> </ul>
Last Date Method	Method used to define the last date as of which a requirement or collateral affects the position. Choose from: <ul style="list-style-type: none"> <li>• <b>Date &lt;= Active Until</b> (default method) Matched by the query if the Active Until date of the requirement or collateral (normally, Maturity Date of the transaction) is on or after the position date (Date of the query)</li> <li>• <b>Date &lt;= Maturity Date</b> Matched by the query if the Maturity Date of the transaction is on or after the position date (Date of the query)</li> <li>• <b>Valuation Date &lt;= Maturity Date</b> Matched by the query if the Maturity Date of the transaction is on or after the Valuation Date of the query.</li> </ul>
Value Date Offset	Number of days to be subtracted from (positive value) or added to (negative value) the value date of the transaction when applying First Date Methods which are dependent on the value date of the transaction. For example, offset 1 would make the transaction affect the position 1 day before value date.
Maturity Date Offset	Number of days to be subtracted from (positive value) or added to (negative value) the maturity date of the transaction when applying Last Date Method 'Date <= Maturity Date'. For example, offset 1 would stop the transaction from affecting the position on the maturity date and 2 would stop the transaction from affecting the position 1 day before maturity date.

The **Requirement** view only shows the exposures of collateralized transactions for the selected row in **Collateral Position** view.

In addition to generic parameters like portfolio and counterparty, the following fields are used to display the details of collateral:

Information	Description
Currency	Valuation currency of the requirement. This is the currency of collateral agreement of the exposure unless a different currency has been given as Figure Currency for the position in the query.
Currency (Local)	Original currency of the requirement. This is the currency of the exposure transaction.
FX Rate	FX Rate used to convert values in original currency to valuation currency. The rate used is the current market FX spot rate between the two currencies.
Value To Cover Value To Cover (Local)	Unadjusted exposure of the requirement. This value is calculated by the system based on Requirement Method of the collateral agreement of the requirement.
Cover Haircut	Cover Haircut of the requirement used to adjust Value To Cover up to get the actual Cover Requirement.
Cover Requirement Cover Requirement (Local)	Actual value of the requirement to be secured by collateral calculated as follows: $\text{Cover Requirement} = \text{Value To Cover} * (1 + \text{Haircut})$

The **Collateral** view displays the collateral being held that matched the query. Displayed items of this view are also filtered against the selected row in **Collateral Position** view.

In addition to generic parameters like portfolio and counterparty, the following fields are used to display the details of collateral:

Information	Description
Currency Currency (Local) FX Rate	Same as in requirement.
Instrument	Instrument of the collateral. For example, the bond instrument received as collateral.
Underlying Instrument Underlying Type	Instrument and transaction type of the transaction in which collateral is delivered. For example, collateral received from margin call displays the transaction type of the margin call transaction (for example, 'Open Margin') in Underlying Type and the instrument of the margin transaction in Underlying Instrument.
Amount Units	Nominal Amount and Units of collateral instrument.
Market Price	Current market price of the collateral instrument.
Market Value Market Value (Local)	Market Value of the collateral.
FX Haircut Haircut (1, 2, 3) Haircut Factor (1, 2, 3)	Components of the valuation haircut. These are identified from the setup of collateral agreement of the collateral.

Information	Description
Total Haircut	Total Haircut used to adjust Market Value down to get the actual Cover Value. Total Haircut is calculated from the components as follows: $\text{Total Haircut} = H_{FX} + H_1 * F_1 + H_2 * F_2 + H_3 * F_3$ where: $H_{FX}$ = FX Haircut, $H_{1, 2, 3}$ = Haircuts, and $F_{1, 2, 3}$ = Haircut Factors
Cover Value Cover Value (Local)	Actual value of collateral securing the collateral requirement of the collateralized exposure calculated as follows: $\text{Cover Value} = \text{Market Value} * (1 - \text{Total Haircut})$

The **Collateral Position** view displays aggregated requirements and collateral together to enable position level collateral analysis. Aggregation is made according to selected grouping columns (for example, by Collateral Agreement and Counterparty). Several Collateral Valuation Board layouts can be prepared with different grouping setup to support collateral positions at different levels.

In addition to grouping columns and direct aggregation fields of requirement- and collateral views, the following fields are used to display information on the aggregated position as a whole:

Information	Description
Currency	Valuation currency of the collateral position. This is the currency of collateral agreement unless a different currency has been given as Figure Currency for the position in the query.
Cover Difference Cover Difference (ABS)	Difference between Cover Value (of collateral) and Cover Requirement (of requirement). $\text{Cover Difference} = \text{Cover Value} - \text{Cover Requirement}$
Cover %	The percentage of exposure secured by the value of collateral held against it. Calculation of Cover % is dependent on requirement method of the collateral agreement as follows: <ul style="list-style-type: none"> <li>Requirement Method = Requirement Cover %  <math display="block">\text{Cover \%} = 100 * (\text{Cover Value} / \text{Cover Requirement})</math></li> <li>Requirement Method = Value Cover %  <math display="block">\text{Cover \%} = 100 * (\text{Cover Value} / \text{Value To Cover})</math></li> </ul>
Margin Trigger % (Call) Margin Trigger % (Return)	Percentages defined in collateral agreement to trigger margin calls or returns when the value of collateral deviates from the value of underlying exposure too much. Cover % is evaluated against these values to identify the need for margin calls or returns.
Collateral Status	Identifies the current status of collateral position as one of the following: <ul style="list-style-type: none"> <li><b>Fully-Collateralized</b>  <math display="block">\text{Cover \%} = \text{Requirement \%}</math></li> <li><b>Over-Collateralized, Owner:</b> The collateral is held by you (owner).  <math display="block">\text{Cover \%} &gt; \text{Requirement \%}</math></li> <li><b>Under-Collateralized, Owner:</b> The collateral is held by you (owner).  <math display="block">\text{Cover \%} &lt; \text{Requirement \%}</math></li> <li><b>Over-Collateralized, Counterparty:</b> The Collateral is held by the counterparty.  <math display="block">\text{Cover \%} &gt; \text{Requirement \%}</math></li> <li><b>Under-Collateralized, Counterparty:</b> The Collateral is held by the counterparty.  <math display="block">\text{Cover \%} &lt; \text{Requirement \%}</math></li> </ul>

Information	Description
Collateral Action	<p>Identifies the recommended action based on the evaluation of Cover % against Margin Trigger % (Call) and Margin Trigger % (Return) as one of the following:</p> <ul style="list-style-type: none"> <li>• <b>No Action</b> Margin Trigger % (Call) &lt; Cover % &lt; Margin Trigger % (Return)</li> <li>• <b>Collateral to Receive</b> Cover % &lt; Margin Trigger % (Call), Collateral is held by you or Cover % &gt; Margin Trigger % (Return), Collateral is held by the counterparty</li> <li>• <b>Collateral to Give</b> Cover % &lt; Margin Trigger % (Call), Collateral is held by the counterparty or Cover % &gt; Margin Trigger % (Return), Collateral is held by you</li> </ul> <p>Furthermore, Cover Difference (ABS) is evaluated against the Minimum Movement Value of collateral agreement. Regardless of the Cover %, Collateral Action is always set to <b>No Action</b> if the following is true:</p> <p style="padding-left: 40px;">Cover Difference (ABS) &lt; Minimum Movement Value</p>

### 11.2.1.3.2 Creating margin calls

Margin calls are required when the value of collateral is no longer adequate to secure the underlying exposure. They can be made for an indefinite period of time to secure an overall exposure against a specific counterparty under a collateral agreement or for the remaining maturity of a specific transaction to secure the exposure of that operation under a collateral agreement.

Margin calls are created in Collateral Valuation Board using right-click actions Open Margin Movement and Margin Movement from **Collateral Position** view. Actions are available on right-click menu if the following conditions are met:

- Open Margin Movement:
  - Selected position is in a single collateral agreement
  - Selected position is against a single counterparty
  - Collateral action of the selected position is **Collateral to Receive** or **Collateral to Give**.
- Margin Movement (in addition to the above):
  - Selected position is in a single Collateral Number.

Selecting the action from the right-click menu opens a dialog where transaction-level conditions of the margin call are completed. When the dialog is accepted, the system opens a Transaction Manager application used to capture margin calls and creates the new transaction. Collateral details of the margin call must be given in the new transaction displayed in **Repo** view of the application.

If preferred, you can also create margin call transactions directly in Transaction Manager.

See *TRM Instruments: Processing and Calculations Guide* for details of margin call transactions.

### 11.2.1.3.3 Creating margin returns

Margin returns are required when a collateral delivered earlier in a margin call must be returned to the owner of the collateral.

Margin returns are created in Collateral Valuation Board using right-click actions Open Margin Return and Margin Return from **Collateral** view. The following actions are available on right-click menu if the described conditions are met:

- Open Margin Return:

- Selected collateral is in the same instrument
- Selected collateral is in the same collateral agreement
- Selected collateral is against the same counterparty
- Underlying Type of selected collateral is 'Open Margin'.
- Margin Movement:
  - Selected collateral is in the same Collateral Number
  - Selected collateral has the same Maturity Date (this refers to the maturity date of the margin transaction, not to maturity of the collateral instrument)
  - Underlying Type of selected collateral is 'Margin'

Selecting the action from the right-click menu opens a dialog where conditions of margin return are completed. When the dialog is accepted, the system opens a Transaction Manager application used to capture margin returns and creates the new transaction.

Margin return transactions can only be created from existing collateral holdings in Collateral Valuation Board. A corresponding action is not available in Transaction Manager.

See *TRM Instruments: Processing and Calculations Guide* for details of margin return transactions.

#### 11.2.1.3.4 Creating cash collateral movements

Margin calls can also be executed in cash instead of securities. Cash collateral movements are created in Collateral Valuation Board using right-click actions Open Cash Collateral and Cash Collateral from **Collateral Position** view. The following actions are available on right-click menu if the described conditions are met:

- Open Cash Collateral:
  - Selected position is in a single collateral agreement
  - Selected position is against a single counterparty
  - Collateral action of the selected position is 'Collateral to Receive' or 'Collateral to Give'.
- Cash Collateral (in addition to the above):
  - Selected position is in a single Collateral Number.

Selecting the action from the right-click menu opens a dialog where conditions of cash margin movement are completed. When the dialog is accepted, the system opens a Cash Collateral application used to capture new cash collateral movements. If a matching cash collateral transaction already exists in the system, that is used and a new cash collateral movement is added to it. If no matching transaction is found, a new cash collateral account transaction is created and the movement added to it.

Cash collateral movements can also be created directly in Cash Collateral applications, if preferable.

See *TRM Instruments: Processing and Calculations Guide* for details of cash collateral transactions.

#### 11.2.1.3.5 Creating collateral substitutions

Collateral Substitutions are required when existing collateral delivered in a specific collateralized operation (for example, a reverse repo transaction) needs to be substituted for different collateral before the maturity of the transaction.

Collateral substitutions are created in Collateral Valuation Board using right-click action Substitution from Collateral view. This action is available if the following conditions are met:

- Selected collateral is in the same instrument
- Selected collateral is in the same collateral agreement
- Selected collateral is against the same counterparty

- Selected collateral is in the same transaction (collateral substitutions are supported from earlier substitutions as well as the original repo transactions but substituted collateral must all be in the same transaction). This transaction is identified in field 'Number (Grouping)' in **Collateral** view.
- Underlying Type of selected collateral is not 'Open Margin' or 'Margin' (a margin collateral cannot be substituted).

Selecting the action from the right-click menu opens a dialog where transaction-level conditions of substitution are completed. When the dialog is accepted, the system opens a Transaction Manager application used to capture substitutions and creates the new transaction. Details of the new collateral in substitution must be given in the new transaction in Repo view of the application.

You can also create collateral substitutions in Transaction Manager.

See *TRM Instruments: Processing and Calculations Guide* for details of collateral substitution transactions.

### 11.2.1.3.6 Creating repo rollovers

A rollover is required when the original maturity of the repo must be deferred.

Rollovers are created in Collateral Valuation Board using right-click **Roll Over** action in **Collateral Position** view. This action is available if the following conditions are met:

- The selected position is in a single Collateral Number.
- Instrument of the repo transaction (with the same collateral number) is defined with the feature Allow Roll Over (repo). (See TRM Instruments: Processing and Calculations Guide for more details.)
- There are no rollover or substitution transactions with the same collateral number and opening date is after the query date (to make sure the collateral position displayed in Collateral Valuation Board is fully available for rollover at the maturity of the transaction).

Selecting the **Roll Over** action from the right-click menu opens a Transaction Manager application used to capture rollovers and a dialog where transaction-level conditions of the rollover are completed. When the dialog is accepted, the system creates a new rollover transaction. Details of the rolled over collateral can be modified in **Repo** view of the application.

---

**Note:** You can also roll over repo transactions in Transaction Manager, see *TRM Instruments: Processing and Calculations Guide*.

---

## 11.2.2 Collateral Management Reports

In addition to Collateral Valuation Board, collateral operations can be monitored using a set of reports designed for this purpose.

The following reports can be used for monitoring collateral positions:

Report	Description
Guarantee/Collateral Management	<p>This report contains all guarantees securing underlying transactions, including guarantees with collateral requirements, as well as all collateral holdings. Cashflows of underlying transactions are also included in the report unless start-up parameter Drop Cashflows is used. The report can be used for pure collateral management purposes as well but it offers wider functionality for reporting any secured operations, for example, commercial loans secured partially with guarantees and partially with collateral.</p> <p>Report query is based on transaction attributes and is almost identical with corresponding query in Key Figure Report. The report contains full valuation of both underlying exposures and collateral.</p>

Report	Description
Collateral Valuation	<p>This report replicates the logic used in Collateral Valuation Board to construct a collateral position. Only guarantees requiring collateral are included and cashflows of underlying transaction are not displayed. This is a pure collateral management report.</p> <p>Report query is the same as in Collateral Valuation Board and the report contains all valuation information of both underlying exposures and the collateral.</p>
Collateral Inventory	<p>This report contains only collateral related data.</p> <p>Report query is largely based on attributes of the collateral instruments.</p>
Guarantee Inventory	<p>This report contains only guarantee related data.</p> <p>Report query is largely based on attributes of the guarantor client.</p>



In TRM, you can measure your current exposure and simulate the effect of market movements on your exposure (for example, the effect on your exposure of an increase or decrease in interest rates). You can view results both as figures in a grid, and as various charts.

To see both your current exposure and simulations, you use Treasury Monitor: see *12.1 Treasury Monitor* on page 361. TRM also has various types of report you can use to obtain an inventory of your current exposure, and also to measure your profit/loss since a target date you specify.

For measuring your positions and results for FX spot transactions, FX Spot Monitor application is provided; this works in the same way as Treasury Monitor, but is adapted to FX spot transaction data: see *12.3 FX Spot Monitor* on page 393.

## 12.1 Treasury Monitor

To measure your exposure and results, you use Treasury Monitor. You can measure your actual exposure, and perform simulations to test the effect that various transactions would have on your portfolio. These simulations include spot, IR and volatility simulations, and movements over time.

You can also use Treasury Monitor to measure the risk levels of a portfolio against index portfolios.

### 12.1.1 Treasury Monitor menus

The following tables describes the menu items specific to Treasury Monitor and any layout which is based on this application.

Other menu items which are common to all applications are described in *2.2.6 Using application menus* on page 34.

#### 12.1.1.1 File

Menu item	Description
Position Parameters	Opens the <b>Position Parameters</b> dialog which allows you to specify new position parameters, or to select a position you previously saved. The <b>Position Parameters</b> dialog opens automatically when you start Treasury Monitor. <i>See 12.1.4.1 Defining position parameters on page 366.</i>
Save Position As XML	Allows you to save positions in an XML format. The saved position can be used by the system administrator to initialize the server.
Save Position and Pages As XML	Allows you to save the position and all pages in XML format. This is required when starting the tmd process in preconfigured mode (see the <i>TRM System Admin Guide</i> for more information).
Open Book <b>Ctrl+O</b>	Allows you to select an existing book.
Save Book <b>Ctrl+S</b>	Saves any modifications made to the current book.

Menu item	Description
Save Book As	Opens the <b>Save As</b> dialog so you can save the displayed pages as a new book. Enter the following information: <ul style="list-style-type: none"> <li>• <b>Book Name</b> - name for the book.</li> <li>• <b>Owner</b> - user or user group that can modify the book.</li> <li>• <b>User(s)</b> - user or user group that can use the book.</li> </ul>
Close Book	Closes the current book.
Delete Book	Deletes the current book.
Book Properties	Opens the <b>Book Properties</b> dialog so you can view or modify the book's owner and user details. The owner is allowed to modify the book and the user or user group can use the book, but not modify its properties.
Print	Prints the information currently displayed in the page.
Recent Books	Allows you to quickly access the books that you have most recently used: a maximum of nine books can be listed.

### 12.1.1.2 Edit

Menu item	Description
Copy <b>Ctrl+C</b>	Copies the values in the selected rows or columns. You can then paste the values into another application.
Copy Page	Copies the current page including headers. You can then paste the values into another application.
Select/Unselect All	Selects or unselects all cells in the current page. You can then use <b>Edit - Copy</b> to paste the values into another application.

### 12.1.1.3 View

Menu item	Description
Select Columns Select Rows	Opens a multi-selection list so you can select the column or row groupings that you want to display. <i>See 12.1.4.3 Selecting axis (column and row) groupings on page 371.</i>
Swap Rows/Columns	Changes the display of the columns and rows: the columns become rows and the rows become columns.
Select Key-Figures	Opens a multi-selection list so you can select the key-figures you want to display. <i>See 12.1.4.7 Selecting key-figures on page 379.</i>
Zoom In Zoom Out Zoom to Default	Allows you to zoom into the display (to enlarge the figures), zoom out (to see more of the grid), or zoom to default (to reset the original zoom).
Freeze Columns	Locks the selected column and all columns to the left of it. This allows you to scroll through the remaining columns, while the columns in the non-scrolled area remain visible.
Move Page Left	Moves the current page in the display to the left.
Move Page Right	Moves the current page in the display to the right.

Menu item	Description																		
Visual Settings	<p>Changes the display; select from:</p> <ul style="list-style-type: none"> <li>• <b>Bold, Gray, or Color Totals</b></li> <li>• <b>Normal, Gray, or Color Headers</b></li> <li>• <b>Flash Cells.</b></li> <li>• <b>Show Currency:</b> If selected, cells that display monetary values show the currency (code) in which the amount is calculated. (The currency is displayed between parentheses to the left of the amount.)</li> <li>• <b>Full Precision:</b> If selected, displays the maximum number of useful decimal places (i.e. drops the trailing zeros) for all figures. If <b>Full Precision</b> is not selected, you can configure the precision for a single figure using the <b>Configure Precision</b> menu item which is available from the <b>Key Figure</b> dialog when you right-click on the selected value. The default precision is 2 decimal places. The figure can be abbreviated to K (thousands), M (millions), or B (billions) using the negative integers -3, -6, -9 respectively. The <b>Configure Precision</b> functionality works as follows:</li> </ul> <table border="1"> <thead> <tr> <th>Set Precision To...</th> <th>Result</th> </tr> </thead> <tbody> <tr> <td>2 (default)</td> <td>104,814,886.84</td> </tr> <tr> <td>8</td> <td>104,814,886.8392</td> </tr> <tr> <td>-3</td> <td>104,814.89K</td> </tr> <tr> <td>-6</td> <td>104.81M</td> </tr> <tr> <td>-9</td> <td>0.10B</td> </tr> <tr> <td>-365</td> <td>Multiplies the underlying figure by 365.25. Used, for example, to express duration figures in terms of days rather than years.</td> </tr> </tbody> </table> <p>Using the same figure as in the example above, the <b>Full Precision</b> functionality works as follows:</p> <table border="1"> <thead> <tr> <th>Select...</th> <th>Result</th> </tr> </thead> <tbody> <tr> <td>Full Precision</td> <td>104,814,886.8392</td> </tr> </tbody> </table> <p>Note: The full precision value is always shown in a tool-tip when you hover the mouse over the figure, even if <b>Full Precision</b> is not selected.</p> <ul style="list-style-type: none"> <li>• <b>Show Axes Labels:</b> Displays, in the top left corner of the grid, the names of the axis groupings for the rows and columns.</li> </ul>	Set Precision To...	Result	2 (default)	104,814,886.84	8	104,814,886.8392	-3	104,814.89K	-6	104.81M	-9	0.10B	-365	Multiplies the underlying figure by 365.25. Used, for example, to express duration figures in terms of days rather than years.	Select...	Result	Full Precision	104,814,886.8392
Set Precision To...	Result																		
2 (default)	104,814,886.84																		
8	104,814,886.8392																		
-3	104,814.89K																		
-6	104.81M																		
-9	0.10B																		
-365	Multiplies the underlying figure by 365.25. Used, for example, to express duration figures in terms of days rather than years.																		
Select...	Result																		
Full Precision	104,814,886.8392																		

#### 12.1.1.4 Page

Menu item	Description
New Grid Page	Inserts a new grid page with the default layout. A group of pages can be saved in a book using <b>File - Save Book As</b> .
New Chart Page	Inserts a new chart page with the default layout. A group of charts can be saved in a book using <b>File - Save Book As</b> .
New Page with Layout	<p>Opens a selection list so you can select an existing page on which you want to base your new page.</p> <p>This allows you to create a new grid or chart page based on all, or part of the configuration of the existing page.</p> <p>Note: This short-cut is particularly useful when you have created a grid page and you want a matching chart page to display the same data graphically rather than numerically.</p>

Menu item	Description
New Page with Quick Zoom	Creates a new page with the quick zoom layout.
Duplicate Page	Creates a new page with the same properties as the current page.
Copy Page From	Opens a list from which you can select a page you have already configured from one book to copy it into the current book.
Apply Page Filter	Allows you to apply a filter from a page you have already configured to the current page. See <i>12.1.4.2 Using filters</i> on page 368 for more information.
Apply Page Layout	Allows you to apply a layout from a page you have already configured to the current page.
Apply Standard Layout	Allows you to apply the default layout to the current page.
Apply Quick Zoom	Allows you to apply quick zoom to the current page.
Edit Filter	Opens Filter Editor so you can create logical expressions to filter the contents of the current page. See <i>12.1.4.2 Using filters</i> on page 368 for more information.
Transaction Look-Up	Allows you to view the transactions that correspond to the selection in Treasury Monitor. TRM does this by activating a special Transaction Manager mode from Treasury Monitor. Note: This functionality is not available if Treasury Monitor is running in pre-configured mode.
Save Page as XML	Allows you to save the current page in an XML format.
Rename Page	Opens the <b>Set Page Name</b> dialog so you can rename the page.
Remove Page	Removes the current page from the book. You need to select <b>File - Save Book</b> for the removal to be taken into account.
Page Parameters	Displays the details for the current page, including position parameters, the page layout (rows and columns), and a filter (if one has been applied).

### 12.1.1.5 Update

Menu item	Description
Now (F5) Realtime Manually Every 30 Seconds Every Minute (or Every 5, 10, 30 Minutes) Every Hour	Allows you to select the update frequency, that is, how figures are updated and how often. Figures can be updated automatically or manually. <ul style="list-style-type: none"> <li>Automatic updating If you want figures to be updated automatically, you select the updating period. This period can range from <b>Realtime</b> (figures are updated continuously) to <b>Every Hour</b>.</li> <li>Manual updating If you want figures to be updated manually, you first select <b>Update - Manually</b>. Then, whenever you want to force the figures to be updated, you select <b>Update - Now</b>.</li> </ul>

### 12.1.2 Start-up parameters

It is possible to alter the start-up parameters so that Treasury Monitor starts in a different mode. See *C.12 Treasury Monitor* on page 686 for information about the options available.

### 12.1.2.1 Running Treasury Monitor in pre-configured mode

You can run Treasury Monitor in pre-configured mode. This means that you can run it with only a predefined set of views and positions available (for read only). You can monitor the position but cannot change any of the axis selections or groupings. You can choose to save a page or book, which is then available in both normal mode and in pre-configured mode for the running view.

## 12.1.3 Configuring Treasury Monitor

You can configure Treasury Monitor by creating pages or groups of pages in books, by selecting the rows and columns you want to be displayed in each page, and by selecting the values or key-figures to monitor.

You insert a new page using **Page - New Grid Page** or **Page - New Chart Page**. You select the values you want to display in a page using **View - Select Columns**, **View - Select Rows**, and **View - Select Key-Figures**: see *12.1.4.3 Selecting axis (column and row) groupings* on page 371 and *12.1.4.7 Selecting key-figures* on page 379.

You can create and save the pages in multiple books either for your own personal use, or to be shared by other users using **File - Save Book As**.

### 12.1.3.1 Default layouts

In Treasury Monitor, default layouts also exist which determine the layout of all new grids, charts, and quick zoom pages, that you insert into a book.

These pre-configured settings for new pages are contained in a book called `_Templates`. The book contains three pages: Standard Grid, Standard Chart, and Quick Zoom.

You can modify your default layout without affecting the `_Templates` book of other users using Treasury Monitor. This is because you are only modifying the `_Templates` book that is applicable to your user ID and group. (Permissions for users and groups are defined in Security Center by your system administrator.)

---

**Note:** You should create the `_Templates` book if it does not already exist in the book selection list. You name the book with an underscore at the beginning of the name, so that it is displayed at the top of the list.

---

### 12.1.3.2 Modifying chart pages

You can display the information as a graph or chart using **Page - New Chart Page**. The chart is displayed using the Standard Chart default layout but it is possible to modify the chart's appearance.

To change the appearance of a chart page:

1. Select the component you want to modify by doing one of the following:
  - Right-click the graph and select the component that you want to format from the menu.
  - Double-click the component itself.
  - Right-click the graph and select **Wizard**.
2. Make your changes in the resulting dialog.
3. Click **Apply** and **OK** to save the changes.
4. If you want to change the orientation of the graph, press and hold down the Ctrl key and drag the graph to the position you want.

---

**Note:** For technical reasons, you can only change the appearance of a graph or chart. Any changes made to the data in the graph will have no impact on the underlying data in TRM and should be avoided.

---

## 12.1.4 Monitoring positions in Treasury Monitor

### 12.1.4.1 Defining position parameters

To define position parameters:

1. Start Treasury Monitor or select **File - Position Parameters** to open the **Position Parameters** dialog.
2. Do one of the following:
  - If you want to select a position you have previously saved, enter the following information and click **OK**:

Information	Description
Position	The position you want to monitor by selecting one of the views available in the selection list.  This field is available if you have launched Treasury Monitor in pre-configured mode. Once you have selected a position, the other parameters for the position are populated as read-only information.
Book	The book you want to monitor. This book is saved for the next time.

- If you want to enter new position parameters, click **Details** to display the lower part of the dialog and fill in the parameters as described in the following steps.

---

**Note:** If you click **Details** again, the lower part of the dialog is hidden.

---

3. Enter the parameters you want in the **Selection** page:

Information	Description
Portfolio	Portfolio or subportfolio you want to monitor. When you specify a portfolio, all subportfolios within that portfolio's hierarchy structure are also monitored.  Note: The selection list shows only those portfolios (and their subportfolios) to which you have been given access. Portfolio permissions are set using Portfolio Editor's <b>Allowed Users</b> page.
Transaction State	Minimum state that the transactions must have reached to be included in the analysis. For example, if the minimum state is Open (the default value), Treasury Monitor includes all transactions of state Open or later.  The various states that transactions can have are configurable to your organization.
Period Start Period End	The start date is interpreted as one day before the date entered. The end date is the actual date entered here.  Note: If you do not specify a period start date, the valuation is done only on the Period End date. This means that no start figures are calculated, and cashflows maturing before Period End date are not displayed.
Result Mode	Result mode (accounting standard): FO/MO, FAS, IFRS, or Local.

Information	Description
State Context	<p>A value specifying whether certain transaction types are to be included in the position:</p> <ul style="list-style-type: none"> <li>• Default - no cost-of-carry or collateral transactions.</li> <li>• W/Cost-of-Carry - cost-of-carry transactions.</li> <li>• W/Collateral - collateral transactions. These transactions are generated from repo transactions.</li> <li>• W/Cost-of-Carry/Collateral - both cost-of-carry and collateral transactions.</li> <li>• W/Cost-of-Carry/Order - both cost-of-carry and order transactions.</li> <li>• W/Order - order transactions.</li> </ul> <p>Note: W/Cost-of-Carry can only be selected for portfolios which have the <b>Cost-of-Carry</b> switch turned on: see <i>12.1.7 Monitoring cost-of-carry positions</i> on page 390 for more information.</p>

4. Enter the parameters you want in the **Calculation** page:

Information	Description
Figure Currency	The currency in which you want the results displayed. TRM suggests the currency of the portfolio, but you can choose any currency you want from the selection list.
Start Scenario End Scenario	Market information scenario (for example, Freeze, Default) used for the <b>Period Start</b> and <b>Period End</b> dates.
Valuation Mode	Valuation mode: Default, Benchmark, or Theoretical.
VaR Scenario	Correlation and volatility scenario you want to use in the calculations related to value-at-risk.
VaR Date	Date of the value-at-risk volatility and correlation data. For example, to get today's position and market rates ( <b>Period End = Today</b> ), but first of the month volatility and correlation, set <b>VaR Date</b> to the 1st of the month.
VaR Horizon	Length of the horizon: this can be one day, one month, or one week.
VaR Confidence Level	Level of confidence that you wish to use for your Value-at-Risk analysis, expressed as a percentage.
Start Date Valuation End Date Valuation	<p>Choose between <b>Unrealized</b> and <b>Realized</b> (default) or <b>Unrealized</b> and <b>Closing the Books</b> (if triggered via a start-up parameter, see <i>C.12 Treasury Monitor</i> on page 686), where:</p> <ul style="list-style-type: none"> <li>• <b>Unrealized</b> - Cashflows settling on the Valuation Date are considered as not yet settled, i.e. they are valued normally (and profit figures are shown).</li> <li>• <b>Realized</b> - Cashflows settling on the Valuation Date are considered as settled, i.e. they display amount, market value and risk, but no profit figures are shown.</li> <li>• <b>Closing the Books</b> - Cashflows settling on the Valuation Date are ignored. This corresponds to valuation done in closing the books.</li> </ul>

5. If you want to view or change the currency priorities defined in the Currency Priority Editor, click **Currency Priority**. In the **Select Currencies** dialog, make the changes to the priorities and click **OK** to save.

These changes are specific to the current position and do not affect the priorities defined in the Currency Priority Editor. For more information about currency priorities, see *3.10 Currency priorities* on page 87.

---

**Note:** If you need to make further changes to the priorities, for the same position, after you have saved the position, then the last saved priorities for that position are displayed.

---

6. If you do not want to update the analysis in real-time, turn off the **Update in Real Time** switch (it is turned on by default).

As TRM calculates all transaction-related cashflows that are active for the selected period and portfolio, you may wish to turn off the switch for large portfolio structures. You can revert to real-time mode by selecting **Update - Realtime**.

---

**Note:** You can configure Treasury Monitor to disable real-time updates by using the `-no-realtime` startup parameter: see *C.12 Treasury Monitor* on page 686.

---

7. Save the position parameters you have defined in the **Saving** page:

Information	Description
Position Name	Name for the position.
Position Owner	User or user group who can modify the position.
Position User	User or user group who can use the position.

---

**Note:** If you save the position parameters with the current day, they are interpreted as "today" whenever they are used in the future.

---

8. Click **OK**.

Treasury Monitor opens. Treasury Monitor does not contain any data if you have not saved a configuration for the portfolio you selected.

---

**Note:** You can configure Treasury Monitor to be started directly with a given named position parameter, thus skipping the **Position Parameters** dialog, using the start-up parameters `-skip` and `-position` parameter. You can give such an instance a specific name, using the `-title` parameter. This can also be used for saving the position of the window on the screen, so you can set up more instances of Treasury Monitor, and re-start them later at the same position: see *C.12 Treasury Monitor* on page 686.

---

### 12.1.4.2 Using filters

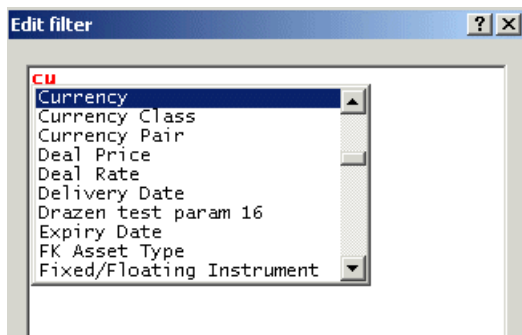
Filter Editor is a simple editor used to set up logical expressions that filter the content of a page in a Treasury Monitor book. You can specify filters on all Treasury Monitor grouping criteria. For example, if you only want to view data where the currency is SEK, you can set the filter to `Currency=SEK`.

To set up a filter:

1. Select **Page - Edit Filter**.
2. In the **Edit filter** dialog, enter the expression you want to filter by.
  - If you want to display all the available values, enter `?` and press the Tab key.



- To display a context-sensitive list, enter the first letter or letters and press the Tab key: for example, enter "cu" and the following list of values is displayed:



The context-sensitive list of values is supported for names and groupings (such as Currency), and for values with selection lists (for example, USD, EUR).

3. You can use the following command keys when creating your filters:

Key	Result
Tab	Displays a context-sensitive list of values. Press the Tab key again or the Enter key to make your selection.
Arrow Up Arrow Down	Moves the cursor up or down the list of values.
F4	Moves the cursor to a syntax error. Syntax errors are displayed in red.
F8	Formats a complex expression.
Ctrl+Space	Inserts a non-breaking space. Non-breaking spaces are required for row or column names that are composed of more than one word, for example, Instrument Group Name.
Ctrl+A	Selects all the text in the <b>Edit filter</b> dialog.
Ctrl+C	Copies the selected text.
Ctrl+V	Pastes the selected text.

4. Click **OK** when you have finished entering your filter criteria (the **OK** button is only enabled when there are no syntax errors).

The data is filtered according to the criteria that you entered. The filter criteria are saved with the page (in your book).

---

**Note:** This functionality is not available if Treasury Monitor is running in pre-configured mode.

---

#### 12.1.4.2.1 Building filters

The table below contains some examples to help you build your filter:

Filter	Description
Simple expressions	All conditions must include the equals (=) sign (with the exception of the <i>in</i> operand explained below).  Currency = SEK

Filter	Description
Multiple conditions	<p>You can link conditions using the operands <i>and</i> and <i>or</i>. To simplify multiple <i>or</i> conditions, you can use <i>in</i>. Use commas to separate conditions.</p> <pre>Currency = SEK or Currency = USD or Currency = GBP Currency = USD and Portfolio = P1 Currency in [SEK, USD, GBP]</pre>
Negative conditions	<p>To specify a negative condition, enter <i>not</i> before the expression.</p> <pre>not Currency = SEK Currency = USD and not Portfolio = P1</pre>
Brackets	<p>Filter Editor uses a standard prioritization of operands in expressions; brackets affect the priorities in an expression.</p> <pre>Currency = SEK and (Portfolio = P1 or Portfolio = P2)</pre>
Pair Values	<p>Some values are more complex than a simple number, string or date. They require definition of the context. The first parameter in the brackets describes the context, the second the value.</p> <p>The format can vary with the regional setting. For example, UK Regional Setting uses a comma separator as shown here, while French Regional Setting uses a semicolon.</p> <p>When a text field is specified in lower case, double quotes are required. In upper case, quotes are not required.</p> <p>For example:</p> <pre>Counterparty Group = {ISSUER-EXCLUDE, OWN-ISSUE}</pre> <p>In the <b>Payment Period</b> example, cashflows falling into the overnight gap according to the IR gap set are filtered.</p> <pre>Payment Period = {IR, O/N}</pre> <p>Some groupings (for example, <b>Instrument Group Name</b> and <b>Leg Instrument Group Name</b>) can have their values configured to enable the position to be filtered on several levels for the same grouping (1 = Top, 2 = Second, 3 = Third, and 4 = Lowest). For these, the filter syntax is slightly different: the pair value must be in line for the filter to work correctly.</p> <p>For example, for <b>Instrument Group Name</b>, the grouping must be at the suggested level.</p> <pre>Instrument Group Name = {1, "Debt Instruments"} and Instrument Group Name = {2, "Bond"} and Instrument Group Name = {3, "Fixed-Rate Bond"} and Instrument Group Name= {4, "Corporate"}</pre> <p>The number for the first parameter in the brackets represents the grouping level. Note that it is also possible to use 0 (which represents the lowest Instrument Group Name level).</p> <p>The <b>Branch</b> grouping can also have its values configured to enable the position to be filtered on more than one branch. In this case, the number represents the relevant Branch Code (found in Branch Code Editor).</p> <pre>Branch Code = {0, "Automobile Industry"} and Branch Code = {1, "Issued in Europe"}</pre>
Handling of spaces in names and values	<p>In grouping criteria names, where the name is composed of more than one word, spaces are represented by a non-breaking space character. You enter a non-breaking space using Ctrl + Space.</p> <pre>Transaction Type = Spot Cashflow Sign = +</pre> <p>To specify a value that contains a space, use quotes ("").</p> <pre>Issuer = "ABN AM" Instrument Group Name = "EQ CHF"</pre>

Filter	Description
Numbers and dates	<p>Number and date formats follow the settings in your Windows Regional and Language Options control panel.</p> <p>For example, if the date setting is dd-MMM-yyyy, you enter 23-Mar-2010 to specify 23 March 2010. Use commas to separate numbers and dates.</p> <p>Transaction Number=123567 Transaction Number in [123567,124567] Expiry Date=23-Mar-2010 Expiry Date in [23-Mar-2010,20-Feb-2010]</p>
Dates in expressions	<p>You can use a date parameter in an expression to filter the values dynamically.</p> <p>For example, you can set the filter so that the values for "Today" (or a date relative to Today) are always displayed.</p> <p>Opening Date = Today Opening Date = Yesterday Opening Date = "Today 5 days ago"</p>
Date comparisons	<p>It is possible to use "&gt;" and "&lt;" comparisons with some dates: Opening Date, Expiry Date, and Payment Date.</p> <p>Opening Date &gt; "2005-01-31"</p>

#### 12.1.4.2.2 Clearing filters

To clear a filter:

1. Select **Page - Edit Filter**.
2. Press **Ctrl+A** to select everything in the filter.
3. Use the Delete or Backspace keys to delete the content.
4. Click **OK**.

#### 12.1.4.2.3 Drill-down filters

In Treasury Monitor you can drill-down an analyzed position further by selecting part of the position and creating a new page. The new page contains only the selected sub-position, using a filter that has been created automatically. You can edit this filter using Filter Editor.

If you drill-down a position which is already limited by a filter, the filter in the new page is inherited from the original page and extended based on your sub-selection.

#### 12.1.4.3 Selecting axis (column and row) groupings

Using the **View - Select Columns** and **View - Select Rows** menu options, you can open the multi-selection lists that enable you to select the axis values according to how you want to group the information displayed in the monitor's page.

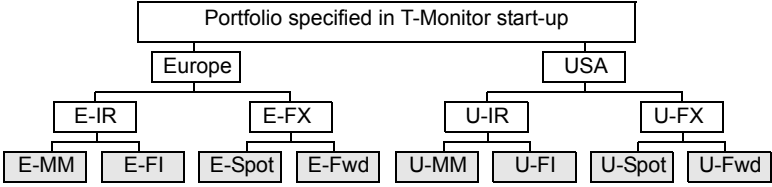
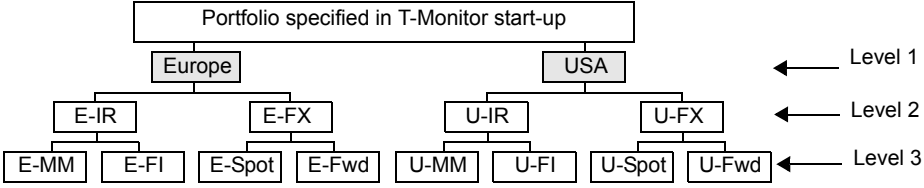
You can configure the values of some axes and also select the same axis as many times as you want. This allows you to display information for multiple instances of the same axis grouping (see *12.1.4.4 Configuring axis values* on page 378 for more information).

See also *12.1.4.5 Specifying time intervals* on page 379 and *12.1.4.6 Positioning totals for axis groupings* on page 379.

The tables below explain the different column or row names, according to the order in which they are grouped in the dialog.

##### 12.1.4.3.1 Position

Value	Groups information according to...
Total	Total of the position.

Value	Groups information according to...
Package Type	Package type to which the transaction belongs.
Package	ID of the package to which the transaction belongs.
Portfolio	<p>Subportfolios in the portfolio hierarchy you selected in the <b>Position Parameters</b> dialog. For example:</p>  <p>You will probably want to use <b>Portfolio</b> most often when you have selected a low-level portfolio: using the example above, if you are a European FX trader, you are only interested in E-Spot and E-Fwd, so it makes more sense to select E-FX when you start up Treasury Monitor.</p> <ul style="list-style-type: none"> <li>• If you want a higher-level, more general grouping (for example, if you are a general manager wanting an overview per country), use <b>Top Portfolio</b> instead (see below).</li> <li>• You can also compare the difference between portfolios and their comparison portfolios: see <b>Portfolio Compare</b> below.</li> </ul>
Top Portfolio	<p><b>Top Portfolio</b> is useful for getting a high-level overview: for example, if you are a general manager and interested in performance for a whole country.</p> <p>By default, this corresponds to the portfolio in Level 1 of the hierarchy which is directly below the portfolio you specified in the <b>Position Parameters</b> dialog. For example:</p>  <p>It is also possible to use a portfolio from a lower level in the hierarchy as the top portfolio:</p> <ol style="list-style-type: none"> <li>1. Right-click this field in the axis values list and select <b>Configure Values</b>.</li> <li>2. Specify the level you want from the selection list.</li> </ol>

Value	Groups information according to...
Portfolio Compare	<p>Portfolios against their comparison portfolio. For the comparison portfolio, TRM displays the key-figure. For any other portfolio, TRM displays the difference between the portfolio and the comparison portfolio, where:</p> $\text{Difference} = \text{Portfolio Key-Figure} - \text{Comparison Key-Figure}.$ <p>If, for example, you want to measure the performance of one trader against another, the comparison portfolio can be a similar portfolio held by another trader. Usually, however, you will probably want the comparison portfolio to be the index portfolio, so that you can compare your portfolio against its benchmark index key-figures.</p> <p>If you want to view relative figures as percentages of total change, for example, Market Value% of Total Change, you must select <b>Portfolio Compare</b>. If you only want to compare the actual key-figures of different portfolios, use <b>Portfolio</b> or <b>Portfolio Top Level</b> instead.</p> <p>TRM selects the comparison portfolio as follows:</p> <div style="text-align: center; border: 1px solid black; padding: 5px; margin: 10px auto; width: fit-content;"> <p>How many portfolios in the selected portfolio hierarchy have the Comparison switch in Portfolio Editor turned on?</p> </div> <div style="display: flex; justify-content: space-around; margin-top: 10px;"> <div style="border: 1px solid black; padding: 5px; width: 30%; text-align: center;"> <p>More than one: Use first comparison portfolio (in alphabetical order)</p> </div> <div style="border: 1px solid black; padding: 5px; width: 30%; text-align: center;"> <p>Only one: Use this portfolio</p> </div> <div style="border: 1px solid black; padding: 5px; width: 30%; text-align: center;"> <p>None: Use first portfolio (in alphabetical order) from this hierarchy level</p> </div> </div> <p>The comparison portfolio is always either the uppermost portfolio (if <b>Portfolio Compare</b> is on the X axis), or leftmost (for the Y axis).</p>
Position Type	<p>Cashflows separated into Settlement and Position groups, enabling the separation of settlement cashflows (Principal, Accrued Interest, Premium) from the rest of the transaction cashflows.</p>
Liquidity Type	<p>Two categories of cashflow, namely position cashflows (committed) and settlement cashflows (uncommitted), where:</p> <ul style="list-style-type: none"> <li>• Committed cashflows include the following: all cashflows with a value date after the current spot date of the respective instrument; all pseudo cashflows, except balances (in other words, FRAs, futures, options, and so on).</li> <li>• Uncommitted cashflows include the following: physical account balances, fees, profit and loss, synthetic portfolio (cost-of-carry) balances; all other cashflows with a value date on or before the current spot date of the respective instrument.</li> </ul> <p>Compare with <b>Position Type</b> (see 12.1.4.3.1 <i>Position</i> on page 371), which also splits the cashflows into position and settlement cashflows, but where the definitions of position and settlement are different.</p> <p>Note: For futures with daily fixing, grouping by <b>Liquidity Type</b> is as follows:</p> <ul style="list-style-type: none"> <li>- The 'uncommitted' liquidity type is equal to the profit and loss (netting result) of the day, and</li> <li>- The 'committed' liquidity type is equal to the difference between the market price and the actual fixing price of the day.</li> </ul>
Liquidity Type (Extended)	<p>This is similar to <b>Liquidity Type</b>, except that it automatically gives a second level of grouping.</p> <ul style="list-style-type: none"> <li>• Uncommitted cashflows are grouped into receivables and payables</li> <li>• Committed cashflows are grouped by instrument.</li> </ul>
Position	<p>This is instrument-sensitive. Depending on the definition of the instrument under analysis, the position can be either grouped by transaction, or grouped by instrument.</p>
Classification	<p>Classification group of the transaction</p>

### 12.1.4.3.2 Instrument

Value	Groups information according to...
Instrument Group	Id of the instrument group
Instrument Group Name	Name of the instrument group to which the instrument belongs. You can specify up to four levels of <b>Instrument Group Name</b> (1 = Top, 2 = Second, 3 = Third, and 4 = Lowest) by selecting multiple instances of the axis and configuring the values of each one: see <i>12.1.4.4 Configuring axis values</i> on page 378
Instrument	Instrument used to value the cashflows. Note: When grouping by Instrument or Leg/Delivery Instrument, the information is sorted by Expiry Date, Maturity Date, and then by Instrument Id.
Secondary Instrument	Instrument used in certain transactions, such as, Security Loan transactions.
Leg Instrument Group	Id of the leg instrument group (as for <b>Instrument Group</b> , but for the leg instrument of the cashflow).
Leg Instrument Group Name	Name of the leg instrument group to which the leg instrument belongs (As for <b>Instrument Group Name</b> , but for the leg instrument of the cashflow).
Leg/Delivery Instrument	Leg defined as an instrument in Instrument Editor. This is useful for viewing swap positions when the swap is defined as an instrument with two legs, for example, a fixed-to-floating instrument where the 1st leg is fixed and the 2nd leg is floating. Note: When grouping by Instrument or Leg/Delivery Instrument, the information is sorted by Expiry Date, Maturity Date, and then by Instrument Id.
FX Currency Pair	Currency pair of an FX transaction.
Underlying Instrument	For derivatives: the instrument defined (in Instrument Editor) as the underlying for the derivative. If there is no underlying, <b>Underlying Instrument</b> groups according to the instrument itself
Leg Security Identifier Type	The default security identifier attached to the leg instrument. The behavior is identical to the behavior described for the Security Identifier. You can also choose to display only one specific type of identifier by right-clicking the field, selecting <b>Configure Values...</b> , and then selecting the specific type.
Security Identifier Type	The default security identifier attached to the instrument. When no identifier is attached, then the instrument ID is displayed. You can configure the value to display only one specific type of identifier: right-click, select <b>Configure Values...</b> and select the identifier type you want to display. In this case, if no identifier of that type is found, then the field is left blank. Security identifiers are defined in the Security Identifier Editor, see <i>3.44 Security identifier types (optional)</i> on page 154.
Branch	Branch used for grouping the instrument. You can use these branch codes for miscellaneous groupings, such as geographical area, or industrial sector. You can group the information under more than one branch by selecting multiple instances of the axis and configuring the values of each one: see <i>12.1.4.4 Configuring axis values</i> on page 378.

### 12.1.4.3.3 Transaction

Value	Groups information according to...
Transaction Number	Transaction number (unique ID for the transaction).
Parent Transaction Number	Parent transaction number.
Continuation Number	Transaction number of the initial (underlying) transaction.
Reference Number	Reference number of the transaction.

Value	Groups information according to...
Transaction Sign	Sign of the transaction: in other words, Buy or Sell.
Transaction Type	Type of transaction (for example, Spot, Forward, Repo, and so on).
Transaction Kind	Transaction kind: for example, Exercise, Early Expiration.
Transaction State	Transaction state, for example, Final.
Deal Rate	Deal/strike rate of the transaction. Strike is relevant to options. Note that when the Deal/Strike Rate (Normal) figure is used as a total in Treasury Monitor for options, the weighted average is given (weighted with nominal amount).
Deal Price	This is calculated using the Book Value and Nominal Amount. In addition, for swaps and swaptions, the "weight" for transaction level Deal/Strike Price is the deal nominal amount, thus displaying meaningful figures, for example, for on-balance swaptions (premium as percentage of nominal). If the price multiplier is used, Deal/Strike Price is divided by this multiplier to display the actual Deal Price.
Trading Unit	Number of contracts in one trading unit.
Property	Property defined by the user at transaction level.
Leg	Leg of the transaction to which the cashflow belongs.

#### 12.1.4.3.4 Cashflow

Value	Groups information according to...
Currency	Currency of the cashflow.
Risk Currency	Risk currency of the cashflow.
Local/Foreign	Currency of the cashflow: <ul style="list-style-type: none"> <li>Local - transactions where the cashflow currency is the same as the base currency of the portfolio</li> <li>Foreign - transactions where the cashflow currency is different from the base currency of the portfolio.</li> </ul>
Currency Class	Currency class of the cashflow. Currency classes are optional groupings of currencies. When you define a currency in Currency Editor you can select a currency class for it. The currency classes themselves are created for you at implementation.
Class Currency	Class equivalent currency. Displays the currency in which class-equivalent key-figures are expressed.
Payment Currency	The currency in which the payment is made.
Payment Type	The type of payment. The following payment types are available: <ul style="list-style-type: none"> <li>Fixed - all instruments with known cashflows.</li> <li>Forecasted Interest - instruments that have interest associated with them, for example, FRNs.</li> <li>Forecasted Profit/Loss - instruments that have p/l associated with them, for example, FRAs and futures.</li> <li>Optional - options, settlements, and CTD cashflows</li> </ul>
Cashflow Sign	Sign of the cashflow: either "receive" or "pay".
Cashflow Type	Cashflow type, namely: Principal; Redemption; Expiration; Interest; Coupon; FX settlement; Balance; Fixing; Fee.
Cashflow Main Type	Main type of cashflow, such as Principal or Fee/Tax.

Value	Groups information according to...
Cashflow Group	Cashflow group used to analyze the cashflows. Cashflow groups are defined in Cashflow Group Editor.

#### 12.1.4.3.5 Client

Value	Groups information according to...
Payment Counterparty	Id of the payment counterparty.
Payment Counterparty Name	Counterparty of the cashflow.
Counterparty	Id of the counterparty of the transaction
Counterparty Name	Counterparty of the transaction
Counterparty Group	Counterparty group to which the counterparty of the transaction belongs.
Issuer	Issuer of the instrument
Issuer Group	Issuer group to which the issuer of the instrument belongs.
Owner	Account owner.
Owner Group	Account owner group.
Credit Client	Guarantors of the issue.

#### 12.1.4.3.6 Valuation

Value	Groups information according to...
Key-Figure	Key-figure. To see any key-figures at all, you must specify <b>Key-Figure</b> for either the rows or the columns: this value adds (or removes), all the key-figures you have selected. If <b>Key-Figure</b> is not selected as a row or column grouping, the key-figures are not displayed. For an explanation of the key-figures you can use, see <i>12.1.4.7 Selecting key-figures</i> on page 379.
Market Rate	Either the instrument or the valuation rate (depending on the instrument definition) that is used to calculate the market value of the position. Cashflows that are not discounted, in other words those that mature on the current date, are displayed under the label Other.
Market Period	Yield curve used to value the instrument.
Position Date	Date of the position.
Valuation Date	Date of the valuation.
Realized	Displays realized and unrealized results separately.

#### 12.1.4.3.7 Date

Value	Groups information according to...
Risk Date	Date when the cashflow takes place, or when a pseudo cashflow is assumed to take place.
Payment Date	Payment date of the cashflow.
Value Date	Value date of the transaction.



Value	Groups information according to...
Opening Date	Opening date of the transaction.
Expiry/Maturity Date	The maturity date of the transaction (in the case of non-derivatives such as bonds and loans) or the expiry date of the transaction (in the case of derivatives such as options and futures).
Underlying Maturity Date	The maturity date of the transaction (in the case of non-derivatives) or the maturity date of the underlying instrument/transaction (in the case of derivatives).
Delivery Date	Date when the instrument is to be delivered.

#### 12.1.4.3.8 Period

Value	Groups information according to...
Risk Period	Gap (of the selected Gap Set) into which the cashflow's <b>Risk Date</b> falls.
Payment Period	Gap (of the selected Gap Set) into which the cashflow's <b>Payment Date</b> falls.
Expiry/Maturity Period	Gap (of the selected Gap Set) into which the transaction's <b>Expiry / Maturity Date</b> falls.
Underlying Maturity Period	Gap (of the selected Gap Set) into which the transaction's <b>Underlying Maturity Date</b> falls.

---

**Note:** See 12.1.4.5 *Specifying time intervals* on page 379 for more information.

---

#### 12.1.4.3.9 Account

Value	Groups information according to...
Bank/Custody Account	Bank account into which the payment is made.
Bank/Custodian	Bank into which the payment is made.

#### 12.1.4.3.10 Parameter

Value	Groups information according to...
Parameter 1-19	Parameter of the transaction. Parameters are grouping categories for transactions. You can define the parameters to group transactions according to your own choice of criteria.

### 12.1.4.3.11 Simulation

Value	Groups information according to...
Simulate FX Spot	Range and offset of the FX spot simulation. See <i>12.1.5.1.1 Simulate FX spot</i> on page 388.
Simulate FX Cross	Range and offset of the FX cross simulation. See <i>12.1.5.1.2 Simulate FX cross</i> on page 388.
Simulate FX Rate Volatility	Range and offset of the volatility simulation of the FX Currency Pair. Select switch <b>Relative Changes</b> to determine if the offset should be absolute or relative. By default, it is not set. See <i>12.1.5.1.3 Simulate FX Rate Volatility</i> on page 389.
Simulate FX ATM Volatility	Range and offset of the ATM volatility simulation of the FX Currency Pair. Select switch <b>Relative Changes</b> to determine if the offset should be absolute or relative. By default, it is not set. See <i>12.1.5.1.4 Simulate FX ATM Volatility</i> on page 389.
Simulate IR Volatility	Range and offset of the volatility reference simulation. See <i>12.1.5.1.5 Simulate IR Volatility</i> on page 389.
Simulate Interest Rate	Range and offset of the IR simulation. See <i>12.1.5.1.6 Simulate Interest Rate</i> on page 389.
Simulate IR Scenario Simulate Spread Scenario Simulate Price Scenario Simulate FX Scenario Simulate IR Volatility Scenario Simulate FX Volatility Scenario	Range and offset of the simulation scenario. To select a particular scenario, right-click the selected grouping value, select <b>Configure Values...</b> and select the specific scenario from the list. Scenarios are defined in the relevant scenario or simulation editors, for example, FX Volatility scenarios are defined in FX Volatility Simulation Editor.
Simulate Quotation Date	Date for the price/rate are loaded. The split in the Y-axis column between 'Base' and 'Simulate Quotation Date' is displayed. Other figures are calculated at Valuation Date (start-up parameter), but use the price/rate from this date (Market Value, for example).

---

**Note:** See *12.1.5 Simulating movements in Treasury Monitor* on page 387 for more information about the Simulation groupings.

---

### 12.1.4.3.12 Loans

---

**Note:** See the guide *TRM Commercial Lending User Guide* for a detailed explanation of the column and row names.

---

### 12.1.4.4 Configuring axis values

Some axis groupings can be defined further by configuring their values. It is also possible to select the same axis more than once.

For example, you can select **Branch** as one or more axis groupings, then select the individual branches you want to use to group the information on each axis by configuring the values.

To configure the axis values:

1. Select **View - Select Columns** or **View - Select Rows** to open the corresponding configuration dialog.
2. In the resulting dialog, select the grouping value you want to configure from the **Selected** list on the right side of the dialog.
3. Right-click the grouping value and select **Configure Values**.

The values available for this axis are displayed. Note that this menu item is only available for axes that can be configured further.

4. In the resulting dialog, select the value you want to assign to the axis.
5. Click **OK**.
6. Repeat the procedure for each axis grouping you want to configure.

#### 12.1.4.5 Specifying time intervals

In Treasury Monitor, you can select the gap set (set of time intervals), that is used when the grouping value **Period** is selected (see 12.1.4.3.8 *Period* on page 377).

To select the gap set:

1. Using either **View - Select Columns** or **View - Select Rows**, select the Period value for which you want to define the time intervals.
2. In the **Selected** list on the right side of the resulting dialog, right-click the Period value, for example, **Payment Period**, and select **Configure Values**.

The gap sets available for that period type are displayed.

3. In the resulting dialog, select the gap set that you want to use from the list.  
Turn on the **Relative** switch if you want the gaps to be relative.
4. Click **OK**.

---

**Note:** If the calendar of the Figure Currency differs from the calendar specified in the Gap Editor, then a combination of the two calendars is used. If no calendar is specified for the gap, then the calendar of the Figure Currency is used by default. Gap sets are created in Gap Editor (see 3.7 *Gaps (time intervals)* on page 62).

---

#### 12.1.4.6 Positioning totals for axis groupings

Once you have selected the groupings that you want to use in Treasury Monitor, you can select whether totals are displayed for the various groupings.

- For rows, you can display totals at the top or the bottom of the set of figures, or both.
- For columns, you can display totals and sub-totals at the left or at the right of the set of figures, or both.

Displaying totals at both top and bottom (or both left and right) is useful if you have a long set of figures.

To position totals for groupings:

1. Using either **View - Select Columns** or **View - Select Rows**, select the grouping value for which you want to display totals.
2. In the **Selected** list on the right side of the resulting dialog, right-click the grouping value and select either **Left Totals** or **Right Totals** for columns, or **Top Totals** or **Bottom Totals** for rows.
3. Click **OK**.

#### 12.1.4.7 Selecting key-figures

The following tables explain the key-figures you can select. All the key-figures show results for the period you define in the **Position Parameters** dialog. For any of the key-figures to be displayed, either your columns or rows must contain the **Key-Figure** column or row grouping.

---

**Note:** To open the list of key-figures, select **View - Select Key Figures** or right-click the column header and select **Select Key Figures**

---

Many key-figures have different characteristics. For example, **Market Value** can be viewed as **Market Value**, **Market Value (Start)** or **Market Value (Change)**, and so on. The result displayed is different depending on the characteristic specified between brackets.

Key figures that do not have a characteristic specified between brackets can be found under the **Figures** section. For key figures that can have several characteristics, such as Market Value, the one provided in the **Figures** section displays the value of the figure at the end of the period.

Key figures with specified characteristics are grouped under **Special Figures**. For an explanation of the different modes, see *12.1.4.7.11 Special figures* on page 387.

The tables below describe the key-figure values, according to the way they are grouped in the key-figure selection dialog.

#### 12.1.4.7.1 Cashflow

Key-figure	Shows this result (for period defined in T. Monitor start-up)
Amount	Nominal cashflow amount expressed in the currency of the cashflow, for example, coupon, interest, redemption cashflow, and so on. Compare with <b>Nominal Amount</b> in <i>12.1.4.7.2 Transaction</i> on page 380.
Payment Date	Payment date of the cashflow.
Risk Date	Date when the cashflow takes place, or when a pseudo cashflow is assumed to take place.
Maturity Date	Maturity date of the transaction.
Payment Amount	Amount expressed in the payment currency of the transaction.
Class Amount	Payment amount expressed in the currency class to which the payment currency belongs. Class amount is calculated from payment currency and payment amount if the family rate has been set for the class currency: otherwise payment currency and amount are shown.
Spot Value	Spot value gives the amount of an FX spot transaction that would hedge the FX exposure of the position. In most cases, this is the local market value of the instrument given at spot. The exception is FX derivatives, where spot value is based on the delta of the option. Also, if the market value of an FX forward deal is calculated with the Quoted method (i.e. using forward FX points instead of the valuation curve of the currency), then the spot value is based on present value, which is calculated using the forward curve, instead of market value.
Payment Spot Value	Spot value expressed in the payment currency of the transaction.
Base Amount	Amount of the cashflow multiplied by the FX spot rate against base currency.
Base Amount (Fwd)	Amount of the cashflow multiplied by the FX forward rate against base currency.
Risk Value	Amount upon which risk calculations are based.
Risk Base Value	Amount upon which risk calculations are based, converted into the figure currency using the FX spot rate.

#### 12.1.4.7.2 Transaction

Key-figure	Shows this result (for period defined in T. Monitor start-up)
Size	Units or Nominal Amount.
Nominal Amount	Face value of the transaction, either with or without interest, depending on the type of instrument.

Key-figure	Shows this result (for period defined in T. Monitor start-up)
Spot Nominal Amount	For IR options, this is the spot equivalent exposure, namely: delta * Nominal Amount For ordinary IR instruments, it is the same as <b>Nominal Amount</b> .
Units	Amount of units of the equity, futures, or options transaction.
Underlying Units	Number of units of the underlying equity corresponding to the size of the option contract.
Underlying Units (Spot)	Spot equivalent exposure of units, namely: delta * Units
Delivery Amount	Amount of a security that is delivered on the delivery date. To use this key-figure, grouping is done by Leg, rather than by instrument.
Delivery Face Amount	Face amount (i.e. the original nominal amount) of a security that is delivered on the delivery date.
Delivery Units	Number of units of a security that is delivered on the delivery date.
Deal Nominal Amount	Nominal amount of the first leg. This is useful for swaps, swaptions, and FX transactions.
Deal Rate Deal Price	Price or rate at which the transaction is made. This key-figure provides the transaction rates or average rates for all transactions made with a particular instrument as simple break-even averages of all outstanding transactions. For future transactions, Deal Price displays the last fixing price (or deal price if not fixed) of the transaction. Matching does not affect this.

### 12.1.4.7.3 Valuation

Key-figure	Shows this result (for period defined in T. Monitor start-up)
Book Value	Book value of the transaction, expressed in the figure currency.
Accrued Book Value	Total of the transaction book value and the accrued part of the premium or discount of the original transaction. To display this key-figure, the instrument must have an accrual method defined.
Local Book Value	Book value of the transaction, expressed in the transaction/cashflow currency.
Market Value	Market value is the value of a transaction according to the prices in the market in which that transaction is traded.
Local Market Value	Market value of the transaction, expressed in the transaction/cashflow currency.
Clean Market Value	Market values not including accrued interest.
Underlying Market Value	Underlying market value shows what a position looks like if it only consists of spot positions. You use it for monitoring whether you have more capital invested than you own. The underlying market value for short MM futures is defined as the Present Value of the far leg.
Underlying Market Value Local	Underlying market value of the transaction, expressed in the transaction/cashflow currency.
Residual Market Value	Residual market value is = Total Market Value - Underlying Market Value.
IR Difference	Difference between interest rates of the two currencies.

#### 12.1.4.7.4 Option figures

Key-figure	Shows this result (for period defined in T. Monitor start-up)
Intrinsic Value	For an option, this is the part of the market value that is due to the difference between the strike price and the spot (or forward price). For a put FX option, with the <b>Intrinsic Value</b> type "Spot" this is:  Intrinsic value = Max (Spot Price - Strike Price, 0).  Depending on the intrinsic value type selected for the instrument, the forward price may be used instead of the spot price, and you can also choose whether to discount this value to the valuation date.
Time Value	For an option, this is the part of the market value due to the time to expiry. It is defined as:  Time Value = Market value - Intrinsic Value.
Time Risk	Time risk figure for options, based on the unit price of the option presented as a function of time and the spot price.
Asset Rho	Sensitivity of the market value with regards to the interest rate of the asset currency.
Cash Rho	Sensitivity of the market value with regards to the interest rate of the cash currency.
Gamma Value	Measurement of the non-linearity of the axis grouping, calculated as gamma * Nominal Amount.
Delta	Sensitivity of the market value with regards to the fx spot rate between the asset and the cash currency.
Delta Cash	The Delta multiplied by FX Spot Rate between the asset and the cash currency.
Delta Asset	The Delta minus the Market Value expressed in the Asset currency.
Gamma	The theoretical Gamma multiplied by the FX Spot Rate between the asset and the cash currency scaled by 100.
Gamma Cash	The Gamma multiplied by the FX Spot Rate between the asset and the cash currency.

Key-figure	Shows this result (for period defined in T. Monitor start-up)
Upper Barrier Asset Rho Gap	Upper barrier sensitivities. See <i>TRM Instruments: Processing and Calculations Guide</i> for more details.
Upper Barrier Asset Yield Gamma Gap	
Upper Barrier Cash Rho Gap	
Upper Barrier Cash Yield Gamma Gap	
Upper Barrier Delta Gap	
Upper Barrier Digital Upper Barrier Digital Local	
Upper Barrier Gamma Gap	
Upper Barrier Sigma Gamma Gap	
Upper Barrier Theta Gap	
Upper Barrier Vega Gap	
Upper Barrier Volga Gap	
Lower Barrier Asset Rho Gap	Lower barrier sensitivities. See <i>TRM Instruments: Processing and Calculations Guide</i> for more details.
Lower Barrier Asset Yield Gamma Gap	
Lower Barrier Cash Rho Gap	
Lower Barrier Cash Yield Gamma Gap	
Lower Barrier Delta Gap	
Lower Barrier Digital Lower Barrier Digital Local	
Lower Barrier Gamma Gap	
Lower Barrier Sigma Gamma Gap	
Lower Barrier Theta Gap	
Lower Barrier Vega Gap	
Lower Barrier Volga Gap	

Key-figure	Shows this result (for period defined in T. Monitor start-up)
Vega	Exposure against a change in the volatility of the underlying instrument.
Volga	Second derivative with respect to the volatility.
Vanna	Sensitivity of the Vega with regards to FX spot rate between asset and Cash currency.
Rho	An interest-rate exposure figure for FX options. The difference between IR Exposure and Rho is that Rho considers the change in the delta, implied by a change in the interest rates (whereas IR Exposure does not).
Theta	Sensitivity of the option in relation to the time to expiry.
Bleed Speed	For all Greeks: Delta, Gamma, Vega, Cash Rho, Asset Rho, and Theta; the Bleed and Speed figures are the derivatives of the Greeks with respect to the time and the spot rate, as follows: <ul style="list-style-type: none"> <li>• The Delta Bleed is the sensitivity of the delta with respect to the time</li> <li>• The Delta Speed is the sensitivity of the delta with respect to the spot rate, that is, the Gamma in this context.</li> </ul>

#### 12.1.4.7.5 Risk

Key-figure	Shows this result (for period defined in T. Monitor start-up)
FX Exposure	The sensitivity of the value of the cashflow to a change in the FX rate.
Price Exposure	The sensitivity of the present value of the transaction to a change in the price of the instrument, or the underlying instrument in case of a derivative. Price Exposure is scaled so that it corresponds to a price change defined as Exposure Offset at the instrument level.
IR Exposure +% IR Exposure -%	These key-figures divide into IR Exposure (+ %) and IR Exposure (- %) key-figures, where (+ %) figures give the gain or loss that would result from interest rates moving <i>up</i> , and (- %) the result from interest rates moving <i>down</i> . Apart from the fact that the IR exposure key-figures relate to IR sensitivity rather than EQ sensitivity, the IR Exposure key-figures are the same as the EQ Exposure key-figures. Note also the key-figure Rho Risk, which is similar to IR Exposure, except that Rho Risk considers the change in the delta, implied by a change in the interest rates (whereas IR Exposure does not). To see the % of Total Change figures, you must select the axis grouping <b>Portfolio Compare</b> : see 12.1.4.3.1 <i>Position</i> on page 371.
IR Exposure (1bp)	IR exposure calculated as the average of a one basis point upward change in interest rate and a one basis point downward change in interest rate.
Price Exposure Value	Price exposure without the scaling by Exposure Offset.
Present Value	Market value of the cashflow calculated using the risk method specified for the instrument. This may differ from the market value calculated using the valuation method if the two methods specified for the instrument are different. For FX options, present value is the expected market value of each cashflow.
Present Value (Next Day)	The best estimate of tomorrow's present value given no change in the market conditions.
Local Present Value	Present value of the transaction, expressed in the transaction/cashflow currency.
Yield	Risk is shown as the average yield of the position. See <i>TRM Instruments: Processing and Calculations Guide</i> .



#### 12.1.4.7.6 Profit and Loss

---

**Note:** See the guide *TRM Instruments: Processing and Calculations* for a detailed explanation of Profit and Loss key-figures.

---

#### 12.1.4.7.7 Margin

---

**Note:** See the guide *TRM Instruments: Processing and Calculations* for a detailed explanation of Margin key-figures.

---

#### 12.1.4.7.8 Duration

Key-figure	Shows this result (for period defined in T. Monitor start-up)
Duration	(On-balance instruments only) Interest-rate exposure figure, scaled by the market value of the position. For off-balance instruments, use <b>Modified Duration</b> instead.
Duration (Days)	This is the same as <b>Duration</b> but expressed in the number of days.
Duration + Duration -	Duration (in number of years) of the cashflows where Duration (+) is the positive (incoming) cashflows, and Duration (-) the negative (outgoing) cashflows.
Effective Duration	(On-balance instruments only) Conversion of IR exposure into a relative figure for a single bond valued with the quoted method: <ul style="list-style-type: none"> <li>Continuously compounded yield is converted into Macaulay effective duration</li> <li>Yearly compounded yield is converted into a modified effective duration on the figure date.</li> </ul> For off-balance instruments, use <b>Modified Duration</b> instead.
Effective Duration +	Effective Duration for positive cashflows only.
Effective Duration -	Effective Duration for negative cashflows only.
Modified Duration	Interest-rate exposure figure scaled by the present value equivalent of the underlying on-balance transaction.  If you group by transaction or any other type of grouping except for total, you see modified duration; if you group by total, then you see effective duration. For IR Swaps, you need to group by Leg/Delivery Instrument to see modified duration. See <i>TRM Instruments: Calculations and Processing Guide</i> .
Effective Convexity	Measure of the non-linearity of the position.  If the effective convexity is 0, the position is linear, and IR exposure and duration can be used to estimate the changes for parallel shifts of any magnitude. The larger the effective convexity, the faster the estimate error grows with the magnitude of the parallel shift.  Effective convexity is calculated by taking the second derivative of the market value of the position against a parallel shift in the IR curve. For more information, see <i>TRM Instruments: Processing and Calculations Guide</i> .  Note: By default, this key-figure is not available. To access it, refer to the configuration information supplied with TRM.
Elasticity	Relative change in the market value of a bond (or any other instrument valued using a yield quote), corresponding to a change in the IR rate, calculated against a relative change in the yield on the figure date.  For zero-coupon valuations, the calculation is against a relative change in all zero-coupon yields.

#### 12.1.4.7.9 Market Information

Key-figure	Shows this result (for period defined in T. Monitor start-up)
Quote	Market quote for the instrument.
Volatility	The interpolation of the FX volatility matrix using the time to expiry and the driftless delta.
ATM Volatility	Figure used to calculate the driftless delta.
ATM Volatility (Tenor Quote)	The interpolation of the ATM Volatility with regards to the tenor.
FX Spot Rate	The FX Rate between two currencies at the spot date corresponding to the figure date.
FX Rate	FX rate used in valuation calculations.
FX Cross Rate	Cross rate used as underlying stochastic variable in the valuation of FX options.
Interest Rate	Interest rate used in valuation calculations.

#### 12.1.4.7.10 Value-at-Risk

Key-figure	Shows this result (for period defined in T. Monitor start-up)
Value-at-Risk	Total value-at-risk of the position.
FX Value-at-Risk	Value-at-risk generated from FX variables in the position by forcing all volatilities of Price and IR variables to 0. Compare with <b>Price Value-at-Risk</b> and <b>IR Value-at-Risk</b> , which work on the same principle of forcing all other volatilities except their own to 0.
IR Value-at-Risk	Value-at-risk generated from IR variables in the position by forcing all volatilities of FX and Price variables to 0. Compare with <b>Price Value-at-Risk</b> and <b>FX Value-at-Risk</b> , which work on the same principle of forcing all other volatilities except their own to 0.
Price Value-at-Risk	Value-at-risk generated from Price variables in the position by forcing all volatilities of FX and IR variables to 0. Compare with <b>FX Value-at-Risk</b> and <b>IR Value-at-Risk</b> , which work on the same principle of forcing all other volatilities except their own to 0.
Uncorrelated Value-at-Risk	Value-at-risk calculated by forcing all correlations between all variables to 0.
FX/IR/Price Value-at-Risk	Value-at-risk calculated with all correlations between FX, IR and Price variables set to zero.
Undiversified Value-at-Risk	Sum of values-at-risk with respect to the individual market variables.
Value-at-Risk Incremental	Value of the previous expression in absolute terms where the exposure of the position as well as the risk factors are calculated for all the selected axis groupings.
IR Value-at-Risk Incremental	As for <b>Value-at-Risk Incremental</b> , calculated with the IR variables.
FX Value-at-Risk Incremental	As for <b>Value-at-Risk Incremental</b> , calculated with the FX variables.
Price Value-at-Risk Incremental	As for <b>Value-at-Risk Incremental</b> , calculated with the Price variables.

### 12.1.4.7.11 Special figures

Key figures with specific characteristics are grouped under **Special Figures** in the **Key-Figure** dialog box. The following table explains these special figures

Special figure characteristic	Shows this result (for period defined in T. Monitor start-up)
Start	Value of the figure at the start of the period.
Change	Change in the value between the start and the end of the period, expressed as an absolute value. $\text{KF Change} = \text{KF Normal} - \text{KF Start}$
Relative Change	Change in the value between the start and the end period, expressed as a percentage of the value at the end of the period. $\text{KF Relative Change} = 100 * \text{KF Change} / \text{KF Start}$
Cumulative	If periods or dates are selected as an axis value, then the KF Cumulative figure shows the amount of all periods, or dates, up to and including the specified period, or date.
% of Total	Value of the key-figure expressed as a percentage of the total key-figure value. Percentage of the total for all selected axis groupings.
% of Subtotal	Percentage of the sub-total. Sub-totals are the individual totals you get when a position is divided according to two or more parameters.
Scaled by Subtotal MV	Key-figure expressed as a proportion of the market value of the sub-total.
Delta Reference	This is only applicable if <b>Portfolio Compare</b> is selected as an axis value. The <b>Delta Reference</b> key-figure shows the key-figure amount in relation to the corresponding key-figure amount for the comparison portfolio.
Delta Reference % of Total	The Delta Reference, as a percentage of the total.
Reference % of Total Change	Change for selected axis grouping, expressed as a percentage of the change in the total for all selected axis groupings.
Delta Reference % of Total MV	The Delta Reference, as a percentage of the total market value.
Simulated Change	Difference between the simulated value and the non-simulated value.
Simulated % Change	Difference between the simulated value and the non-simulated value expressed as a percentage.

## 12.1.5 Simulating movements in Treasury Monitor

In Treasury Monitor, you can simulate the effect that market movements would have on your exposure using one of the Simulation groupings (see *12.1.4.3.11 Simulation* on page 378).

The Simulation groupings enable you to either define the simulation values directly in Treasury Monitor (see *12.1.5.1 Defining simulation steps and ranges* on page 387), or to select a simulation scenario that has already been configured (as described in *4.4 Defining simulation scenarios* on page 167).

### 12.1.5.1 Defining simulation steps and ranges

You can select the range over which the simulation takes place, and the offset between simulations for each of the simulation axes.

To select simulation steps and ranges:

1. Using either **View - Select Columns** or **View - Select Rows**, select the Simulation value for which you want to define the range and offset.
2. In the Selected list on the right side of the resulting dialog, right-click the Simulation value (for example, **Simulate FX Spot**) and select **Configure Values**.

The dialog varies slightly according to the kind of simulation you want to perform.

#### 12.1.5.1.1 Simulate FX spot

Information	Description
From Offset To Offset	Simulation range. For example, to simulate FX changes from -5% to +5% of current level, enter -5 in <b>From Offset</b> and 5 in <b>To Offset</b> .
Step	Size of interval. For example, to see the above FX fluctuations in 1% intervals, enter 1.
Currency	Currency used in the simulation.

In FX simulation, the spot rates of the simulated currencies are changed against the reference currency, so that the simulated change is equivalent to changing the market quotes.

#### For example: USD deposit in a EUR portfolio

For the given currency pair, you can specify which of the currencies you would like to simulate. This can be either of the currencies.

- If the simulation currency is EUR for a given step, the FX rate is modified by a multiplication factor equal to  $1/(1+step)$  if the step is positive and  $(1+step)$  if the step is negative.
- If the simulation currency is USD for a given step, the FX rate is modified by a multiplication factor equal to  $(1+step)$  if the step is positive and  $1/(1+step)$  if the step is negative.

#### 12.1.5.1.2 Simulate FX cross

Information	Description
From Offset To Offset	Simulation range. For example, to simulate FX changes from -5% to +5% of current level, enter -5 in <b>From Offset</b> and 5 in <b>To Offset</b> .
Step	Size of interval. For example, to see the above FX fluctuations in 1% intervals, enter 1.
Relative Change	Turn on this switch if you want changes to be relative. <ul style="list-style-type: none"> <li>• If this switch is on, the values you enter for <b>From Offset</b> and <b>To Offset</b> are considered as a percentage of the current rate.</li> <li>• If this switch is off, the values in <b>From Offset</b> and <b>To Offset</b> are considered as absolute changes.</li> </ul>

#### For example: EUR/USD option in a JPY portfolio

The EUR/USD cross rate will be the ratio of the rate EUR/JPY and USD/JPY. In this context the EUR/USD rate will be simulated via the EUR/JPY rate. The simulation of EUR/JPY is done in the same way as the FX Spot Simulation where the simulation currency is set to EUR.

### 12.1.5.1.3 Simulate FX Rate Volatility

Information	Description
From Offset To Offset	Simulation range. For example, to simulate FX changes from -5% to +5% of current level, enter -5 in <b>From Offset</b> and 5 in <b>To Offset</b> .
Step	Size of interval. For example, to see the above FX fluctuations in 1% intervals, enter 1.
Relative Change	Turn on this switch if you want changes to be relative. <ul style="list-style-type: none"> <li>• If this switch is on, the values you enter for <b>From Offset</b> and <b>To Offset</b> are considered as a percentage of the current IR rate.</li> <li>• If this switch is off, the values in <b>From Offset</b> and <b>To Offset</b> are considered as absolute interest rates.</li> </ul>

### 12.1.5.1.4 Simulate FX ATM Volatility

Information	Description
From Offset To Offset	Simulation range: the values you enter here depend on whether you have the <b>Relative Changes</b> switch turned on.
Step	Size of interval.
Relative Changes	Turn on this switch if you want changes to be relative. <ul style="list-style-type: none"> <li>• If this switch is on, the simulated value (X) at offset (%) relative shift is defined by <math>X * (1 + \text{offset} (\%))</math></li> <li>• If this switch is off (default), the simulated value (X) at offset (%) absolute shift is defined by <math>X + \text{offset} (\%)</math>.</li> </ul>

### 12.1.5.1.5 Simulate IR Volatility

Information	Description
From Offset To Offset	Simulation range. For example, to simulate volatility rate changes from -5% to +5% of current level, enter -5 in <b>From Offset</b> and 5 in <b>To Offset</b> .
Step	Size of interval. For example, to see the above IR fluctuations in 1% intervals, enter 1.

### 12.1.5.1.6 Simulate Interest Rate

Information	Description
From Offset To Offset	Simulation range: the values you enter here depend on whether you have the <b>Relative Changes</b> switch turned on. For example, if you want to simulate IR rates from -0% to +5%, enter 0 in <b>From Offset</b> and 5 in <b>To Offset</b> , and leave the <b>Relative Changes</b> switch turned off. If you want to simulate the IR rate from -5% to 5% of the current level, enter the -5 in <b>From Offset</b> and 5 in <b>To Offset</b> , and turn on the <b>Relative Changes</b> switch.
Step	Size of interval. For example, to see the above IR fluctuations per 1% enter 1.

Information	Description
Relative Changes	<p>Turn on this switch if you want changes to be relative.</p> <ul style="list-style-type: none"> <li>• If this switch is on, the values you enter for <b>From Offset</b> and <b>To Offset</b> are considered as a percentage of the current IR rate.</li> <li>• If this switch is off, the values in <b>From Offset</b> and <b>To Offset</b> are considered as absolute interest rates.</li> </ul>

### 12.1.5.2 Using simulation scenarios

You can set up simulation scenarios in which you can specify different offsets for different quotations, interest rates, or volatilities. These scenarios are available for selection from the corresponding Simulate Scenario grouping.

The actual scenarios are defined using one of the simulation editors: see *4.4 Defining simulation scenarios* on page 167.

To select one of the scenarios:

1. Using either **View - Select Columns** or **View - Select Rows**, select the specific Simulate Scenario grouping that you want to display in the monitor.
2. In the Selected list on the right side of the resulting dialog, right-click the Simulate Scenario value and select **Configure Values**.
3. In the resulting dialog, select the simulation scenario that you want to use.

### 12.1.6 Using Treasury Monitor for risk measurement

Treasury Monitor can be used to measure the risk levels of your portfolios, compared to those of benchmark portfolios.

To measure your trading portfolios against benchmark portfolios:

1. In Treasury Monitor, select a top portfolio that contains both the trading portfolios and the benchmark portfolio.
2. To see by how much the key-figures of your portfolios deviate from those of the benchmark portfolio, select the axis **Portfolio Compare**.

If you just want to see the actual values for the key-figures of your portfolios, use **Portfolio** or **Portfolio Top Level** instead.

---

**Note:** See *12.1.4.3 Selecting axis (column and row) groupings* on page 371 for more information about configuring these values in Treasury Monitor.

---

### 12.1.7 Monitoring cost-of-carry positions

Cost-of-carry is the cost associated with funding a position. See *18.1.2 Managing cost of carry* on page 499 for more information on cost-of-carry. When analyzing your position in Treasury Monitor you can include cost-of-carry transactions to make the picture more realistic.

#### 12.1.7.1 Analyzing cost-of-carry positions and P/L

In Treasury Monitor, you can view the profit/loss of cost-of-carry for a certain period.

In the **Position Parameters** dialog, you can specify whether cost-of-carry transactions (balances and accruals) are included in the position or excluded from the position by selecting *w/Cost Of Carry* in the **Context** field: see *12.1.4.1 Defining position parameters* on page 366.

Normally you include these transactions in the position to make the full picture more realistic, including all realized cashflows and the financing cost incorporated into carrying forward the position held.

### 12.1.7.1.1 Analyzing cost-of-carry positions

Cost-of-carry is displayed as a separate instrument and included in the analysis as with any other product traded in the position. The market value of cost-of-carry includes both the balance and outstanding accrued interest.

### 12.1.7.1.2 Analyzing P/L

Accrued interest for the day is calculated by taking the outstanding accrued interest from today's transaction and the negative outstanding accrued interest from yesterday's transaction and adding them together. If the accruals are in a foreign currency, they are converted into the base currency of the portfolio with the relevant spot FX rates.

FX profit/loss is calculated by comparing, that is, by subtracting the book FX rate used in today's cost-of-carry transaction (yesterday's official (Frozen) spot FX rate) from the current market rate and multiplying the difference with the balance amount.

The FX result is calculated separately for each balance transaction. During a 1 day period only the second transaction (today's transaction) generates an FX result. During a longer period, all transactions apart from those from the date before Period Start Date in Treasury Monitor analysis generate an FX result.

## 12.1.8 Generating position-related reports

In TRM, you can produce reports to see the following position-related information:

Report	Description
Key-Figure	<p>A report giving an inventory of your current position and exposure.</p> <p>Since key-figure reports only give your current exposure, they differ from Periodic P/L reports in that they do not contain any key-figures that show the difference between the figures between two dates (for example, realized results), since these comparison key-figures are irrelevant to a report that give the current figures only.</p> <p>For reports for today's exposure, TRM uses the latest available rates. If you request a report for a past date, TRM uses the last rates for that date.</p> <p>See <i>B.34 Key Figure Report</i> on page 671 for details of the report's parameters.</p>
Periodic P/L Instrument P/L	<p>A profit-loss report for the period you select. The end date is today, since live updates are meaningless for any other day.</p> <p>See <i>B.36 Periodic P/L Report</i> on page 673 for details of the report's parameters.</p>

## 12.2 Position Monitor

Position Monitor combines the ability to query transactions with the Treasury Monitor functionality. It can be used when you want to monitor a position that corresponds to a set of transactions. It is especially useful for large portfolios when you are interested in a subset of transactions; instead of valuing a large position and applying a filter afterwards, you can directly value only the transactions which are of interest.

When you run a query in Position Monitor, the transactions that match the query are displayed in the Position Monitor and are sent to the Treasury Monitor for valuation. Clicking on the **Show Treasury Monitor** button will display the queried transactions according to the position setup (valuation parameters and book).

Whenever you modify a query or whenever new transactions are entered into the system that match the existing query, the position gets updated in real-time in both windows (Position Monitor and Treasury Monitor). The position is also updated in real-time when market rates change, thus allowing accurate real-time monitoring of the defined position.

In order to speed up the display of the query results in Position Monitor, it is recommended that you select only the views and columns that you need. It is possible not to display any fields in the **Transaction** view.

---

**Note:** The Treasury Monitor window is linked to the Position Monitor: it is not possible to use this instance of Treasury Monitor in a standalone way. Whenever you close Position Monitor, the two windows get closed at the same time. On the other hand, if you close the Treasury Monitor window, the Position Monitor window stays open and you can display the Treasury Monitor window at any time by pressing on the **Show Treasury Monitor** button: It can be useful to hide the Treasury Monitor window while you fine tune your query if you need to manipulate many transactions.

---

### 12.2.1 Position Monitor menus

The following table describes the menu items specific to Position Monitor. Menu items that also are available in Transaction Manager are detailed in *8.1.1 Transaction Manager menus* on page 258.

Menu Item	Description
Clear	Clears the query results.
Show Treasury Monitor	Displays the Treasury Monitor window. From here you can view the transactions that you queried for valuation according to the valuation setup parameters and the book configuration you specified in the <b>Valuation Setup</b> .
Valuation Setup	Displays the <b>Valuation Setup</b> dialog. From here you can define the valuation parameters and the Treasury Monitor book. See <i>12.1.4.1 Defining position parameters</i> on page 366 for information about each parameter.

### 12.2.2 Monitoring positions with Position Monitor

To monitor positions:

1. Start Position Monitor and select **Valuation Setup** to open the **Valuation Setup** dialog. Specify the valuation parameters. See *12.1.4.1 Defining position parameters* on page 366 for information about each parameter.
2. In the **Query** view of Position Monitor, query for the transactions that correspond to the exact position you want to monitor and execute the query. The transactions are displayed in the Position Monitor and sent to the Treasury Monitor for valuation.
3. Click on the **Show Treasury Monitor** button to view the valued transactions. The transactions are displayed according to the book configuration and valued according to the valuation setup parameters you specified in step 1.



## 12.3 FX Spot Monitor

FX Spot Monitor is a Treasury Monitor mode for monitoring FX spot transaction positions by currency pair. It is a modification of the standard cashflow-based Treasury Monitor to produce transaction-based average rate and result key-figures, supporting position monitoring of currency pair-driven FX spot trading.

See *12.4 FX Position Roll Over activity* on page 397.

### 12.3.1 FX Spot Monitor menus

The menu items in FX Spot Monitor are the same as the menu items in Treasury Monitor (see *12.1.1 Treasury Monitor menus* on page 361 for more information).

### 12.3.2 Start-up parameters

The start-up parameter used to open Treasury Monitor's FX Spot mode is:

```
FKTreasuryMonitor.exe --mode fx-spot
```

See *C.12 Treasury Monitor* on page 686 for more information.

### 12.3.3 Monitoring positions in FX Spot Monitor

FX Spot Monitor works in the same way as Treasury Monitor, but differs in the following respects:

- Axis groupings

FX Spot Monitor contains a subset of the groupings supported in Treasury Monitor. Since the application is designed specifically for monitoring currency pair FX positions, only groupings considered to be meaningful for this purpose are included.

- Key-figures

FX Spot Monitor has a unique set of key-figures providing information for monitoring FX spot positions by currency pair, such as different types of average rates and currency pair-specific results. See *12.3.3.1 Selecting key-figures in FX Spot Monitor* on page 393.

- Start-up query

Special start-up query is used to identify transactions affecting currency pair FX positions. The following transactions are included in the position:

- FX spot and forward transactions where value date is on or after spot date of the traded currency pair as of current date (i.e. Period End date of the startup)
- FX spot and forward transactions where value date is before the current spot date of the traded currency pair if opening date is the current date (i.e. pre-spot transactions traded today are included)
- Cashflows from FX swap transactions where cashflow value date is on or after current spot date of the traded currency pair (typically, far leg of swap transaction created by activity FX Position Roll Over used to move forward open currency pair positions from the previous spot date to the next one).

#### 12.3.3.1 Selecting key-figures in FX Spot Monitor

In FX Spot Monitor, as in Treasury Monitor, you can select any items for the X and Y axes to view results grouped by any criteria. However, since in FX Spot Monitor all average rate and result calculations are based on information specific to the transaction and currency pair rather than on individual cashflows, most key figures are calculated only when position is grouped by FX Currency Pair.

This grouping makes it possible to view all traded currency pairs with average rates and results. You can of course split the currency pair position further by grouping by Instrument or Transaction, but it is probably more useful to group by FX Currency Pair only.

To net the position across all currency pair positions into currency-specific positions, replace the axis grouping **FX Currency Pair** with **Currency**. You can then view the aggregated position, in USD for example, regardless of the currency pairs in which the trading takes place, using specific key-figures.

The following sections show whether to select grouping by **FX Currency Pair** or grouping by **Currency**, for the key-figures to be meaningful. The descriptions of key-figures in FX Spot Monitor correspond to the submenus in the key-figure selection dialog.

#### 12.3.3.1.1 Risk

Risk key-figures refer to the sensitivity of the position expressed in value gained or lost when market FX rates move.

The only key-figure in this category, FX Exposure, works exactly as in Treasury Monitor. To provide meaningful output, it must be used in combination with axis grouping by **Currency**.

#### 12.3.3.1.2 Market Information

Market Information key-figures are described in the following table. You can group by FX Currency Pair, or by Currency:

Key-figure	Shows this result (for period defined in FX Spot Monitor start-up)
FX Rate	Market FX rate used in valuation: <ul style="list-style-type: none"> <li>If you select grouping by FX Currency Pair, this rate is specific to a currency pair</li> <li>If you select grouping by Currency, the rate is between this currency and the figure currency of the analysis.</li> </ul>
Spot Date	Spot Date displays the current spot date of the currency pair. As FX Spot Monitor is heavily based on the spot date by currency pair, it is important that holiday calendars are correct. Spot Date is relevant only if you select grouping by FX Currency Pair for one of the axes

#### 12.3.3.1.3 Currency Pair Amount

Currency Pair Amount key-figures refer to the size of the position expressed in amounts bought and sold in each currency pair.

The following key-figures are relevant only if you select **FX Currency Pair** for one of the axes:

Key-figure	Shows this result (for period defined in FX Spot Monitor start-up)
Base CCY Amount	Net amount bought or sold in the base currency (deal currency) of the currency pair. You use this key-figure to display the current net position of all transactions in the currency pair expressed in the base currency.
Base CCY Buy Amount Base CCY Sell Amount	Total amount bought (Base CCY Buy Amount) or sold (Base CCY Sell Amount) in the base currency (deal currency) of the currency pair. You use these key-figures if you are, for example, interested in the trading turnover of the position expressed in the base currency.
Quote CCY Amount	Net amount bought or sold in the quote currency (price currency) of the currency pair. You use this key-figure to display the current net position of all transactions in the currency pair expressed in the quote currency.
Quote CCY Buy Amount Quote CCY Sell Amount	Total amount bought (Quote CCY Buy Amount) or sold (Quote CCY Sell Amount) in the quote currency (price currency) of the currency pair. You use this key-figure if you are, for example, interested in the trading turnover of the position expressed in the quote currency.

#### 12.3.3.1.4 Currency Amount

Currency Amount key-figures refer to the size of the position expressed in amounts bought and sold in each currency. The following key-figures are relevant only if you select **Currency** as one of the axes:

Key-figure	Shows this result (for period defined in FX Spot Monitor start-up)
Buy Amount Sell Amount	Total amount bought (Buy Amount or sold Sell Amount) in one currency regardless of the currency pairs in which trading takes place.  You use this key-figure if you are, for example, interested in the trading turnover of one particular currency.
Net Amount	Net amounts bought or sold in one currency regardless of the currency pairs in which trading takes place.  The main purpose of this key-figure is to display the exposure of one currency against the figure currency of the net analysis of all transactions in the position.
Net Amount Base	Net amount converted to the figure currency using the current spot rate. Net Amount Base is displayed as zero for the figure currency cashflows. This enables you to use this key-figure total as an accurate measure of the current total exposure of all non-figure currencies expressed as equivalent value in figure currency (that is, the current market value of all foreign currency positions expressed in the figure currency).

#### 12.3.3.1.5 Average Rate and MtoM Average Rate

**Note:** For each Deal Rate key-figure, there is a matching MtoM Rate key-figure: for example, B-E MtoM Rate matches B-E Deal Rate.

The only difference between Deal Rates and MtoM Rates is in the sets of rates used to calculate the results for transactions which were traded before the start of the analysis period (i.e. before Period Start date given in the start up of FX Spot Monitor):

- Deal rate key-figures are calculated from the rates actually entered for the deal
- MtoM rate key-figures are calculated from closing rates prior to the analysis period for all deals traded before the analysis period, and from deal rates for all deals traded during the analysis period.

If your position contains transactions traded before the analysis period (including swap transactions created by the FX Position Roll Over activity and used to move open currency pair positions forward from the previous spot date to the next one):

- Deal Rates calculates the average rates of the position using historic transaction rates regardless of when transactions were traded
- MtoM Rates treats the period prior to analysis period as realized at closing market rates as of one day before the start of the analysis period. It calculates average rates using market rates of that date for all transactions traded before the analysis period as if the transactions were traded at those closing rates.

Average Rate and MtoM Average Rate key-figures are relevant only if you select **FX Currency Pair** for one of the axes (to view the information by currency pair):

Key-figure	Shows this result (for period defined in FX Spot Monitor start-up)
B-E Deal Rate B-E MtoM Rate	Weighted average rate (weighted by the base currency amount) of all the transactions in any particular currency pair. In effect, the key-figure displays the accumulative level (break-even) at which the position (the base amount) is long or short in any particular currency pair.
Deal Buy Rate MtoM Buy Rate	Weighted average rate (weighted by base currency amount) of all buy transactions in any particular currency pair.

Key-figure	Shows this result (for period defined in FX Spot Monitor start-up)
Deal Sell Rate MtoM Sell Rate	Weighted average rate (weighted by base currency amount) of all sell transactions in any particular currency pair.
Last Open Deal Rate Last Open MtoM Rate	Break-even average rate calculated for transactions traded after the last change in the position from long to short or vice versa. The transaction that takes the position across zero is divided so that only the part which contributes to the current base amount is taken into account in the weighting.
Open Deal Rate Open MtoM Rate	<ul style="list-style-type: none"> <li>Either the Deal to MtoM Buy Rate or the Deal to MtoM Sell Rate, depending on whether the Base CCY Amount of the currency pair is positive or negative (the position is long or short).</li> </ul> <p>You use this key-figure to see the average rate of your open position in the currency pair as the average rate of open bought or sold amounts only, instead of the break-even rate calculated for all transactions (B-E Rate) or for transactions traded after the last change in the position from long to short or vice versa (Last Open Rate).</p>

### 12.3.3.1.6 Result and MtoM Result

As with the Deal Rate and MtoM Rate key-figures, the only difference between these two sets of matching key-figures is in the sets of underlying rates are used to calculate the results: see the explanation under *12.3.3.1.5 Average Rate and MtoM Average Rate* on page 395.

Result and MtoM key-figures are relevant only if you select **FX Currency Pair** for one of the axes (to view the information by currency pair).

---

**Note:** Closed is realized, and open is unrealized.

---

Key-figure	Shows this result (for period defined in FX Spot Monitor start-up)
Closed Deal Result Closed MtoM Result	<ul style="list-style-type: none"> <li>Closed Deal Result is the result of the closed part of the total position and calculated using the Deal Buy Rate and the Deal Sell Rate. The result is expressed in the quote currency of the currency pair. The closed part of the position is calculated by taking the smaller of the absolute values of the Base CCY Buy Amount and the Base CCY Sell Amount.</li> </ul> $\text{Closed Deal Result} = ((\text{Deal Sell Rate} - \text{Deal Buy Rate}) \times \text{ABS}(\text{MIN}(\text{Base CCY Buy Amount and Base CCY Sell Amount})))$ <ul style="list-style-type: none"> <li>Closed MtoM Result is the same, except based on MtoM Buy and Sell rates.</li> </ul>
Closed Deal Result Base Closed MtoM Result Base	<ul style="list-style-type: none"> <li>Closed Deal Result and Closed MtoM Result converted to the figure currency using the current spot rate.</li> </ul>
Closed Last Open Deal Result Closed Last Open MtoM Result	<ul style="list-style-type: none"> <li>Closed Last Open Deal Result is the remainder after Open Last Open Deal Result. In other words:  <math display="block">\text{Closed last Open Deal Result} = \text{Total Deal Result} - \text{Open Last Open Deal Result}</math> </li> <li>Closed Last Open MtoM Result is the same principle, but for MtoM figures, namely the remainder after Open Last Open MtoM Result:  <math display="block">\text{Closed last Open MtoM Result} = \text{Total MtoM Result} - \text{Open Last Open MtoM Result}</math> </li> </ul>
Closed Last Open Deal Result Base Closed Last Open MtoM Result Base	<ul style="list-style-type: none"> <li>Closed Last Open Deal Result and Closed Last Open MtoM Result converted to the figure currency using the current spot rate.</li> </ul>
Open Deal Result Open MtoM Result	<ul style="list-style-type: none"> <li>Open Deal Result = Total Deal Result - Closed Deal Result</li> <li>Open MtoM Result = Total MtoM Result - Closed MtoM Result.</li> </ul>

Key-figure	Shows this result (for period defined in FX Spot Monitor start-up)
Open Deal Result Base Open MtoM Result Base	<ul style="list-style-type: none"> <li>Open Deal Result and Open MtoM Result converted to the figure currency using the current spot rate.</li> </ul>
Open Last Open Deal Result Open Last Open MtoM Result	<ul style="list-style-type: none"> <li>Open Last Open Deal Result is the result generated from the current open position based on the Last Open Deal Rate, that is, the average rate of the position traded after the position last went from short to long or vice versa. The result is expressed in the quote currency of the currency pair: Open Last Open Deal Result = (FX End Rate - Last Open Deal Rate) x Base CCY Amount</li> <li>Open Last Open MtoM Result is the same, but based on the Last Open MtoM Rate: Open Last Open MtoM Result = (FX End Rate - Last Open MtoM Rate) x Base CCY Amount</li> </ul>
Open Last Open Deal Result Base Open Last Open MtoM Result Base	<ul style="list-style-type: none"> <li>Open Last Open Deal Result and Open Last Open MtoM Result converted to the figure currency using the current spot rate.</li> </ul>
Total Deal Result Total MtoM Result	<ul style="list-style-type: none"> <li>Total Deal Result is the total result displayed in the quote currency of the currency pair for all transactions in one currency pair and calculated for each transaction using the current rate (FX End Rate) and the deal rate of the transaction. For an aggregated currency pair position, this can also be calculated using Deal B-E Rate: Total Deal Result = (FX End Rate - Deal B-E Rate) x Base CCY Amount</li> <li>Total MtoM Result is the same, but based on MtoM rates rather than deal rates. For an aggregated currency pair position: Total MtoM Result = (FX End Rate - MtoM B-E Rate) x Base CCY Amount</li> </ul>
Total Deal Result Base Total MtoM Result Base	<ul style="list-style-type: none"> <li>Total Deal Result and Total MtoM Result converted to the figure currency using the current spot rate.</li> </ul>

## 12.4 FX Position Roll Over activity

This section describes how to set up a nightly activity in Activity Manager to roll over FX Spot positions. You can then monitor these positions in FX Spot Monitor (12.3 FX Spot Monitor on page 393). Before creating the nightly activity, make sure that the top portfolio on which you want to roll over spot positions is correctly set up for FX position roll over, see 3.14.1.1 Setting further portfolio attributes on page 108. (Only portfolios with the switch **FX Position Roll-Over** turned on are available for this activity in Activity Manager.)

This nightly activity rolls the open position over (by currency pair) from the previous spot date to a new spot date. This position roll-over is done by creating internal roll over transactions, which move spot positions forward. After the activity has run (spot positions rolled over), you can query spot transactions against all transactions with spot (or later) value dates in FX Spot Monitor. The position at spot is when the value date of all cashflows is equal to the current spot date.

The system always combines currency pairs to roll over the position. The base currency of the roll-over transaction (the *position currency*) is determined according to market conventions defined in the Currency Editor. For example, for a standard EUR customer, both USD/CHF and CHF/USD deals will be rolled over as a USD/CHF position.

To set up a nightly activity to move the spot positions forward:

1. In Activity Manager, create a new activity using activity type **FX Position Roll-Over**.
2. Select group **NIGHTLY**.

3. Configure the activity parameters. See *A.42 FX Position Roll-Over* on page 644 for information on the parameters.
4. Save the activity using **File - Save**.

The basic principle of measuring performance in TRM is to use an agreed index or benchmark portfolio representing a target performance for a portfolio, and measure the performance of your own portfolio against that agreed index or benchmark. The indexes you can use can be industry-standard indexes (supplied by Reuters or OTS and imported, in real-time, into TRM), or indexes that you derive from a "basket" of indexes ("derived indexes").

---

**Note:** The real-time market feeds you have (Reuters, or OTS) depend on whether your organization has access to these services, and your configuration of TRM.

---

## 13.1 Measuring performance and risk

This section explains:

- Performance versus risk: how you can outperform a benchmark by deviating from it, and how your risk is then the degree of deviation
- The AIMR-PPS™ standard that TRM's functionality is based on.

### 13.1.1 Performance versus risk

The objective of performance measurement is to calculate the performance of your traded portfolio, and then compare it to the performance of the selected benchmark.

The closer the position in the investment portfolio matches the benchmark position, the closer the development of the market values. Therefore, in order to outperform the benchmark, your position needs to differ from the benchmark portfolio. This means that, for performance measurement, risk is the amount of deviation from the benchmark portfolio, rather than the absolute changes in the fund's market value.

An investment portfolio can vary from its benchmark in terms of:

- Asset Allocation - how the portfolio is spread among shares, bonds, cash, and so on
- Investment Selection - the selection of individual investments within each asset class.

In principle, you can outperform the benchmark by picking instruments that perform better than those in the benchmark portfolio. For example, the return on leveraged instruments such as forwards, futures, and options can be greater than the return on non-leveraged instruments (but obviously the risk is higher).

There are two approaches you can take to outperforming the benchmark:

- Either actively, by varying a portfolio's exposure in different assets to take advantage of opportunities or to avoid risks in the markets in the short to medium term
- Or passively, by setting target exposures to different assets, then keeping them static for the medium to long term.

In many cases, you might be able to measure your portfolio's risk exposure just by monitoring its deviation from the relative share of market values in the benchmark portfolio. TRM offers you more flexibility, however, because you can generate transactions and create an index portfolio, and use

Treasury Monitor to produce a key-figure level analysis of your portfolio versus the generated index portfolio.

### 13.1.1.1 TWR method for measuring performance

Performance is measured by the TWR (time-weighted rate of return). TWR calculates the changes in the value of a portfolio as a percentage of the capital that has actually been invested during the reporting period. TWR is an attempt to measure performance without the distortions caused by additions and withdrawals of cash.

In any portfolio, however, there are always cashflows going out (withdrawals) or in (deposits, and coupon and dividend payments). The ideal TWR calculations would need to re-evaluate portfolios intraday (in other words, every time there is a cash inflow or outflow); since this is not practical, TRM calculates the TWR using modified Dietz returns, whereby a constant rate of return is assumed each day and each cashflow is weighted by the amount of time that it is held in the portfolio.

### 13.1.1.2 Measurement methods

Typically, a cash (spot) transaction is committed on the trade date but physically delivered and paid some days later on the value date. Clearly, a bought position is exposed to the market from trade date; the market value during the period until value date depends, however, on which of the following two evaluation methods is used:

- Value date method

The market value during the period between trade and value date is the netted value of the position and the settlement payment. On the value date the cashflow term is equal to the settlement payment and the market value is equal to the value of the position side.

For example:

Day	MV begin	MV end	Cashflows	Result
0	0	0	0	0
1	0	1	0	0
2	1	2	0	100%
3	2	53	50	1.5%
4	53	54	0	0

- Trade date method

This can be seen as trading with immediate delivery and payment. The market value on the trade date equals the value of the position side of the transaction, and consequently the cashflow term on the trade date is equal to the discounted settlement payment.

For example:

Day	MV begin	MV end	Cashflows	Result
0	0	0	0	0
1	0	51	50	0
2	51	52	0	1.96%
3	52	53	0	1.5%
4	53	54	0	0

Performance in TRM is measured using time-weighted returns (TWRs) on both the trade and value date bases. TRM calculates the monetary result based on the assumption that all investment in the portfolio is performed in the selected index.



## 13.1.2 AIMR-PPS™ standards

TRM's performance monitoring is based on an industry-standard methodology, the AIMR-PPS™ standards. The goal of the AIMR-PPS standards is to promote uniformity in performance reporting so that the results of investment managers are directly comparable.

### 13.1.2.1 Actual basis and all cash basis

The AIMR-PPS standards require that performance is measured on both an actual basis and an all cash basis. Actual basis and all cash basis can be defined as follows:

- Actual basis measures the growth of the actual invested capital, in other words it is a combination of both stock picking and leverage.
- All cash basis attempts to eliminate the effects of leverage by restating the position into an equivalent cash position having the same market exposure (the spot equivalent position, SEP). The all cash basis performance is then the performance measured on the restated cash equivalent position.

If a fund is using leverage, the AIMR-PPS standards require the presentation of both actual and all cash basis performance. Since the benchmark is normally non-levered, the comparison between the benchmark and all cash basis show the stock picking ability of the fund manager whereas the difference between the actual and the all cash basis performance indicate timely and efficient use of leverage in managing the fund.

## 13.2 Setting up performance measurement and risk

This section explains the settings you need to be able to monitor performance and risk in TRM.

- Performance Monitor is used to measure the performance of your portfolios against indexes and benchmark portfolios
- Treasury Monitor is used to measure the risk levels of your portfolios, compared to those of benchmark portfolios.

This section also explains how to generate historical market values for portfolios; these are required before you can measure the performance of portfolios in Performance Monitor.

---

**Note:** Although you can use benchmark portfolios in both Performance Monitor and Treasury Monitor, you can use index values in Performance Monitor only. This is because Treasury Monitor only works on portfolios containing transactions, and index values do not relate to individual transactions. Also, Treasury Monitor measures the exposure of current positions in real-time, whereas Performance Monitor is designed to measure the performance of positions over time.

---

### 13.2.1 Setting up entities for performance measurement

This section describes the additional values or specific configuration needed for static data entities used in performance measurement.

#### 13.2.1.1 Setting up instruments

It is important that instrument entities used in performance measurement are defined with the appropriate valuation approach for the valuation mode. The valuation approach you select must be in line with your expectations for their valuation in performance measurement.

The definitions of some instrument entities also need to include a performance-related feature before they can be used in performance measurement. These are described in the following sections.

### 13.2.1.1.1 Instrument Type = Index

Feature	Description
PERFORMANCE-INDEX	Used to identify an Index instrument as a benchmark index. If this feature is applied to the instrument, the index is available for selection in Performance Monitor's <b>Benchmark</b> selection list.

### 13.2.1.1.2 Instrument Type = Cash

Feature	Description
PERFORMANCE-CASH-IN-OUT	Used to identify payment instruments that should be treated as cash injections or outflows in the performance calculations. <ul style="list-style-type: none"> <li>If this feature is applied to the instrument, in the return calculation for the position, the payment instrument generates an extra cashflow that offsets the change of the bank account balance (or Cost of Carry balance) caused by the payment. This extra cashflow appears on the Portfolio grouping level on the opening date or value date of the payment (depending on whether Trade Date or Value Date basis is used). On the same date, there will be a change in the market value of the bank account caused by the payment, which would otherwise generate a return, but which is now exactly offset by the cashflow.</li> <li>If this feature is not applied to the instrument, there will not be any cashflows from the payment on the Portfolio level. However, there will be cashflows on the instrument and account, but these will offset each other on the Portfolio level. Therefore, when calculating the return on the portfolio level, the change in market value on the account balance caused by the payments will generate a return for the portfolio.</li> </ul>
PERFORMANCE-TRADE-DATE	Determines that the market value for the payment transactions should be shown in the period between the Opening Date and Value Date of the transaction. <ul style="list-style-type: none"> <li>If this feature is applied to the instrument, payment transactions will appear in Performance Monitor in a similar way to FX transactions (that is, showing discounted market value).</li> <li>If this feature is not applied to the instrument, payments will only show a market value on their value date (unless Trade Date method is used in Performance Monitor).</li> </ul>

### 13.2.1.1.3 Instrument Type = FX

Feature	Description
PERFORMANCE-FX-HEDGE	Used to identify FX instruments that are to be treated as hedges in performance calculations.

---

**Note:** See the guide *TRM Instruments: Processing and Calculations* for more information about features.

---

### 13.2.1.2 Setting up portfolios

To set up portfolios for performance measurement:

1. In Portfolio Tree, make sure that the portfolio structure is correct.

The design of the portfolio structure affects how many different top portfolios are needed for saving market values and for monitoring performance on various levels. This includes the structure for benchmarks in case they are also maintained as real portfolios.

See 3.14.2.2.1 *Viewing portfolio hierarchies* on page 113 for more information about portfolio structure.

2. In Portfolio Editor, for each top portfolio, select the currency in which the market values are to be saved in Performance Monitor in the **Base Currency** field in the upper part of the editor.

Usually, the base currency you select is based on your accounting needs. However, if the decision relates to a top level grouping portfolio for which accounting is not done (for example, a benchmark portfolio), then performance measurement is one of the main factors behind the decision.

The base currency of the top portfolio used in the Performance Data Calculation activity (see 13.2.2 *Generating historical market values for performance measurement* on page 404) determines in which currency the market values are saved. Market values are saved in the local (cashflow) currency and in the base currency.

3. In Portfolio Editor's **Switches** page, turn on the switches you need for each top portfolio as described in the following table:

Switch	Description
Calculate Cost-of-Carry	Switch on to trigger the Cost-of-Carry calculation for the portfolio.
Comparison	Switch on to allow the portfolio to be used as a benchmark in Performance Monitor. This switch defines the portfolio as a benchmark, enabling the <b>Portfolio Compare</b> key-figures to be correctly interpreted as actual results. For any other portfolio, the system displays the difference between the portfolios and the comparison portfolio, where:  Difference = Portfolio Key-Figure - Comparison Key-Figure  Note: You can only compare an index to a benchmark portfolio if they have different IDs. If you give the index the same ID as the benchmark portfolio, comparison will not be possible in Performance Monitor as only the benchmark portfolio will be available in the <b>Benchmark</b> selection list.
Trading Portfolio	Switch on to mark the portfolio as an active trading portfolio, where transactions can be created and for which Cost-of-Carry can be calculated.

4. Optionally, if the portfolio you are defining will be used in the trading of Futures, in Portfolio Editor's **Cost of Carry** page, select the cost of carry instrument you want to use. This instrument is used by the **Performance Data Calculation** activity to produce system-generated cost-of-carry balances adjusting the daily netting margins of the Futures. See A.55 *Performance Data Calculation* on page 650.
5. Save each portfolio definition using **File-Save**.

### 13.2.1.3 Setting up portfolio owners

To set up portfolio owners for performance measurement:

1. In Client Editor, for each portfolio owner used, make sure the account details and settlement instructions are correctly set up.

Note that the ability to display and save market values of bank account balances for performance measurement is dependent on the following:

- Cashflows from transactions are directed to the correct accounts for settlement (see *3.13.1.13 Setting up client settlement instructions* on page 100)
- Bank Account Balances are calculated (see *18.1.1.1 Setting up bank account balances and interest* on page 495).

2. Save each portfolio owner definition using **File-Save**.

### 13.2.1.4 Setting up currencies

To set up currencies for performance measurement:

- In Currency Editor, in the **Default Rates** page, add the type **Risk Free Rate** for each of the currencies used.

This is the risk-free rate used in performance attribution. This rate is the local currency risk-free rate of return (in the Karnosky-Singer attribution framework, it is called Local Cash Return). The rate set on the O/N period of the curve is used in multi-currency performance attribution.

### 13.2.1.5 Setting up cost-of-carry

Cost-of-carry is an essential part of performance measurement when bank accounts are shared across portfolios. The cost-of-carry balances are saved as separate transactions within each portfolio in question, calculated for each date, and are visible in Treasury Monitor and Performance Monitor, as well as certain Transaction Manager modes configured for this purpose.

In TRM, cost-of-carry related configuration is implemented in several editors and the calculation is triggered through the Cost-of-Carry activity. See *A.14 Cost of Carry* on page 632 for information on the activity parameters

Also see *12.1.7 Monitoring cost-of-carry positions* on page 390 for more information.

## 13.2.2 Generating historical market values for performance measurement

For Treasury Monitor (and elsewhere in TRM), the current market values of portfolios are not saved because they are constantly being updated in real-time. However, Performance Monitor is designed to measure the performance of a portfolio over time.

Therefore, before using an index in Performance Monitor, you must set up an activity to calculate and save the past daily market values for the portfolios. To calculate these market values, TRM uses historical rates, viewable from Rate Monitor, for the rates scenario you select for the activity.

- To set up TRM to generate historical market values, use the Performance Data Calculation activity (see *A.55 Performance Data Calculation* on page 650 for details on the activity parameters).

Because Performance Monitor works on a daily basis, you must set the interval for this activity (in Activity Manager's **Intervals** page) to one day. The **Due Date** you give for this activity determines the value date of the transactions that will be generated in the benchmark portfolio.

---

**Note:** Activities are set up and managed in Activity Manager: see *Chapter 6 Managing activities* on page 227 for more information.

---

### 13.2.2.1 Generating historical market values in a third currency

In Performance Monitor the saved Performance Data (Market Value) of a Portfolio is based on Treasury Monitor's market value calculation.

You can display these historical market values in a third currency in the Performance Monitor by running the *Performance Data Calculation* activity to save the Performance Monitor's market value in a currency other than the trading portfolio currency.

This activity saves the home currency market value (home currency is the currency to which you save your performance data) and the local market value as calculated by Treasury Monitor. Treasury Monitor's FX conversion from the transaction's Trading Currency into the chosen Figure Currency depends on the FX method set up at the instrument level (Instrument Editor - Base Valuation page).

Performance Monitor converts the home currency market values into the third currency by using the FX Spot Rate.

---

**Note:** Only one home currency market value is saved at a time. When you run the activity again, the previous market value is replaced with the new one.

---

For information about these conversions and calculations, see *TRM Instruments: Processing and Calculations Guide*.

### 13.2.3 Configuring Treasury Monitor for risk measurement

Treasury Monitor can be used to measure the risk levels of your portfolios, compared to those of benchmark portfolios: see *12.1.6 Using Treasury Monitor for risk measurement* on page 390.

## 13.3 Performance Monitor

The Performance Monitor application is used to measure the performance of your portfolios against an agreed index or benchmark portfolio.

The portfolio data that Performance Monitor uses is the market value for each instrument; this is automatically saved by the Performance Data Calculation activity (see *13.2.2 Generating historical market values for performance measurement* on page 404 for more information).

### 13.3.1 Performance Monitor menus

The following tables describe the menu items which are specific to Performance Monitor and any layout which is based on this application.

Other menu items which are common to all applications are described in *2.2.6 Using application menus* on page 34.

#### 13.3.1.1 File

Menu item	Description
Open Book	Opens an existing book with the possibility to define start and end dates.
Save Book	Saves any modifications made to the current book.
Save Book As	Saves a new book.
Close Book	Closes the current book.
Delete Book	Deletes the current book.
Book Properties	Opens the <b>Book Properties</b> dialog to allow you to view or modify the book's owner and user details. The owner is allowed to modify the book and the user or user group can use the book, but not modify its properties.
Print	Prints the information currently displayed in the page.
Recent Books	Allows you to quickly access the books that you have most recently used: a maximum of nine books can be listed.

### 13.3.1.2 Edit

Menu item	Description
Copy	Copies the values in the selected rows or columns. You can then paste the values into another application.
Copy Page	Copies the current page including headers. You can then paste the values into another application.
Select / Unselect All Cells	Selects or unselects all cells in the current page. You can then use <b>Edit - Copy</b> to paste the values into another application.

### 13.3.1.3 View

Menu item	Description
Select Columns Select Rows	Opens a multi-selection list to allow you to select the column or row groupings that you want to display. See <i>13.3.4.2 Selecting column and row groupings</i> on page 410 for information about the available values.
Swap Columns and Rows	Changes the display of the columns and rows: the columns become rows and the rows become columns.
Select Key-Figures	Opens a multi-selection list to enable you to select the key-figures you want to display. See <i>13.3.4.3 Selecting key-figures</i> on page 411 for more information.
Zoom In Zoom Out Zoom to Default	Allows you to zoom into the display (to enlarge the figures), zoom out (to see more of the grid), or zoom to default (to reset the original zoom).
Freeze Columns	Locks the selected column and all columns to the left of it. This allows you to scroll through the remaining columns, while the columns in the non-scrolled area remain visible.
Move Page Left	Moves the current page in the display to the left.
Move Page Right	Moves the current page in the display to the right.
Visual Settings	Changes the display: select from <b>Bold</b> , <b>Gray</b> , or <b>Color Totals</b> ; and <b>Blue</b> , <b>Gray</b> , or <b>Normal Headers</b> .

### 13.3.1.4 Page

Menu item	Description
New Grid Page	Inserts a new grid page with the default layout. A group of pages can be saved in a book using <b>File - Save Book As</b> .
New Chart Page	Inserts a new chart page with the default layout. A group of charts can be saved in a book using <b>File - Save Book As</b> .
Duplicate Page	Creates a new page with the same properties as the current page.
Copy Page From	Opens a list from which you can select a page you have already configured from one book to copy it into the current book.
Rename Page	Opens the <b>Set Page Name</b> dialog so you can rename the page.
Remove Page	Removes the current page from the book. You need to select <b>File - Save Book</b> for the removal to be taken into account.
Open XML Page	Displays a dialog to enable you to open a page that has been saved in an XML format.

Menu item	Description
Save Page as XML	Allows you to save the current page in an XML format.
Page Parameters	Displays the details for the current page, including parameters and the page layout (rows and columns).

### 13.3.1.5 Data

Menu item	Description
Scenario	Allows you to set the scenario of market rates (for example, default or frozen) you want to use to calculate the market value of your instruments.
Currency	Displays a drop-down list of figure currencies for the selected portfolios. Note: If the data has not been saved in either the portfolio base currency (default) or in the selected figure currency for a particular portfolio, the Performance Monitor will not display any values. See the <i>TRM Instruments: Processing and calculations</i> guide for more information on figure currency.
Portfolios	Allows you to select the portfolios you want to include. It is possible to select more than one portfolio from the same level in a portfolio hierarchy.
Benchmarks	Allows you to select the portfolio or index, which is to be used as a benchmark for performance measurement.
Riskfree Position	Allows you to select the interest rate, index, or portfolio which is to be considered at the risk-free position for performance measurement.
Dates	Allows you to specify the start and end date of the period you want to view. If you do not specify a date range, the performance key-figures are shown for the default period (the start of the year until yesterday).
Calendar	Allows you to select the calendar you want to use.
Gap Set	Allows you to select the gap set you want to use.
Exclude from Cash In/Outs...	Allows you to exclude instruments that have feature Performance, Cash In/Out attached to them. If you exclude an instrument, this feature is ignored. That is, the payments will have an effect on the return of the portfolio. See <i>TRM Instruments: Processing and Calculations Guide</i> .
Exclude Dividends	Allows you to specify whether you want to exclude dividends from the calculations. By default, all are included.
Exclude Cost-of-Carry	Allows you to specify whether the cost-of-carry is excluded from calculations. By default, it is included.
Exclude Fees	Allows you to specify whether fees are excluded from calculations. By default, they are included.

### 13.3.1.6 Calculation

Menu item	Description
Recalculate Recalculate Automatically	Recalculates the performance calculations.
Value Date Basis Trade Date Basis	Allows you to specify whether you want your calculations to be based on trade date basis or value date basis. See <i>13.1.1.2 Measurement methods</i> on page 400.

Menu item	Description
All Cash Basis	Allows you to specify whether you want your calculations to be based on an all cash basis. See <i>13.1.2.1 Actual basis and all cash basis</i> on page 401
Weight Factor 0 Weight Factor 1/2 Weight Factor 1	The weight factor indicates the proportion of the day the inter-day cashflows are assumed to have been in/out of the position. With $w=1$ , $w=1/2$ , or $w=0$ , all cashflows are assumed to happen at the beginning, middle, or end of the day. For example, if traders in general are informed about capital injections or withdrawals at the end of the day, it may be more realistic to have weight factor = 0. In this case, the performance for this day is calculated as follows: $[MV\ End + (0 - 1)*Cashflows] / [MV\ Start + 0*Cashflows] = (155 - 50) / 100 = 1.05$ TRM's weight factor calculations are based on modified Dietz returns, whereby a constant rate of return is assumed each day and each cashflow is weighed by the amount of time that it is held in the portfolio. Use one of the following options, depending on when you want TRM to assume that the cashflows occur: <ul style="list-style-type: none"> <li>• End of the day (available for 0 of the day)</li> <li>• Half the cashflows in the morning, and half the cashflows at the end of the day</li> <li>• Start of the day (available for the whole day).</li> </ul>
Index Scale Default Index Scale 100 Index Scale First	If you select indexes, you need to specify how they are to be scaled. For example, suppose that the Dow Jones is at 7900 - you can choose between: <ul style="list-style-type: none"> <li>• Keeping its value at 7900 against your portfolio's default value of 100 (<b>Index Scale Default</b>)</li> <li>• Scaling it to 100 to match your portfolio's default value of 100 (<b>Index Scale 100</b>)</li> <li>• Scaling your portfolio's value up to match the imported value giving, for example, 7900 for Dow Jones and 7900 for your portfolio's value (<b>Index Scale First</b>).</li> </ul>
Periodic Return Logarithmic Return	Allows you to specify whether rates of return are calculated as periodic rates or continuously compounded rates.
Daily Sampling Weekly Sampling Monthly Sampling Quarterly Sampling	Allows you to specify the frequency at which data is sampled to produce risk-adjusted return statistics. This frequency, combined with the sample count, gives the aggregation period for the calculations.
Select Sample Count	Allows you to specify the number of samples used to produce risk-adjusted return statistics. This number, combined with the sampling frequency, gives the aggregation period for the calculations.

### 13.3.2 Start-up parameters

It is possible to alter the start-up parameters so that Performance Monitor launches in a different mode.

See *C.6 Performance Monitor* on page 682 for information about the options available.

### 13.3.3 Configuring Performance Monitor

You can configure Performance Monitor according to your personal preferences by creating pages or groups of pages in books, by selecting the rows and columns you want to be displayed in each page, and by selecting the values or key-figures you want to monitor.

You insert a new page using **Page - New Grid Page** or **Page - New Chart Page**. You select the values you want to display in a page using **View - Select Columns**, **View - Select Rows**, and **View - Select Key-Figures**: see *13.3.4.2 Selecting column and row groupings* on page 410 and *13.3.4.3 Selecting key-figures* on page 411 for information about the available values.



You can create and save the pages in multiple books either for your own personal use, or to be shared by other users using **File - Save Book As**.

## 13.3.4 Monitoring performance in Performance Monitor

Using Performance Monitor, you can measure a portfolio's performance and compare it against index values and compositions.

### 13.3.4.1 Defining performance values

To define the values used to monitor the performance of a portfolio:

1. In Performance Monitor, define the period you want to monitor using **Data - Dates**.

If you open a book with more than one page, you must define the period for each page. If you do not define a period, the start of the year until yesterday is used as the default date range.

2. Configure the grid or chart pages by selecting the columns and rows according to how you want to group information in the monitor's page: see *13.3.4.2 Selecting column and row groupings* on page 410.
3. Select the key-figures for which you want to view the results: see *13.3.4.3 Selecting key-figures* on page 411.
4. For each page, select the data you want to use in the performance calculations from the **Data** menu (see *13.3.1.5 Data* on page 407):

- Select **Data - Scenario** to set the scenario of market rates.

Note that the scenario you select must be the same scenario defined for the Performance Data Calculation activity (see *13.2.2 Generating historical market values for performance measurement* on page 404).

- Select **Data - Portfolios** to select the portfolios you want to include.

It is possible to select more than one portfolio from the same level in a portfolio hierarchy.

- Select **Data - Benchmarks** to select the portfolio or index, which is to be used as a benchmark for performance measurement.

You can only compare an index to a benchmark portfolio if they have different IDs. If you have given an index the same ID as a benchmark portfolio, comparison will not be possible in Performance Monitor as only the benchmark portfolio will be available in the **Benchmark** selection list.

- Select **Data - Riskfree Position** to select the interest rate, index, or portfolio which is to be considered at the risk-free position for performance measurement.

If you want to use an interest rate as the risk-free position, enter the rate directly as a percentage in the dialog.

If you want to use a portfolio or index as the risk-free position, select the index or portfolio from the selection list.

- Select any other types of data you want to use in the calculations from the **Data** menu, such as **Calendar** and **Gap Set**.

5. Specify any data you want to exclude from the performance calculations using one of the **Data - Exclude** menu options: **Dividends**, **Cost of Carry**, or **Fees** (see *13.3.1.5 Data* on page 407).

6. Define the methods you want to use for the performance calculations from the **Calculation** menu.

- Select **Calculation - Value Date Basis** or **Calculation - Trade Date Basis** according to the method you want to use.
- Select **Calculation - All Cash Basis** if you want your calculations to be based on an all cash basis.
- Select the appropriate **Weight Factor** to define the proportion of the day that inter-day cashflows are assumed to have been in/out of the position.

- If indexes are used, specify how they are to be scaled using one of the **Index Scale** menu options.
- Specify the method used to calculate rates of return: **Periodic Return** or **Logarithmic Return**.
- Select one of the **Sampling** menu options to identify the frequency at which data is sampled to produce risk-adjusted return statistics.
- Select **Calculation - Select Sample Count** to define the number of samples used to produce risk-adjusted return statistics.

See 13.3.1.6 *Calculation* on page 407 for more information about the available methods.

7. Select **Calculation - Recalculate** or **Calculation - Recalculate Automatically** to calculate the performance measurement calculations.
8. Save the book and its parameters using **File - Save Book**.

### 13.3.4.2 Selecting column and row groupings

To define the values according to how you want to group information in the monitor's page, use **View - Select Columns** and **View - Select Rows**.

The following table describes the rows and columns that you can select in Performance Monitor. The order in which you select the values determines the order in which they are displayed:

Value	Groups information according to...
Benchmark	Benchmark portfolio, or index, against which you want to measure the performance of your portfolio.
Branch Code [0-19]	Branch code of the instrument or equity. Note: When grouping by Branch Code the Performance Monitor's behavior is consistent with Treasury Monitor: the Cost-of-Carry pending settlement cashflows are assigned to the corresponding instrument and inherit its branch code grouping.
Date	Daily results. You can also choose to view results per month (axis value <b>Month</b> ), per quarter (axis value <b>Quarter</b> ), or per year (axis value <b>Year</b> ).
Day of Month	Number of the day in the chosen month. If you select <b>Day of Month</b> , you should also select <b>Month</b> to see which month is being referred to in the display.
Instrument	Instrument transacted: <ul style="list-style-type: none"> <li>• For FX transactions, you see the position by currency pair</li> <li>• For equities, you see the position by equity.</li> </ul> <p>If you use this axis value to group at Instrument level, the cashflows are shown with respect to the instrument: positive flow means that we have bought more instruments whereas negative flow means that we have sold instruments.</p> <p>For example, consider futures that are fixed on a daily basis. If the daily P/L is positive, the fixing takes out money from the instrument; this is equivalent to selling and therefore the cashflow is negative.</p>
Instrument Currency Instrument Type Instrument Group Issuer Issuer Group	Currency, instrument type, instrument group, issuer and issuer group of the instrument transacted.

Value	Groups information according to...
Key-Figure	Key-figure. To see any key-figures at all, you must specify <b>Key-Figure</b> for either the X axis or the Y axis: this axis value adds, or removes, all the key-figures you have selected. For an explanation of the key-figures you can use, see <i>13.3.4.3 Selecting key-figures</i> on page 411.
Month	Monthly results. You can also choose to view results per day (axis value <b>Date</b> ), per quarter (axis value <b>Quarter</b> ) or per year (axis value <b>Year</b> ).
Owner	Owner of the portfolio or portfolios you have selected.
Package Type	Package type of the transaction if it has been assigned to a package.
Portfolio	Name of the portfolio or portfolios you have selected.
Quarter	Quarterly results. You can also choose to view results per day (axis value <b>Date</b> ), per month (axis value <b>Month</b> ), or per year (axis value <b>Year</b> ).
Security Identifier	Default Security Identifier. Allows you to do grouping by the default security identifier defined at the instrument-level.
Trading Portfolio	Names of the trading portfolios belonging to the portfolio or portfolios that you have selected.
Underlying Maturity Period	Period or gap into which the underlying's maturity date falls.
Year	Yearly results. You can also choose to view results per day (axis value <b>Date</b> ), per month (axis value <b>Month</b> ), or per quarter (axis value <b>Quarter</b> ).

### 13.3.4.3 Selecting key-figures

All the key-figures show results for the default period with which Performance Monitor opens (the start of the year until yesterday), unless you specify another period using **Data - Dates**, in which case the period you specify applies instead.

The results for the period are shown by time intervals of a day, month, quarter, or year, depending on whether you have selected **Date**, **Month**, **Quarter**, or **Year** as your axis grouping. For any of the key-figures to be displayed, either your columns or rows must contain the **Key-Figure** column or row grouping.

- To open the list of key-figures, select **View - Select Key Figures**.

---

**Note:** Performance measurement calculations and key-figures are described in detail in the guide *TRM Instruments: Processing and Calculations*.

---



Fund managers who are responsible for dynamic portfolios need to be able to monitor actual exposures in real-time and refocus management strategy based on changing market conditions and client demands.

Portfolio modeling in TRM enables fund managers to analyze, simulate, generate, and process deals to align portfolios to a model or a benchmark portfolio.

Fund managers create portfolio models as part of their research responsibilities. These models represent the best possible structure of a portfolio within any given mandate, risk profile, or regulatory constraint. They can be created using any combination of security or asset-mix target weights.

Once the models are in place, the fund manager's portfolios are linked to a model that has the same profile. Portfolio modeling is the process of managing these models and ensuring that each client portfolio is constantly adjusted to keep in line with its associated model when the factors having an impact on the model change.

## 14.1 Setting up portfolio modeling

You can set up several types of portfolio models, namely absolute (tactical allocation) or relative to a benchmark. In a relative portfolio model, the portfolio mirrors the relative weights of a benchmark index.

Portfolio Modeling Monitor is then used to analyze the portfolios' position in relation to the model and the target, and to display guideline breaches. You can rebalance a portfolio based on a benchmark or absolute model and manually make any adjustments.

See *14.2 Portfolio Modeling Monitor* on page 417 for more information.

Finally, you can realign the portfolio with the model by generating the necessary deals.

See *14.2.6 Generating deals* on page 427 for more information.

### 14.1.1 Characteristics of portfolios models

A model contains a set of characteristics:

- Type of Model (defined in Portfolio Model Editor)  
A model may be absolute or relative to a benchmark.
- Base Key Figure on which the rebalancing is based (defined in Portfolio Model Editor)  
The base key figures are: market value percentage, and position duration contribution and position effective duration contribution (for IR portfolios).
- Grouping definition (defined in Portfolio Modeling Monitor)  
The groupings are: Instrument Group, Branch Codes, Issuer, Underlying Maturity Period, Instrument Type, Currency, and Instrument.

- Target (defined in Portfolio Modeling Monitor)

Models can be set up with a target on different levels:

- A Target expressed as Absolute % either of the total or sub-total (Absolute model case).
- A Bet expressed as Relative % of the benchmark (Relative model case).

For example:

```
Benchmark = 10%
Target relative to the benchmark = +3%
Expected allocation result = 13%
```

See 14.2.3.5 *Defining Targets and Bets* on page 423.

- Minimum/Maximum % of Total or Sub-Total (defined in Portfolio Modeling Monitor)

- Minimum % of Total
- Minimum % of Sub Total
- Maximum % of Total
- Maximum % of Sub Total.

See 14.2.3.6 *Defining minimum/maximum % of total or sub-total* on page 423.

- Asymmetrical Global Tolerances on the target

You use tolerances to monitor if the position of the portfolio is within an interval defined around the target.

There are two types of tolerances that you can define: you can define the tolerances either as relative, or as absolute to the target. You define global tolerances in Portfolio Model Editor.

The maximum tolerance is applied when the position is higher than the target and the minimum tolerance is applied when the position is lower than the target.

In the following example, the minimum and maximum tolerances are defined as absolute:

Target	Type	Tolerance min	Tolerance max	Interval
10.00%	Absolute	-5%	+10%	[5%;20%]

In this example, the minimum and maximum tolerances are defined as relative:

Target	Type	Tolerance min	Tolerance max	Interval
10.00%	Relative	-5%	+10%	[9.5%;11%]

The line is highlighted in Portfolio Modeling Monitor if the position of the portfolio falls outside the interval.

- Asymmetrical Tolerances on the grouping level

You can add further asymmetrical tolerances on the grouping level in Portfolio Modeling Monitor.

## 14.1.2 Defining portfolio models

You define the main characteristics of a portfolio model in Portfolio Model Editor. This editor layout is based on the application Static Data Editor (see *3.2 Static Data Editor* on page 41 for more information).

To define the characteristics of a portfolio model:

1. In Portfolio Model Editor, fill in the fields in the upper part of the editor using the information in the following table:

Information	Description
ID Name	Unique ID and name for the portfolio model.
Base Key Figure	The base key figure on which the rebalancing will be based: <ul style="list-style-type: none"> <li>• Market Value Percentage</li> <li>• Position Duration Contribution (for IR instruments)</li> <li>• Position Effective Duration Contribution (for IR instruments).</li> </ul>
Security List	The security list to be used in the portfolio model. Security lists are defined in Portfolio Model Security List Editor (see <i>14.1.3 Defining portfolio model security lists</i> on page 416 for more details). You can open this editor by right-clicking in this field. Security lists are used to restrict the choice of securities in the rebalancing process: <ul style="list-style-type: none"> <li>• If you add a security list to the model, only securities in the list will be available for selection in the rebalancing process.</li> <li>• If no security list is added, then all securities will be available for selection in the rebalancing process.</li> </ul> See <i>14.2.5.1 Adding a security</i> on page 425.

2. In the **Switches** page, turn on the switches using the information in the following table:

Information	Description
Include Cash	Switch on if you want to take the cash bucket into account in the rebalancing.
Relative	Switch on if the model is relative to a benchmark.

3. In the **Tolerances** page, specify the global tolerances for the portfolio model: you can define either absolute or relative minimum and maximum tolerances.

You can set up a model with a target on different levels. The global tolerance defined here monitors if the portfolio position is within an interval defined around that target. The position is then displayed in Portfolio Modeling Monitor.

Information	Description
Minimum Tolerance Maximum Tolerance	The minimum and maximum absolute tolerance of the portfolio position to be used in Portfolio Modeling Monitor. These are expressed as a percentage.
Minimum Relative Tolerance Maximum Relative Tolerance	The minimum and maximum relative tolerance of the portfolio position to be used in Portfolio Modeling Monitor. These are expressed as a percentage.

4. Save the portfolio model, using **File - Save as New**.

---

**Note:** In Portfolio Modeling Monitor, you can specify the target and minimum and maximum tolerances on a grouping level. You can also further define the portfolio model by adding more values (asymmetrical tolerances), or even manually adjust the values you previously set up for the model in Portfolio Model Editor.

---

### 14.1.3 Defining portfolio model security lists

In TRM, a security list is a list of tradable securities that you can use in the rebalancing of a portfolio.

You define the security list in Portfolio Model Security List Editor. This editor layout is based on the application Static Data Editor (see 3.2 *Static Data Editor* on page 41 for more information).

You link the security list to your model by selecting the required list from the **Security List** field in Portfolio Model Editor. Security lists are used when you add new instruments to the model in Portfolio Modeling Monitor and as a suggestion list when you are rebalancing a portfolio with a position shortage.

To create a security list:

1. In Portfolio Model Security List Editor, enter a unique ID and name for the security list in the upper part of the editor.
2. In the **Security List** page, select a security you want to include in the list.

Note that only instruments that include the **Quoted** feature in their instrument definition are available for selection.

3. Click **Add**.

You can remove a security from the list by selecting it, and clicking **Remove**.

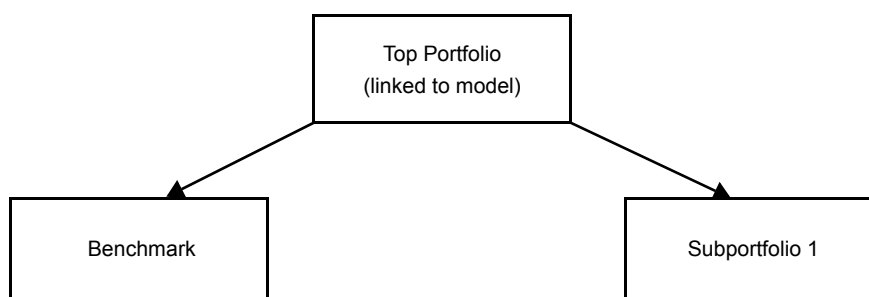
4. Repeat the procedure to add more securities to the list as required.
5. Save the security list, using **File - Save As New**.

### 14.1.4 Applying a portfolio model or benchmark to a portfolio

Portfolios can be compiled into hierarchies: the portfolio at the top of the hierarchy is referred to as the top portfolio, and any lower ones belonging to the top portfolio are known as the subportfolios. The top portfolio may also contain the benchmark portfolio (if needed).

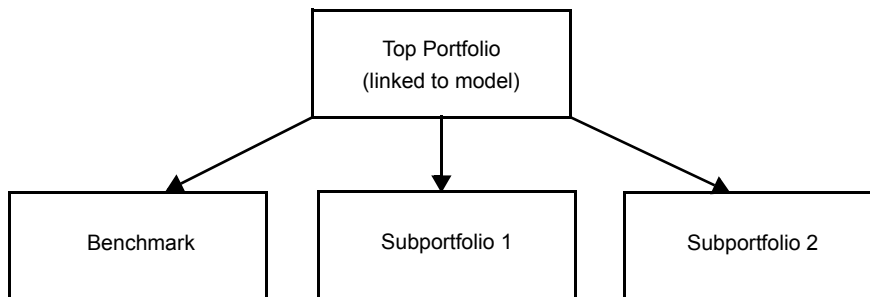
See 3.14.2.2 *Creating portfolio hierarchies* on page 113 for more information.

The following examples show how the portfolio hierarchy may be configured, depending on the type of rebalancing.



**Example 1:** Simple rebalancing with only one subportfolio





**Example 2:** Multiple rebalancing with two subportfolios and the same

The portfolio model needs to be applied to the top portfolio that contains the subportfolio, or set of subportfolios, that you want to model. The benchmark used for the rebalancing of the portfolio also needs to be applied to the top portfolio definition.

A portfolio may act as a subportfolio in one hierarchy, and exist in another hierarchy where it is used as a benchmark. You define which subportfolio will be the benchmark in the specific hierarchy during the set up of the top portfolio.

To apply a portfolio model or benchmark to a top portfolio:

1. In Portfolio Editor, select the portfolio to which you want to apply the model or benchmark.
2. In Portfolio Editor's **Properties** page, define and add the properties and values you want using the information in the following table:

Property	Value
MODEL	The portfolio model you want to apply to a top portfolio.
MODELING-BENCHMARK	The benchmark portfolio you want to use for the rebalancing of the portfolio.

3. Save the portfolio definition using **File - Save**.

## 14.2 Portfolio Modeling Monitor

Portfolio Modeling Monitor enables the real-time calculation of equities, market value percentage distribution, interest rate duration contribution, and other related figures that are important for portfolio managers.

Portfolio Modeling Monitor can be used to further define the portfolio models that have been set up, as follows:

- On different levels based on attributes (such as, Instrument Group, Branch Code, Underlying Maturity Period, or Currency)
- By adding more values (asymmetrical tolerances)
- By manually adjusting the values previously set up for the model.

Portfolio Modeling Monitor is then used to analyze the portfolios' position in relation to the model and the target, and to display guideline breaches.

It is also possible to do "what if?" scenarios, different kinds of rebalancing based on a benchmark or model, and manually make any adjustments.

Finally, you can realign the portfolio with the model by generating the necessary deals.

## 14.2.1 Portfolio Modeling Monitor menus

The following tables describe the menu items which are specific to Portfolio Modeling Monitor and any layout which is based on this application.

Other menu items which are common to all applications are described in *2.2.6 Using application menus* on page 34.

### 14.2.1.1 File

Menu item	Description
Set Default Date	Displays the <b>Set Default Date</b> dialog in which you can specify the book you want to display in the monitor, and the date you want displayed.  All pages in the book that have the <b>Use Default Date</b> switch turned on will use this date: see <i>14.2.3.1 Starting Portfolio Modeling Monitor</i> on page 421 and <i>14.2.3.2 Loading pages and books</i> on page 421 for more information.
Open Book	Opens an existing book.
Save Book	Saves any modifications made to the current book.
Save Book As	Opens the <b>Save As</b> dialog so you can save the displayed pages as a new book. Enter the following information: <ul style="list-style-type: none"> <li>• <b>Book Name</b> - name for the book.</li> <li>• <b>Owner</b> - user or user group that can modify the book.</li> <li>• <b>User(s)</b> - user or user group that can use the book.</li> </ul>
Close Book	Closes the current book.
Delete Book	Deletes the current book.
Book Properties	Opens the <b>Book Properties</b> dialog so you can view or modify the book's owner and user details.  The owner is allowed to modify the book and the user or user group can use the book, but not modify its properties.
Print	Prints the information currently displayed in the page.

### 14.2.1.2 Edit

Menu item	Description
Copy	Copies the values in the selected rows or columns. You can then paste the values into another application.
Paste	Pastes values you have copied into the selected rows or columns.
Copy Page	Copies the current page including headers. You can then paste the values into another application.
Select / Unselect All	Selects or unselects all cells in the current page. You can then use <b>Edit - Copy</b> to paste the values into another application.

### 14.2.1.3 View

Menu item	Description
Select Columns Select Rows	Opens a multi-selection list so you can select the column or row groupings that you want to display.  See <i>14.2.3.3 Defining column configurations</i> on page 422.

Menu item	Description
Select Portfolio Key-Figures	Opens a multi-selection list so you can select the key-figures that you want to display. See <i>14.2.3.3 Defining column configurations</i> on page 422.
Zoom In Zoom Out Zoom to Default	Allows you to zoom in to the display (to enlarge the figures), zoom out (to see more of the page), or zoom to default (to reset the original zoom).
Freeze Columns	Locks the selected columns and all columns to the left of it. This allows you to scroll through the remaining columns, while the columns in the non-scrolled area remain visible.
Move Page Left Move Page Right	Moves the current page in the display to the left or right.
Visual Settings	Changes the display; select from: <ul style="list-style-type: none"> <li>• <b>White, Gray, or Color Totals</b></li> <li>• <b>Normal, Gray, or Color Headers</b></li> <li>• <b>Show Tooltips</b></li> <li>• <b>Show Disabled Lines.</b></li> </ul>

#### 14.2.1.4 Page

Menu item	Description
New Page	Inserts a new page. A group of pages can be saved in a book using <b>File - Save Book As</b> .
Duplicate Page	Creates a new page with the same properties as the current page.
Copy Page From	Opens a list from which you can select a page you have already configured from one book to copy it into the current book.
Rename Page	Opens the <b>Set Page Name</b> dialog so you can rename the page.
Remove Page	Removes the current page from the book. You need to select <b>File - Save Book</b> for the removal to be taken into account.
Portfolio Model Parameters	Displays the <b>Portfolio Model Parameters</b> dialog. See <i>14.2.3.2 Loading pages and books</i> on page 421 for more information.
Show Parameters	Displays the parameters as defined in the <b>Portfolio Model Parameters</b> dialog.

#### 14.2.1.5 Model

Menu item	Description
Save Model	Saves the model.
Reload Model	Reloads the model.
Analysis	Shows the deviation or breaches of the portfolio from the model. Select from: <ul style="list-style-type: none"> <li>• <b>Position Analysis</b> - to view the current position.</li> <li>• <b>Simulation Analysis</b> - to view the position after rebalancing.</li> </ul> See <i>14.2.4 Analyzing positions in Portfolio Modeling Monitor</i> on page 423 for more information.
View Analysis Summary	Displays a dialog that shows the reason for each breach. See <i>14.2.4.1 Breaching the model</i> on page 423 for more information.

### 14.2.1.6 Rebalancing

Menu item	Description
Select Security List	<p>Opens a multi-selection list to allow you to select a security in the case of a position shortage. The securities available for selection depend on the portfolio model setup (see <i>14.1.2 Defining portfolio models</i> on page 415):</p> <ul style="list-style-type: none"> <li>• If a security list has been applied to the model, only securities within that list are available for selection.</li> <li>• If no security list is applied to the model, all securities in the system are available for selection.</li> </ul> <p>See <i>14.2.5.1 Adding a security</i> on page 425.</p>
Options	<p>Allows you to set further parameters:</p> <ul style="list-style-type: none"> <li>• <b>Keep Input Values</b></li> <li>• <b>No Overdraft.</b></li> </ul> <p>See <i>14.2.5.2 Rebalancing options</i> on page 425.</p>
Distribution Methods	<p>Allows you to select the distribution method you want to use.</p> <p>See <i>14.2.5.3 Distribution methods</i> on page 425 for more information.</p>
Reset	<p>Allows you to reset the relative cells if there are errors in the rebalancing.</p> <p>See <i>14.2.5.5.2 Rebalancing errors</i> on page 427 for more information.</p>
Rebalance	<p>Rebalances all of the holdings in the portfolio in the rebalancing process.</p> <p>See <i>14.2.5.5 Launching rebalancing</i> on page 426.</p>
Invest	<p>Allows you to specify that any extra cash is rebalanced on the portfolio composition.</p> <p>See <i>14.2.5.4 Investing extra cash</i> on page 426</p>
Generate Deals	<p>Displays the Generated Deals mode of Transaction Manager to allow you to apply and process any deals generated from the rebalancing process.</p> <p>See <i>14.2.6 Generating deals</i> on page 427.</p>

### 14.2.1.7 Update

Menu item	Description
Update Now Realtime Update	<p>Allows you to update the displayed values according to market information.</p>

### 14.2.1.8 Tools

Menu item	Description
Portfolio Model Editor	<p>Opens Portfolio Model Editor.</p> <p>See <i>14.1.2 Defining portfolio models</i> on page 415.</p>
Portfolio Model Security List Editor	<p>Opens Portfolio Model Security List Editor.</p> <p>See <i>14.1.3 Defining portfolio model security lists</i> on page 416.</p>

## 14.2.2 Start-up parameters

It is possible to alter the start-up parameters so that Portfolio Modeling Monitor launches in a different mode.

See *C.7 Portfolio Modeling Monitor* on page 683 for information about the options available.

## 14.2.3 Configuring Portfolio Modeling Monitor

You can configure Portfolio Modeling Monitor according to your personal preferences by creating pages or groups of pages in books, by selecting the rows and columns you want to be displayed in each page, and by selecting the values or key-figures you want to monitor.

You insert a new page using **Page - New Page** and select the values you want to display in a page using **View - Select Columns**, **View - Select Rows**, and **View - Select Key-Figures**.

You can create and save the pages in books either for your own personal use, or to be shared by other users using **File - Save Book As**.

### 14.2.3.1 Starting Portfolio Modeling Monitor

When Portfolio Modeling Monitor is opened, the **Set Default Date** dialog is displayed.

- Select the book you want to load, and the date you want it loaded with.

All the pages (portfolio positions) are loaded with the same date, known as the Default Date (except pages that have been created with a specific date).

### 14.2.3.2 Loading pages and books

As in other TRM monitors, Portfolio Modeling Monitor uses the concept of books and pages. In this monitor, each page is relative to one top portfolio. It contains the position of the subportfolios and the model linked to the top portfolio.

To load a page:

1. Select **Page - New Page**.
2. In the **Portfolio Model Parameters** dialog, fill in the fields using the information in the following table:

Information	Description
Portfolio	Top portfolio that contains the portfolio hierarchy that you want to model. See <i>14.1.4 Applying a portfolio model or benchmark to a portfolio</i> on page 416.
Transaction State	Minimum state that the transactions must have reached to be included in the analysis.
Scenario	Market information scenario.
Figure Currency	Currency in which you want the results displayed.
Date	Date of the analysis. Note that if you enter a date in this field, the date of the page will be fixed, that is, you will always monitor this page on this date. By default, the date of the analysis is set to the Default Date. This field only becomes available if the <b>Use Default Date</b> switch (see below) is not selected.
Result Mode	Result mode (accounting standard): FO/MO, FAS, IFRS, or Local.
State Context	Value specifying whether certain transaction types are to be included in the position: <ul style="list-style-type: none"> <li>• Default - no cost-of-carry or collateral transactions.</li> <li>• W/Cost-of-Carry - cost-of-carry transactions.</li> <li>• W/Collateral - collateral transactions. These transactions are generated from repo transactions.</li> <li>• W/Cost-of-Carry/Collateral - both cost-of-carry and collateral transactions.</li> <li>• W/Cost-of-Carry/Order - both cost-of-carry and order transactions.</li> <li>• W/Order - order transactions.</li> </ul> Note: W/Cost-of-Carry can only be selected for portfolios which have the <b>Cost-of-Carry</b> switch turned on: see <i>12.1.7 Monitoring cost-of-carry positions</i> on page 390 for more information.

Information	Description
Use Default Date	Switch on if you are using the Default Date for this new page. If this switch is not selected, then you have to specify a date in the <b>Date</b> field. This date is saved with the page.
Analysis Page	By default, the page displays the groupings defined in the model. Using this switch allows you to use different sets of groupings and save them with the page. If this switch is on you can: <ul style="list-style-type: none"> <li>• Define or save a page with groupings that differ from the ones defined in the model</li> <li>• Save some values relative to this new grouping in your model.</li> </ul> Note: Deal generation is not possible from an Analysis page.

3. Click **OK**.

### 14.2.3.3 Defining column configurations

You select the columns you want to display in the main part of the monitor view, using **View - Select Columns**. The available columns are: **Adjust**, **Benchmark**, **Model**, **Portfolio**, and **Summary**.

You can further configure each column by selecting the key-figures you want to monitor under each section. The available key-figure values change according to the column.

To configure the columns:

1. Select the columns you want to configure using **View - Select Columns**.
2. Right-click a column on the right side of the selection list and select **Configure Values**.
3. In the **Select Key-Figures** multi-selection list, select the key-figures you want to display under the column header.

Note that the menu item changes according to the section you are configuring: if you are configuring the **Benchmark** column, the menu will show **Select Benchmark Key-Figures**.

4. Click **OK**.

You can also configure a column by right-clicking the column header in the display and selecting the corresponding **Select Key-Figures** menu item.

In both cases, you can further configure the selected key-figures, as follows:

1. Right-click the selected key-figure on the right side of the key-figure selection list.
2. Select **Configure Parameters**.
3. In the **Parameters** dialog, set values in the **Precision** and **Divider** fields.

The values you set here are taken into account when the key-figure is displayed in the monitor.

4. Click **OK**.

You can also select and configure the key-figures you want to display under the **Portfolio** column grouping using **View - Select Portfolios Key Figures**.

### 14.2.3.4 Defining security groupings

You can define security groupings in Portfolio Modeling Monitor. These groupings determine how the list of securities you select for the portfolio model are displayed on the left side of the monitor.

For example, you can group the list by **Instrument Group** or by **Currency**. Other available groupings are: **Branch Codes**, **Issuer**, and **Underlying Maturity Period**.

To define security groupings:

- Select the groupings you want using **View - Select Rows**.

### 14.2.3.5 Defining Targets and Bets

You can set up a model with a target or bet (model relative to a benchmark) on different levels. You define the target or bet in the Model section of Portfolio Modeling Monitor.

To define targets or bets:

1. Right-click on the header of the Model section.
2. Select **Select Model Key-Figures** from the menu.
3. Select **Target** or **Bet** from the list of available key-figures in the multi-selection list.
4. Click **OK**.

In the **Target** or **Bet** column of Portfolio Modeling Monitor you can manually enter or alter targets and bets for your cash and position.

### 14.2.3.6 Defining minimum/maximum % of total or sub-total

To define the minimum or maximum % for the total or sub-total:

1. Right-click on the header of the Model section.
2. Select **Minimum Total**, **Minimum Sub Total**, **Maximum Total**, or **Maximum Sub-Total** from the list of available key-figures in the multi-selection list.
3. Click **OK**.

In the **Minimum Total**, **Minimum Sub Total**, **Maximum Total**, and **Maximum Sub-Total** columns, you can manually enter or alter the maximum and minimum values for your cash and position.

### 14.2.3.7 Defining asymmetrical tolerances

To define asymmetrical tolerances:

1. Right-click on the header of the Model section.
2. Select **Minimum Tolerance**, **Minimum Relative Tolerance**, **Maximum Tolerance**, or **Maximum Relative Tolerance** from the list of available key-figures in the multi-selection list.
3. Click **OK**.

In the **Minimum Tolerance**, **Minimum Relative Tolerance**, **Maximum Tolerance**, and **Maximum Relative Tolerance** columns, you can manually enter or alter the maximum and minimum values for your cash and position.

## 14.2.4 Analyzing positions in Portfolio Modeling Monitor

Portfolio Modeling Monitor shows the deviation or breaches of the current position of the portfolio from the model (minimum, maximum and tolerances).

To turn this on:

- Select **Model - Analysis - Position Analysis**.

This analysis can also be done on the position after rebalancing.

To turn this on:

- Select **Model - Analysis - Simulation Analysis**.

The analysis set up is saved with the book.

### 14.2.4.1 Breaching the model

When the current position breaches the model, different colors are used to display the breaches: breaches to Global Tolerances and Tolerances are displayed in yellow, breaches to Min Total, Min Subtotal, Max Total and Max Subtotal are displayed in red.

If all of the guidelines are broken, then the highest priority color is displayed, based on the following priority order:

- Min/Max in Total
- Min/Max in Sub Total
- Min/Max Absolute Tolerance
- Min/Max Relative Tolerance
- Min/Max Global Absolute Tolerance
- Min/Max Global Relative Tolerance.

You can place your cursor on a breach to display its content.

To see a list of these warnings:

- Select **Model - View Analysis Summary**.

The resulting dialog shows the reason for each breach.

#### 14.2.4.2 Example of a model setup

Here is an example of a model setup. If the portfolio (position) is breaching a guideline, the line is highlighted.

	Position total	Position sub total	Minimum total	Minimum sub total	Target	Tolerance maximum	Maximum sub total	Maximum total
Sector 1	90.00%	90.00%	80.00%		80.00%	5% <sup>1</sup>		
Instrument 1	45.00%	50.00%	40.00%		50.00%			50.00%
Instrument 2	27.00%	30.00%		10.00%	15.00%	10% <sup>2</sup>	28.00% <sup>3</sup>	
Instrument 3	18.00%	20.00%	10.00%		15.00%			40.00%
Sector 2	10.00%	10.00%	15.00% <sup>4</sup>		20.00%			30.00%
Instrument 1	8.00%	80.00%		40.00%	15.00%		60.00%	
Instrument 2	2.00%	20.00%			5.00%			

<sup>1</sup> Tolerance Max broken: 80% (Target) + 5% (Tolerance Max) = 85% but the position = 90%

<sup>2</sup> Tolerance Max Relative broken: 15% (Target) \* 10% (Tolerance Min Relative) = 1.5%, 1 6.5% < 27% (Position Total)

<sup>3</sup> Maximum Sub Total broken: 28% but the position in Sub Total = 30%

<sup>4</sup> Minimum Total broken: 15% but the position in Total = 10%

#### 14.2.5 Rebalancing

The rebalancing tool can adjust one or more portfolios or funds to target weights defined as models. The model can be absolute, the definition of a tactical allocation, or relative to a benchmark.

- If the model is defined as absolute, the calculations are based on the allocation defined in the **Target** column.
- If the model is defined as relative, the calculations are based on the allocation of the benchmark and the Bet defined in the model.



The columns under the Adjust column section are used for rebalancing; the **Adjust Value** column is used for Absolute, and the **Relative Adjust Value** is used for Relative. You can use these columns to enter any manual adjustments that you want to make.

- If you do not enter anything in the Adjust section, the model is used as the target allocation for the rebalancing.
- If you do specify a value in the Adjust section then the system ignores the model and used this value for the rebalancing.

### 14.2.5.1 Adding a security

Security lists are used when you add new instruments to the model in Portfolio Modeling Monitor. They can be used as a suggestion list when you are rebalancing a portfolio with a position shortage.

Security lists are defined in Portfolio Model Security List Editor: see *14.1.3 Defining portfolio model security lists* on page 416.

To select a list in the case of a position shortage:

**1. Select Rebalancing - Select Security List.**

**2. Select the securities you want from the list.**

Note that if a security list is applied to a portfolio model, only the securities belonging to the list will be available for selection (see *14.1.2 Defining portfolio models* on page 415).

**3. Click OK.**

### 14.2.5.2 Rebalancing options

You can further define the rebalancing process, as follows:

- **Keep Input Values**

If this option is selected, the rebalancing keeps the existing input values in the **Adjust** column.

- **No Overdraft**

If this option is selected, over-investment is avoided (that is, investing more than indicated) as a result of rounding.

Cash is not impacted when rounding of the rebalancing results in an increase in the investment. In consequence, the last displayed instrument in the position is the one affected (adjusted downwards).

### 14.2.5.3 Distribution methods

The aim is to keep a position of 100% and to follow the model distribution. You first need to decide which distribution method you want to use.

There are two methods available:

- Even Proportional
- Even Relative Bet.

You specify the distribution method you want to use from the **Rebalancing - Distribution Methods** menu item.

### 14.2.5.3.1 Even proportional bet

For example:

	Model	Adjust	Suggested allocation
Sector 1	10.00%	20.00%	20.00%
Sector 2	45.00%		40.00%
Sector 3	15.00%		13.33%
Sector 4	30.00%		26.67%
Total	100.00	20.00	100.00

The % in Sector 1 was changed, the other % was removed from the model, and **Even Proportional** was chosen as the rebalancing method. The system suggests the remaining weights using the Even Proportional Bet method.

It redistributes the rest according to the model distribution (that is,  $40 = 45 * 80 / 90$ ).

### 14.2.5.3.2 Even relative bet

For example:

	Model	Bet	Adjust	Suggested allocation
Sector 1	10.00%	10.00	20.00%	20.00%
Sector 2	45.00%	-3.33		41.67%
Sector 3	15.00%	-3.33		11.67%
Sector 4	30.00%	-3.33		26.67%
Total	100.00	0.00	20.00	100.00

The % in Sector 1 was changed, the other % was removed from the model, and **Even Relative Bet** was chosen as the rebalancing method. The system suggests the remaining weights using the Even Relative Bet method.

It redistributes the rest to keep the same bet and according to the model distribution (that is,  $41.67 = 45 + (-3.33)$ ).

### 14.2.5.4 Investing extra cash

If you select **Rebalancing - Invest**, any extra cash is rebalanced on the existing portfolio composition.

### 14.2.5.5 Launching rebalancing

To launch the rebalancing process from Portfolio Modeling Monitor:

1. Select a rebalancing distribution method: **Even Proportional Bet** or **Even Relative Bet**.  
See 14.2.5.3 *Distribution methods* on page 425 for more information.
2. Select **Rebalancing - Rebalance** if you want to rebalance all of the holdings in the portfolio.
3. Select **Rebalancing - Generate Deals** to generate orders in Transaction Manager.  
See 14.2.6 *Generating deals* on page 427.

#### 14.2.5.5.1 Partial rebalancing

You can also do partial rebalancing. For this, you need to deselect the parts of the portfolio that you do not want to rebalance:

1. Select the row or rows that you want to exclude from the rebalancing process:
  - Double-click a single row you want to exclude.  
The row is grayed out and excluded from the rebalancing.
  - Select the row or rows that you want to exclude, right-click and select **Exclude from Rebalance**.
2. Select **Rebalancing - Rebalance** to do the partial rebalancing.

The system displays a list of suggestions according to the reference. Depending on the key-figure on which the rebalancing is based (market value percentage, position duration contribution), the relative generated and rebalanced figures are calculated. You can alter the generated units (EQ case) or nominal amount (IR case) per portfolio if you wish.

To re-include an excluded row in the rebalancing:

- Select the row or rows that you want to re-include, right-click and select **Include in Rebalancing**.

#### 14.2.5.5.2 Rebalancing errors

Some errors may occur when you launch the rebalancing function. The relative cells in the Adjust section are marked.

You can rebalance any errors using the **Rebalancing - Reset** menu options, or by right-clicking the cell and selecting the appropriate item from the menu:

- **Adjust to Target**
- **Rebalance Values**
- **All**.

#### 14.2.5.6 Automatic portfolio rebalancing

Rebalancing of a portfolio can be set up to occur automatically on a daily basis or on a specific date using the Portfolio Modeling Processing activity.

- To set up the activity see *A.56 Portfolio Modeling Processing* on page 650 for details of the activity's parameters.

---

**Note:** Activities are set up and managed in Activity Manager: see *Chapter 6 Managing activities* on page 227 for more information.

---

### 14.2.6 Generating deals

As soon as you have identified the orders that you want to generate, you can launch the deal generation by selecting **Rebalancing - Generate Deals**.

The Generated Deals mode of Transaction Manager opens and displays the list of generated deals. The deals automatically contain the following information:

Column	Description
Instrument	ID of the instrument.
Portfolio	ID of the rebalanced portfolio.
Trading Units	Number of generated units. This is only displayed for equities.
Nominal Amount	Generated nominal amount.
Deal Price	Deal price of the instrument.

Column	Description
Deal Rate	Deal rate (IR) of the instrument.
Opening Date	Date of rebalancing.
Closing Date	Date after which the transaction is considered closed.
Value Date	Opening Date + Spot Days (instrument).
Currency	Currency of the portfolio model.
Issuer	Organization that is the issuer of sellable instruments. For non-sellable instruments this can be the portfolio-owner or the counterparty.
Counterparty	Counterparty to use for the deal. If no counterparty is specified, <b>Counterparty</b> = Anon.

The orders generated by the portfolio modeling process can be modified if necessary. They are given a transaction number when they have been applied. The deals can then follow the usual transaction process flow: see *Chapter 8 Managing transactions* on page 257.

TRM provides a specific benchmarking application called Benchmark Manager, which using static data, allows you to define and process benchmark revisions and rebalancing. There is a clear distinction between a composite index and a benchmark. While an index is defined in the market place, by index providers (Dow Jones, MSCI, and so on), a benchmark is typically a user-specific structure defined down to the security level and adjusted to your investment guidelines. You can use benchmarks to measure the performance over time (in Performance Monitor), or in real-time (in Treasury Monitor), of another portfolio. You can compare any of your portfolios's key-figures against those in the benchmark portfolio. Benchmark portfolios offer a much finer level of analysis than a simple index figure, where you only know that you were above or below the index by  $n$  points or  $n\%$ .

You can use instruments derived from the following instrument classes for benchmarks: ABS, BOND, CONVERTIBLE-BOND, CREDIT-STEP-UP, DISCOUNT, EQUITY, INDEX, INDEX-LINKED-BONDS. For more information about these instruments, refer to the *TRM Instruments: Processing and Calculations* guide.

## 15.1 About benchmarks

Benchmark management consists of two main steps: benchmark definition and benchmark processing, i.e. what you need to do during the life of the benchmark. Benchmark definition involves setting up dedicated portfolios in Portfolio Editor and defining the benchmarks in Benchmark Manager. Benchmark processing refers to the actions you can perform after the initial definition of your benchmark, such as:

- Revise the benchmark, i.e. re-define the composition of a benchmark for a given date by adding/removing components. The revision usually depends on irregular economic review and decision on the structure of the components.
- Rebalance the benchmark i.e. periodically adjust the benchmark to initial weightings by changing the units of the components. Rebalancing is usually automated by scheduling a Benchmark Rebalancing activity.
- Define cash processing and re-investment methods.
- Manually adjust the benchmark by adding/removing transactions.
- Query, close, monitor, and delete benchmarks.

### 15.1.1 Components

You can build benchmarks from transactions generated from one or a combination of the following components depending on the selected method:

- Securities
- Security Baskets. A set of securities can be defined in Security Basket Editor (see 3.42 *Security Basket Editor (optional)* on page 152).
- Indexes
- Derived Indexes.

## 15.1.2 Definition Methods

The benchmark definition is based on different Definition Methods:

- **Nominal amount and units:** Defines the benchmark's components in terms of their nominal amount (IR) and units (for equities). This method can only be used on single securities, i.e. not security baskets.
- **Market value percentage:** Depends on the selected component.
  - **Single Security:** Benchmark Manager ensures that the Market Value (MV) of the security is equal to the % of the benchmark MV defined for this security.
  - **Security Baskets:** When a set of securities is assigned to a benchmark (or to a group of the position axis), all the components (or the ones belonging to the group) are assigned to the benchmark with even market value in order to fulfill the objective percentage (% of the group , % of the set).
  - **Index with **Expand Index on Individual Securities**:** Benchmark Manager selects the components of the index and generate transactions on those components so that the relative weightings of the components are the same as in the index composition and that the total weighting correspond to benchmark definition.
  - **Index without **Expand Index on Individual Securities**:** Benchmark Manager values the index as a single instrument.
- **Duration:** You can only use duration targets with single securities and sets of securities (baskets):
  - **Single securities:** Based on the duration contribution defined for the security, Benchmark Manager computes the number of units needed to reach that target.
  - **Security Baskets:** Based on the duration contribution and weight target defined for the set of securities, Benchmark Manager distributes the market value among the securities as well as possible to reach that target.

## 15.1.3 Re-Investment Methods

As well as these definition methods, benchmark definition uses your choice of Re-investment Methods whenever cash (coupon, dividend, and so on) is detached from your benchmark:

- **Withdraw Cash:** The cash is withdrawn from the benchmark. You need to run the activity Benchmark Cash Processing to withdraw the cash. See *15.1.4 Activities* on page 430.
- **Re-invest Cash on Security:** The cash is immediately re-invested on the security where the detachment took place.
- **Re-invest Cash When Rebalancing:** The cash is re-invested only at the time of the next rebalancing. You need to run the activity Cost of Carry if you want to keep the cash bucket until the next rebalancing.
- **Hold Cash:** The cash is left in the benchmark without being re-invested. You need to run the activity Cost of Carry if you want to keep a (growing) cash bucket in the benchmark.

For more information about the activity Cost of Carry, see *A.14 Cost of Carry* on page 632.

## 15.1.4 Activities

TRM also provides the possibility to automate the benchmark processes by setting up rebalancing schedules (daily, weekly, monthly, and so on), and corresponding activities:

- **Benchmark Cash Processing:** see *A.3 Benchmark Cash Processing* on page 628.
- **Benchmark Rebalancing:** see *A.4 Benchmark Rebalancing* on page 628.

These two benchmark activities are described in more detail in section *15.4 Processing benchmarks* on page 443. For more information about activities in general, see *Chapter 6 Managing activities* on page 227.

## 15.2 Benchmark Manager

The Benchmark Manager is based on the Manager application layout (see *1.4.3 Managers and Boards* on page 26). Other menu items common to all applications are described in *2.2.6 Using application menus* on page 34.

### 15.2.1 Benchmark Manager menus

The following tables describe the menu items which are specific to Benchmark Manager.

#### 15.2.1.1 View

This section describes the various views that are available in the **View** menu. In addition to these views, there is also the **Transaction** view, which is always displayed. This view shows the selected benchmarks. You use this view to perform specific actions on the whole benchmark definition, such as, create initial revision settings, add new revisions, and close and delete benchmarks.

For more information about the types of actions you can perform in the specific views, see *15.2.2 Actions* on page 432.

Menu item	Description
Benchmark Query	Displays the <b>Benchmark Query</b> view. Shows the query criteria. Use this view to retrieve benchmarks that are already in TRM for further processing. You can use the following criteria to retrieve benchmarks: Benchmark, Currency, Domain, Name, and/or Owner.
Revision	Displays the <b>Revision</b> view. Shows the revisions (initial, next, future) that belong to the benchmark. Use this view to add new revisions to the benchmark definition.
Rebalance	Displays the <b>Rebalance</b> view. Shows rebalancing current and future dates for the selected revision. Use this view to perform rebalancing, i.e. to return the benchmark to its initial weightings.
Group	Displays the <b>Group</b> view. Shows the groups of the selected revision. Use this view when you have defined your benchmark on Axis group. You then use these groups to add components for the specific groups.
Component	Displays the <b>Component</b> view. Shows the components for the selected revision. Use this view to add or delete securities, security baskets, and indexes (expanded or not) according to the definition method.
Transaction	Displays the <b>Transaction</b> view. Shows the generated transactions for the selected benchmark/rebalance/revision. If no rebalance exists, then only the transactions for the initial generation of the revision are displayed. Canceled transactions are not displayed.

### 15.2.1.2 New

Menu item	Description
New Benchmark	Create a new benchmark definition.

## 15.2.2 Actions

This section describes all of the available benchmark actions and commands. It also shows the views where these actions can be carried out.

Command	Description	View
Accept Composition	Allows you to accept the proposed percentage after the check.	Revision, Benchmark
Add Date	Generates a new rebalance row if the rebalance method is set to <b>Manual</b> .	Rebalance
Add Group	Allows you to add a group to an inactive revision. If you select a group that already exists, no new row is added, and the existing group is selected.	Group, Revision
Cancel Transactions	Allows you to cancel the generated transactions. Note: You can only cancel benchmark transactions in Benchmark Manager, not in Transaction Manager.	Revision
Check Composition	Checks the distribution of the percentages you have entered for the selected components. When applicable proposes another distribution.	Revision, Benchmark
Close Benchmark	Closes the selected benchmark. The closing date must be after the date of the most recent transaction.	Benchmark
Delete Benchmark	Removes the selected benchmark including all associated data. All transactions are canceled. The benchmark must not have any active revisions.	Benchmark
Delete Component	Removes the selected component if the revision is not active.	Component
Delete Group	Allows you to remove a group from an inactive revision.	Group
Delete Revision	Removes the last revision in the <b>Revision</b> view if it does not have any transactions.	Revision
Generate	Generates the transactions for the selected revision. Note: All instruments used in transactions generated by Benchmark Manager need to have a quote. Non listed discount/securities without a quotation cannot be used in the benchmark composition.	Revision, Benchmark
Import Composition	Allows you to import a composition (in terms of individual securities) from a file directly into a revision. Note: This action is available only for compositions defined in Nominal/Units or Percentages.	Revision
Initial Revision	Adds the first revision to a new benchmark definition.	Benchmark
Initialize Axis	Only available when Axis is selected. Allows you to expand the selected groups to all groups in the selected axis.	Revision



Command	Description	View
New Component	Allows you to add a new component to the last revision (next or future).	Revision, Component, Group
New Revision	Allows you to create a new revision to a benchmark as long as the benchmark has not been closed. You can also use this action to create a copy of an existing revision, see <i>15.4.1 Copying a benchmark revision</i> on page 444.	Benchmark, Revision
Rebalance	Generates rebalance transactions and adds a new row for the next rebalance date. If rebalancing was already performed, it cancels the transactions before generating the new ones.	Rebalance, Benchmark
Remove Date	Removes the rebalance schedule if the rebalance method is set to <b>Manual</b> and a rebalancing has not been done on the selected row.	Rebalance

## 15.3 Defining benchmarks

You first need to set up a dedicated benchmark portfolio in Portfolio Editor and then create the benchmark in Benchmark Manager.

### 15.3.1 Setting up a benchmark portfolio

This section describes how to set up an existing portfolio as a benchmark portfolio. If you have not yet defined the portfolio you want to use for benchmarking, refer to *3.14 Portfolios* on page 107 to find out how to create portfolios. Benchmark portfolios are trading portfolios.

To set up a dedicated benchmark portfolio:

1. In Portfolio Editor, select the portfolio you want to serve as the benchmark portfolio.
2. In the **Switches** page, enable the following switches:

Switch	Description
Comparison	Defines the portfolio as a benchmark, enabling the Portfolio Compare key-figures to be correctly interpreted as actual results. For any other portfolio, TRM displays the difference between the portfolios and the comparison portfolio, where $\text{Difference} = \text{Portfolio Key Figure} - \text{Comparison Key Figure}$
Benchmark	The portfolio can be used to generate benchmark transactions.
Trading	The portfolio can be used for trading.
Not Payable	The benchmark transactions are not part of the settlement process.
Not Bookable	The benchmark transactions are not part of the accounting process.

3. In **Allowed Users** page, add the user (process) **BATCH** with the permission **ALL**.
4. Save the whole portfolio definition using **File - Save**.

## 15.3.2 Setting up a benchmark

Benchmarks are set up in Benchmark Manager.

### 15.3.2.1 Creating a benchmark

To create a benchmark:

1. In Benchmark Manager, click **New - New Benchmark** and fill in the fields using the information in the following table:

Information	Description
Benchmark	(Mandatory) The benchmark ID for the benchmark. The ID should be as explicit as possible, for example, the ID could include definition method, currency, and any other information that will make the definition distinctive.
Name	The name for the benchmark.
Portfolio	The portfolio ID of the benchmark where the transactions will be generated. Note: If you cannot find the portfolio you want to use, check that it has been properly set up for benchmarking. See <i>15.3.1 Setting up a benchmark portfolio</i> on page 433.
Counterparty	Id of the counterparty client to be used for benchmark transactions.
Currency	(Mandatory) The currency ID of the benchmark that will be used by default in benchmark valuation.
Domain	(Mandatory) The benchmark domain ID.
Payment Instrument	Id of the instrument to be used for generating payment transactions
Scenario	Scenario used to retrieve rates used for benchmark calculations. If left blank, it will be the Default scenario.
Calendar	Calendar used to shift rebalance dates. If left blank, the calendar of the currency will be used.
Holiday Calendar	Holiday calendar used to check if a rebalance date is a business day or not. If left blank, calculations use currency holiday calendar.

2. Click **OK** to save the main characteristics of the benchmark. The benchmark is added to the **Benchmark** view.
3. To complete the benchmark creation, go to the relevant section according to the definition method you want to use:
  - Nominal/Units: *15.3.2.1.1 Benchmark using Nominal/Units* on page 434.
  - Percentage: *15.3.2.1.2 Benchmark revision using Percentage* on page 436.
  - Duration: *15.3.2.1.3 Benchmark revision using Duration* on page 439.

#### 15.3.2.1.1 Benchmark using Nominal/Units

This step describes how to add an initial (or new) revision that uses the Nominal/Units definition method to the benchmark you created in the previous step (*15.3.2.1 Creating a benchmark* on page 434). You can only define single securities as components when using the Nominal/Units method.

To add the initial (or new) revision using the Nominal/Units method:

1. In **Benchmark** view, right-click the new definition you have just created, and select **Initial Creation** (or **New Revision** for subsequent revisions).
2. Complete the benchmark definition with the information in the following table:

---

**Note:** All other fields are not applicable to this method and can be ignored.

---

Information	Description
Date	The date must be later than the opening date of the portfolio. Defaulted to the current date (today).
Definition Method	Choose <b>Nominal/Units</b> to define the benchmark's components in terms of their Nominal Amount (for IR) and units (for equities). See <i>15.1.2 Definition Methods</i> on page 430.
Re-Investment Method	Determines how dividends and coupons are handled. Choose from: <ul style="list-style-type: none"> <li>• <b>Withdraw Cash</b> (default for Nominal/Units and Duration definition methods)</li> <li>• <b>Hold Cash</b> (default for the Percentage definition method)</li> <li>• <b>Re-Invest Cash when Rebalancing</b></li> <li>• <b>Re-Invest Cash on Security</b></li> </ul> For more information about these methods, see <i>15.1.3 Re-Investment Methods</i> on page 430.
Zero Spot Days	<ul style="list-style-type: none"> <li>• When left blank, the value date of the benchmark transactions are configured according to the instrument.</li> <li>• When switched on, Benchmark Manager forces the value date of the generated to be equal to the date the benchmark was created or rebalanced.</li> </ul>
Previous Day's Prices	<ul style="list-style-type: none"> <li>• When left blank, the day's prices of the benchmark components are used for the benchmark calculations.</li> <li>• When switched on, the previous day 's prices of the benchmark components are used for the benchmark calculations.</li> </ul>

3. Click **OK** to save the initial (or new) revision. The revision is added to the **Revision** view.

---

**Note:** You can remove a revision provided that you first cancel its transactions. Right-click the revision you want to remove and click **Delete Revision**.

---

4. In the **Revision** view, you can either add a new component to the revision you have just created or import a full composition directly from a file:

---

**Note:** To import a full composition from a file, you must have first specified the name of the file and the security identifier, if the instrument uses one, in the **Revision** view, Composition File and Security Identifier Type fields.

---

- To add a new component to the revision: right-click the revision you have just created and select **New Component**. In the resulting dialog, select the security from the list of available securities and click **OK**. The component is added to the **Component** view.
  - To import a full composition: right-click the revision row and select **Import Composition**. In the resulting dialog, keep or change the default separators for thousands and decimals. Click **OK** to import the composition. The dialog also shows a preview of the file you want to import.
5. In the component row, enter either the nominal amount for IR or units (for equities) and click **Apply** when ready.

6. In the **Revision** view, right-click the revision row or rows for which you want to generate the transactions and click **Generate**.
7. When you are satisfied that the transactions are generated correctly, click **Apply**.

---

**Note:** To cancel transactions, right-click the revision and select **Cancel Transactions**. If you have already applied the transactions you might need to reset the transactions first. You can only cancel benchmark transactions in Benchmark Manager.

---

### 15.3.2.1.2 Benchmark revision using Percentage

This step describes how to add an initial (or new) revision using the Percentage definition method to the benchmark you created previously (*15.3.2.1 Creating a benchmark* on page 434).

You can use Market Value Percentage method with single securities, sets of securities and indexes. For information about setting up security baskets see *3.42 Security Basket Editor (optional)* on page 152.

---

**Note:** The method (Market Value) Percentage without any axis definition allows only single securities or indexes.

---

To add an initial (or new) revision using the Percentage method:

---

**Note:** Check that all of the columns you need to use are visible in the individual views, i.e right-click the column header and select **Select Columns**.

---

1. In **Benchmark** view, right-click the new definition you have just created, and select **Initial Creation** (or **New Revision** for subsequent revisions).
2. Complete the benchmark definition with the information in the following table:

Information	Description
Date	The date must be later than the opening date of the portfolio. Defaulted to the current date (today).
Definition Method	Choose <b>Percentage</b> . You can use Market Value Percentage method with single securities, sets of securities, and indexes (with or without <b>Expand Index on Individual Securities</b> ). See <i>15.1.2 Definition Methods</i> on page 430.
Re-Investment Method	Determines how dividends and coupons are handled. Choose from: <ul style="list-style-type: none"> <li>• <b>Hold Cash</b> (default for the Percentage definition method)</li> <li>• <b>Withdraw Cash</b> (default for Nominal/Units and Duration definition methods)</li> <li>• <b>Re-Invest Cash when Rebalancing</b></li> <li>• <b>Re-Invest Cash on Security</b></li> </ul> For more information about these methods, see <i>15.1.3 Re-Investment Methods</i> on page 430.
Rebalance From	The date from which rebalancing can be done. This date must be later than the date specified in the <b>Date</b> field. Note: Rebalance is only available for <b>Percentage</b> and <b>Duration</b> definition methods.

Information	Description
Rebalance Method	<p>The method used to generate the rebalancing dates. Choose from:</p> <ul style="list-style-type: none"> <li>• Days</li> <li>• Business Days</li> <li>• Weeks</li> <li>• Months</li> <li>• Years</li> <li>• Manual: use this method when you cannot schedule rebalancing.</li> </ul> <p>Note: Rebalance is only available for <b>Percentage</b> and <b>Duration</b> definition methods.</p>
Rebalance Frequency	<p>Determines the interval that you want rebalancing to be scheduled. For example, if you want rebalancing to be scheduled every business day, you need to select, <b>Business Days</b> as Rebalance Method and specify <b>1</b> as the frequency.</p> <p>Note: Rebalance is only available for <b>Percentage</b> and <b>Duration</b> definition methods.</p>
Rebalance Convention	<p>The convention used to generate the rebalancing dates. For example, if you want to postpone the rebalancing to the next business day when the rebalancing falls on a holiday, select <b>Modified Following</b>. Choose from:</p> <ul style="list-style-type: none"> <li>• <b>None</b>: No adjustment.</li> <li>• <b>Following</b>: The next business day is used.</li> <li>• <b>Modified Following</b>: The next business day is used, unless this falls in the following month, in which case the previous business day is used.</li> <li>• <b>Backward</b>: The previous business day is used.</li> <li>• <b>Modified Backward</b>: The previous business day is used except if not in the same month, in which case the next business day is used.</li> <li>• <b>Business Days</b>: The business day.</li> </ul> <p>Note: Rebalance is only available for <b>Percentage</b> and <b>Duration</b> definition methods.</p>
Zero Spot Days	<ul style="list-style-type: none"> <li>• When left blank, the value date of the benchmark transactions are configured according to the instrument.</li> <li>• When switched on, Benchmark Manager forces the value date of the generated to be equal to the date the benchmark was created or rebalanced.</li> </ul>
Previous Day's Prices	<ul style="list-style-type: none"> <li>• When left blank, the day's prices of the benchmark components are used for the benchmark calculations.</li> <li>• When switched on, the previous day 's prices of the benchmark components are used for the benchmark calculations.</li> </ul>

- Choose the one of the following options before closing the **Initial Creation** or **Revision** dialog:
  - If you are defining a benchmark revision with axis group, complete the instructions in section *15.3.2.1.4 Benchmark revision with axis group (optional)* on page 441 before proceeding to step 6. on page 438.
  - If you are not defining a benchmark revision with axis group, continue to the next step.
- Click **OK** to save the initial (or new) revision. The revision is added to the **Revision** view.

---

**Note:** You can remove a revision provided that you first cancel its transactions. Right-click the revision you want to remove and click **Delete Revision**.

---

- Add components to the revision:

- a. In the **Revision** view, you can either add a new component to the revision you have just created or import a full composition directly from a file:

**Important:** To import a full composition from a file, you must have first specified the name of the file and the security identifier, if the instrument uses one, in the **Revision** view, **Composition File** and **Security Identifier Type** fields.

- To add a new component to the revision: right-click the revision you have just created and select **New Component**. In the resulting dialog, use the following table to add the component:

Information	Description
Type	Select the type you want to use. Choose from: <b>Security</b> , <b>Security Basket</b> , <b>Index</b> , and <b>Derived Index</b> .
Component	Select the component from the list of available components for the given type.

Click **OK**. The component is added to the **Component** view.

- To import a full composition: right-click the revision row and select **Import Composition**. In the resulting dialog, keep or change the default separators for thousands and decimals.

Click **OK** to import the composition. The dialog also shows a preview of the file you want to

In the **Component** view, enter the percentage (weighting) in the % column.

- b. Optionally, if you selected an Index or Derived Index, and you want the underlying securities to be expanded, set the switch **Expand Index on Individual Securities** in the **Attributes** column.

---

**Note:** The underlying securities must be defined at the instrument level with the Index Composite feature. See *TRM Instruments: Processing and Calculations Guide* for more information.

---

- c. Repeat these steps for each component you want to add to the revision.

- d. Click **Apply** when you have finished.

**6.** Check that the weightings meet the targets:

- a. In the **Revision** view, right-click the revision row you want to check and select **Check Composition**.

- b. Verify that the composition is valid (i.e. no red fields).

- c. When you are satisfied, select **Accept Composition**.

Accepting the composition copies the proposed fields (Proposed %) to standard ones (%) and validates the composition.

---

**Note:** If you make further changes to the composition, you must repeat the composition check.

---

- d. Click **Apply** to validate the composition.

**7.** When you have finished setting up the benchmark, right-click the revision row for which you want to generate the transactions, and click **Generate**.

---

**Note:** Generate can only be done on a valid composition (no red fields).

---

8. Enter the market value in the **Generate** dialog and click **OK**.

---

**Note:** If the **OK** button is not active, click elsewhere in the dialog to activate it.

---

9. When you are satisfied that the transactions have generated correctly, click **Apply** to apply the transactions.

---

**Note:** To cancel transactions, right-click the revision and select **Cancel Transactions**. If you have already applied the transactions you might need to reset the transactions first. You can only cancel benchmark transactions in Benchmark Manager.

---

### 15.3.2.1.3 Benchmark revision using Duration

This step describes how to add an initial (or new) revision using the Duration definition method to the benchmark you created previously (*15.3.2.1 Creating a benchmark* on page 434).

You can use Duration method with single securities and sets of securities (security baskets). For information about setting up security baskets see *3.42 Security Basket Editor (optional)* on page 152.

To add an initial (or new) revision using the duration method:

1. In **Benchmark** view, right-click the new definition you have just created, and select **Initial Creation** (or **New Revision** for subsequent revisions).
2. Complete the benchmark definition with the information in the following table:

Information	Description
Date	The date must be later than the opening date of the portfolio. Defaulted to the current date (today).
Definition Method	Choose <b>Duration</b> . You can only use duration targets with single securities and with security baskets. See <i>15.1.2 Definition Methods</i> on page 430.
Duration	Corresponds to the target duration for fixed duration benchmarks. The duration is used for rebalancing.
Re-Investment Method	Determines how dividends and coupons are handled. Choose from: <ul style="list-style-type: none"> <li>• <b>Hold Cash</b> (default for the Percentage definition method)</li> <li>• <b>Withdraw Cash</b> (default for Nominal/Units and Duration definition methods)</li> <li>• <b>Re-Invest Cash when Rebalancing</b></li> <li>• <b>Re-Invest Cash on Security</b></li> </ul> For more information about these methods, see <i>15.1.3 Re-Investment Methods</i> on page 430.
Rebalance From	The date from which rebalancing can be done. This date must be later than the date specified in the <b>Date</b> field. Note: Rebalance is only available for <b>Percentage</b> and <b>Duration</b> definition methods.

Information	Description
Rebalance Method	<p>The method used to generate the rebalancing dates. Choose from:</p> <ul style="list-style-type: none"> <li>• Days</li> <li>• Business Days</li> <li>• Weeks</li> <li>• Months</li> <li>• Years</li> <li>• Manual: Use this method when you cannot schedule rebalancing. See <i>15.4.2.2 Manual benchmark rebalancing with scheduling</i> on page 444.</li> </ul> <p>Note: Rebalance is only available for <b>Percentage</b> and <b>Duration</b> definition methods.</p>
Rebalance Frequency	<p>Determines the interval that you want rebalancing to be scheduled. For example, if you want rebalancing to be scheduled every business day, you need to select, <b>Business Days</b> as Rebalance Method and specify <b>1</b> as the frequency.</p> <p>Note: Rebalance is only available for <b>Percentage</b> and <b>Duration</b> definition methods.</p>
Rebalance Convention	<p>The convention used to generate the rebalancing dates. For example, if you want to postpone the rebalancing to the next business day when the rebalancing falls on a holiday, select <b>Modified Following</b>. Choose from:</p> <ul style="list-style-type: none"> <li>• <b>None</b>: No adjustment.</li> <li>• <b>Following</b>: The next business day is used.</li> <li>• <b>Modified Following</b>: The next business day is used, unless this falls in the following month, in which case the previous business day is used.</li> <li>• <b>Backward</b>: The previous business day is used.</li> <li>• <b>Modified Backward</b>: The previous business day is used except if not in the same month, in which case the next business day is used.</li> <li>• <b>Business Days</b>: The business day.</li> </ul> <p>Note: Rebalance is only available for <b>Percentage</b> and <b>Duration</b> definition methods.</p>
Zero Spot Days	<ul style="list-style-type: none"> <li>• When left blank, the value date of the benchmark transactions are configured according to the instrument.</li> <li>• When switched on, Benchmark Manager forces the value date of the generated to be equal to the date the benchmark was created or rebalanced.</li> </ul>
Previous Day's Prices	<ul style="list-style-type: none"> <li>• When left blank, the day's prices of the benchmark components are used for the benchmark calculations.</li> <li>• When switched on, the previous day 's prices of the benchmark components are used for the benchmark calculations.</li> </ul>

3. Choose the one of the following options before closing the Initial Creation or Revision dialog:
  - If you are defining a benchmark revision with axis group, complete the instructions in section *15.3.2.1.4 Benchmark revision with axis group (optional)* on page 441 before proceeding to step 6. on page 441.
  - If you are not defining a benchmark revision with axis group, continue to the next step.
4. If you defined Click **OK** to save the initial (or new) revision. The revision is added to the **Revision** view.

---

**Note:** You can remove a revision provided that you first cancel its transactions. Right-click the revision you want to remove and click **Delete Revision**.

---



**5.** Add components to the revision:

- a.** In the **Revision** view, right-click the revision you have just created and select **New Component**.
- b.** In the **New Component** dialog, use the following table to add the component:

Information	Description
Type	Select the type you want to use. Choose from: <b>Security</b> and <b>Security Basket</b> .
Component	Select the component from the list of available components for the given type.

- c.** Click **OK**. The component is added to the **Component** view.
- d.** In the **Component** view, enter the percentage (weighting) in the % column.
- e.** Repeat these steps for each component you want to add to the revision.
- f.** Click **Apply** when you have finished.

**6.** Check that the weightings meet the targets:

- a.** In the **Revision** view, right-click the revision you want to check and select **Check Composition**.
- b.** Verify that the composition is valid (i.e. no red fields). You can either accept or change the values and then repeat the check.
- c.** When you are satisfied, select **Accept Composition**.

Accepting the composition copies the proposed fields (Proposed %) to standard ones (%) and validates the composition.

---

**Note:** If you make further changes to the composition, you must repeat the composition check.

- d.** Click **Apply** to validate the composition.

**7.** When you have finished setting up the benchmark, right-click the revision row for which you want to generate the transactions, and click **Generate**.

---

**Note:** Generate can only be done on a valid composition (no red fields).

**8.** Enter the market value in the **Generate** dialog and click **OK**.

---

**Note:** If the **OK** button is not active, click elsewhere in the dialog to activate it.

**9.** When you are satisfied that the transactions have generated correctly, click **Apply** to apply the transactions.

---

**Note:** To cancel transactions, right-click the revision and select **Cancel Transactions**. If you have already applied the transactions you might need to reset the transactions first. You can only cancel benchmark transactions in Benchmark Manager.

#### 15.3.2.1.4 Benchmark revision with axis group (optional)

This step describes how to add axis group to the benchmark revision you are creating. Follow these steps before completing the revision definition.

---

**Note:** Axis group is only available for benchmark revisions using Percentage and Duration methods.

To complete a Percentage or Duration revision with axis group:

1. In **Initial Creation** (or **Revision**) dialog, complete the benchmark definition with the information in the following table:

Information	Description
Axis	Mandatory when one of these two definition methods is selected. Axis used as grouping for the components. The default is <b>None</b> . Choose from: <ul style="list-style-type: none"> <li>• Branch (code)</li> <li>• Maturity Period</li> <li>• Currency Class</li> <li>• Currency.</li> </ul> Note: Axis can only be used with <b>Percentage</b> and <b>Duration</b> definition methods.
Axis Configuration	When you select a choice other than <b>None</b> , the <b>Full Axis</b> field is enabled. <ul style="list-style-type: none"> <li>• If you selected Branch (Branch Code axis), you configure which Branch Code to be used.</li> <li>• If you selected Maturity Period (Maturity Period axis) you specify which gap set to be used.</li> </ul> Note: Axis can only be used with <b>Percentage</b> and <b>Duration</b> definition methods.
Full Axis	(Optional) Allows you to include all groups instead of just the ones you selected previously. Axis can only be used with <b>Percentage</b> and <b>Duration</b> definition methods.  For example, if you selected Currency Axis, and chose only a few currency groups, you can expand these groups to all currency groups by selecting this switch.

2. Click **OK** to save the initial (or new) revision. The revision is added to the **Revision** view.
3. In the **Group** view, configure the group using the following table:

Information	Description
Revision	Read-only. The date of the revision.
Group	Read-only. The ID of the group that corresponds to the Axis you selected in the <b>Revision</b> dialog. For example, if you selected Currency you will see the currencies.
%	Target weight of the group, expressed as a percentage which changes with duration or duration contribution according to the following formula: $\% = \text{DurC} / \text{Dur}$ If Dur equals zero (0) then the percentage is not recalculated. Note: Benchmark Manager always re-computes the field (Percentage, Duration or Duration Contribution), which has the oldest modified date.
Duration	For Duration method only. Target duration for this group should follow changes of % and duration contribution according to formulae: $\text{Dur} = \text{DurC} / \%$ Note: Benchmark Manager always re-computes the field (Percentage, Duration or Duration Contribution), which has the oldest modified date.
Duration Contribution	For Duration method only. Target duration contribution for this group should follow changes of % and duration according to formulae: $\text{DurC} = \text{Dur} * \%$ In addition DurC should always be less than or equal to the revision duration. Note: Benchmark Manager always re-computes the field (Percentage, Duration or Duration Contribution), which has the oldest modified date.

Information	Description
Proposed %	Read-only. Proposed target weight after check composition, if different from the % field, the figures appear in red.
Proposed Duration	Read-only. Proposed target duration after checking, if different from the Duration, the figures appear in red.
Proposed Duration Contribution	Proposed target duration contribution after checking. If different from the Duration, the figures appear in red.

---

**Note:** All other fields are provided for information only.

---

**4.** Add components to the revision:

- a. In the **Group** view, right-click the group you want to use and select **New Component**.
- b. In the **New Component** dialog, use the following table to add the component:

Information	Description
Type	Select the type you want to use. Choose from: <b>Security</b> , <b>Security Basket</b> , <b>Index</b> , and <b>Derived Index</b> .
Component	Select the component from the list of available components for the selected type and group.
Group	(Information only) Shows the selected group.

- c. Click **OK**. The component is added to the **Component** view.
- d. In the **Component** view, enter the percentage (weighting) in the % column.
- e. Optionally, if you selected an Index or Derived Index, and you want the underlying securities to be expanded, set the switch **Expand Index on Individual Securities** in the **Attributes** column.

---

**Note:** The underlying securities must be defined at the instrument level with the Index Composite feature. See *TRM Instruments: Processing and Calculations Guide* for more information.

---

- f. Repeat these steps for each component you want to add to the revision.
  - g. Click **Apply** when you have finished.
- 5.** Complete the Percentage or Duration benchmark revision you are creating:
- Benchmark revision using the Percentage method, go to step 6. on page 438.
  - Benchmark revision using the Duration method, go to step 6. on page 441.

## 15.4 Processing benchmarks

This section describes some of the processing actions that you can perform after the initial benchmark definition.

### 15.4.1 Copying a benchmark revision

To create a copy of an existing revision:

1. In the **Revision** view, right-click the revision row you want to copy, and select **New Revision**.
2. In the **New Revision** dialog, select **Copy Previous** if not already selected.

---

**Note:** If you do not want to create a copy of an existing revision, simply clear the **Copy Previous** switch. The relevant fields will become editable.

---

The new revision is a duplicate of the current one (except the date) and parameters are unavailable or defaulted with the values of the current revision.

3. If you do not want to copy the components of the previous revision, select the **Exclude Composition** switch. **Exclude Composition** is switched on by default if a "Composition File" has been entered in the previous revision.
4. Click **OK** to create a copy of the revision. The revision is added to the **Revision** view.

---

**Note:** You can remove a revision provided that you first cancel its transactions. Right-click the revision you want to remove and click **Delete Revision**.

---

### 15.4.2 Rebalancing

The rebalance schedule is defined in the **Initial Creation** or **Revision** dialog at the initial or new revision creation. Rebalancing can be done either automatically via the activity Benchmark Rebalancing or manually if you selected **Manual** as the Rebalancing method or if you want to run a rebalancing outside of the scheduled activity.

Rebalancing is performed in the Benchmark Manager - **Rebalance** view. You can only rebalance revisions that have generated transactions.

---

**Note:** Rebalancing is only available for benchmarks that use the Percentage and Duration definition methods.

---

#### 15.4.2.1 Automatic benchmark rebalancing

Benchmark rebalancing of a benchmark portfolio can be set up to occur automatically on a daily basis or on a specific date using the Benchmark Rebalancing activity. The rebalancing activity performs the rebalancing according to a pre-defined schedule or dates that you provided when you created the benchmark. The activity sells and buys back open positions, and then updates the inventory. Schedule the Rebalancing activity to run daily (Group is set to **NIGHTLY**).

To set up the activity, see *A.4 Benchmark Rebalancing* on page 628 for details of the activity's parameters.

---

**Note:** Activities are set up and managed in Activity Manager, see *Chapter 6 Managing activities* on page 227 for more information.

---

#### 15.4.2.2 Manual benchmark rebalancing with scheduling

This section describes how to perform a manual rebalancing according to the predefined schedule or dates that you defined in the revision.

To manually rebalance revisions of benchmarks:

1. In the **Revision** view, right-click the revision for which you want to perform rebalancing and select **Rebalance**.

A new rebalance schedule is added to the **Rebalance** view with a new status, either Current, Next or Future.

2. Check that the date corresponds to the next logical rebalance according to the rebalance method and frequency.
3. Click **Apply**.

---

**Note:** Only the current and next rebalance schedules remain in the **Rebalance** view.

---

4. Click **Generate**.

Rebalance transactions are generated and the next rebalance schedule is added. If rebalancing was already done, the previous transactions are canceled before generating the new ones.

### 15.4.2.3 Manual benchmark rebalancing without scheduling

This section describes how to perform a manual rebalancing when you do not know the scheduling details of the rebalancing. To indicate that you want rebalancing to be performed manually, you need to set the Rebalancing Method to **Manual**.

To manually rebalance revisions of benchmarks:

1. In the **Revision** view, right-click the revision for which you want to perform rebalancing and select **Add Date**.

A rebalance schedule is added to the **Rebalance** view with a new status. The status can be either Current, Next or Future.

2. In the **Rebalance** view, enter the rebalance date. The date should be after the last revision date.
3. Click **Apply**.

---

**Note:** Only the current and next rebalance schedules remain in the **Rebalance** view.

---

4. Click **Rebalance**.

### 15.4.2.4 End-of-Day Processing Activity

Optionally, you may want to run the End-of-Day Processing activity to automatically close out the historical Buy/Sell transactions generated by the rebalancing. This is useful when monitoring the benchmark portfolios in Treasury Monitor. See *A.24 End of Day Processing* on page 636 for more information.

## 15.4.3 Cash Processing

Cash processing should be set up according to the selected Re-Investment Method you defined in Benchmark Manager.

---

**Note:** Activities are set up and managed in Activity Manager: see *Chapter 6 Managing activities* on page 227 for more information.

---

### 15.4.3.1 13.4.3.1 Hold Cash

If your re-investment method is **Hold Cash**, no action is required as the cash (coupons, dividends etc.) is ignored.

### 15.4.3.2 Withdraw Cash

If your re-investment method is **Withdraw Cash**, you need to set up the Benchmark Cash Processing activity to generate the withdrawal (cash payment).

### 15.4.3.3 Re-Invest Cash when Rebalancing

If your re-investment method is **Re-Invest Cash when Rebalancing**, you need to rebalance (manually or automatically) the benchmark in order to re-invest the cash (coupons, dividends and so on) received since the last rebalancing proportionally in the benchmark components.

### 15.4.3.4 Re-Invest Cash on Security

If your re-investment method is **Re-Invest Cash on Security**, you need to set up the Benchmark Cash Processing activity to generate the re-investment on the day the cash is received.

## 15.4.4 Performing a manual adjustment

TRM allows you to add transactions (for example, cash, derivatives, and so on) to a benchmark outside of Benchmark Manager.

Manual adjustment is performed in Transaction Manager (i.e. not in Benchmark Manager) by entering new transactions to the relevant benchmark portfolio.

---

**Note:** Transactions entered this way into the benchmark portfolio via Transaction Manager are not visible in Benchmark Manager. There is no link between manually adjusted trades and the benchmarks.

---

## 15.4.5 Closing a benchmark

You can close a benchmark at any time provided that the closing date is later than the opening date of the most recent transaction.

To close a benchmark, right-click the benchmark you want to close and select **Close Benchmark**. Enter the closing date in the dialog and click **OK**.

## 15.4.6 Deleting a benchmark

You can delete a benchmark that does not have any active revision; active revisions must be deleted beforehand by using **Delete Revision**.

To delete a benchmark, right-click the benchmark you want to delete and select **Delete Benchmark**. Benchmark Manager deletes the benchmark and all of its associated data.

---

**Note:** The portfolio is not deleted, but all of the transactions that were generated are canceled.

---

## 16.1 Overview

It is possible to set limits to control positions and transactions: for example, you may want to set an accepted level of risk exposure, or specify a credit limit with a named counterparty. You can also set up limits per trader.

You can set a limit for almost anything, including FX, IR, and equity market risks; stop-losses, both total outstanding, and periodic; credit risks; settlements (FX and securities); and countries. Limits can be both absolute and relative, for example, accepted deviations from a benchmark.

You can define limit controls for simulated (pre-trade) as well as executed (post-trade) transactions. If executed limit control is configured (the default case), only the applied transactions in the relevant state of the Transaction Flow are checked by a limit server. If pre-trade limit checks are also configured (see *8.2.4 Setting up a pre-trade limit check* on page 277), you can request a check on affected limits before the transaction is applied and stored in the database, before deciding to apply, reset or cancel the transaction.

Creating a limit can be complex due to the number of variables. Take a simple credit limit for a specific counterparty: with an off-balance instrument such as a £1m FRA, the money is not handed over on the date of the deal, whereas with a £1m loan it is; you have the same sum of money, but a different credit exposure.

Also, a transaction involves different parties (counterparty and issuer, for example), so you need a way of specifying to which elements of the transaction the limit applies. Furthermore, you may want to divide the limit by instrument type, currency, or other criteria of your choice: for example, instead of simply having IR exposure against counterparties, you may want to have IR exposure netted by (grouped according to) instrument type.

This means that you need to be able to define different limit calculations, and apply them to different cashflow calculations. To make this possible, limit management is modeled on the following concepts:

- Limit: a grouping of limit items. For example, all credit exposure for a specific counterparty, or all IR exposures by currency.
  - Limit factor set: a group of scaling factors for increasing or scaling up the impact on limits of certain transactions. For example, longer exposures have a proportionally higher risk than short exposures, so you may want to increase the impact of long-exposure transactions on limit results.
  - Limit item template: a calculation definition (expression) combined with rules for determining which cashflows are to be affected by that calculation, and also various other criteria controlling how the calculation is to be applied or netted.

You use limit item templates to calculate sublimits.

- Sublimit calculation template: The sublimit is the actual limit you want to apply to a selected group of transactions. For example, the FX spot limit for a particular bank, or the IR exposure for a particular portfolio. The sublimit calculation template defines how exposures produced in limit items are aggregated for the sublimit. You can assign sublimit calculation templates to multiple limits, or to multiple sublimits within the same limit.
- Limit client query: a client query that you use to specify which clients are queried by a limit.
- Limit category: each limit is linked to a category which can be later used as a grouping when monitoring limits.

See *16.2 Setting up limits* on page 449 for more information.

The limits you set can be analyzed and monitored in an application called Limit Monitor. In this application, you can create layouts (pages) and suites of layouts (books) with different types of information groupings and limit queries. These layouts can be saved for personal use or shared among users.

See *16.3 Limit Monitor* on page 471 for more information.

If limit usage is approaching any of the thresholds that you have defined or a limit has been violated, the limit server will notify you by sending a warning message. These notifications are received in an application called Limit Notifications.

See *16.4 Limit Notifications* on page 482 for more information.

The limits you set are for information only. Although transactions that exceed their limits are flagged as limit violations by default, you cannot block transactions to stop them from exceeding their limits. You can, however, set up your transaction flow to apply special processing for transactions violating limits (for example set status LIMIT-VIOLATION for deals violating a limit, or send such deals to a specific transaction state).

See *16.5 Analyzing limit violations* on page 484 for more information.

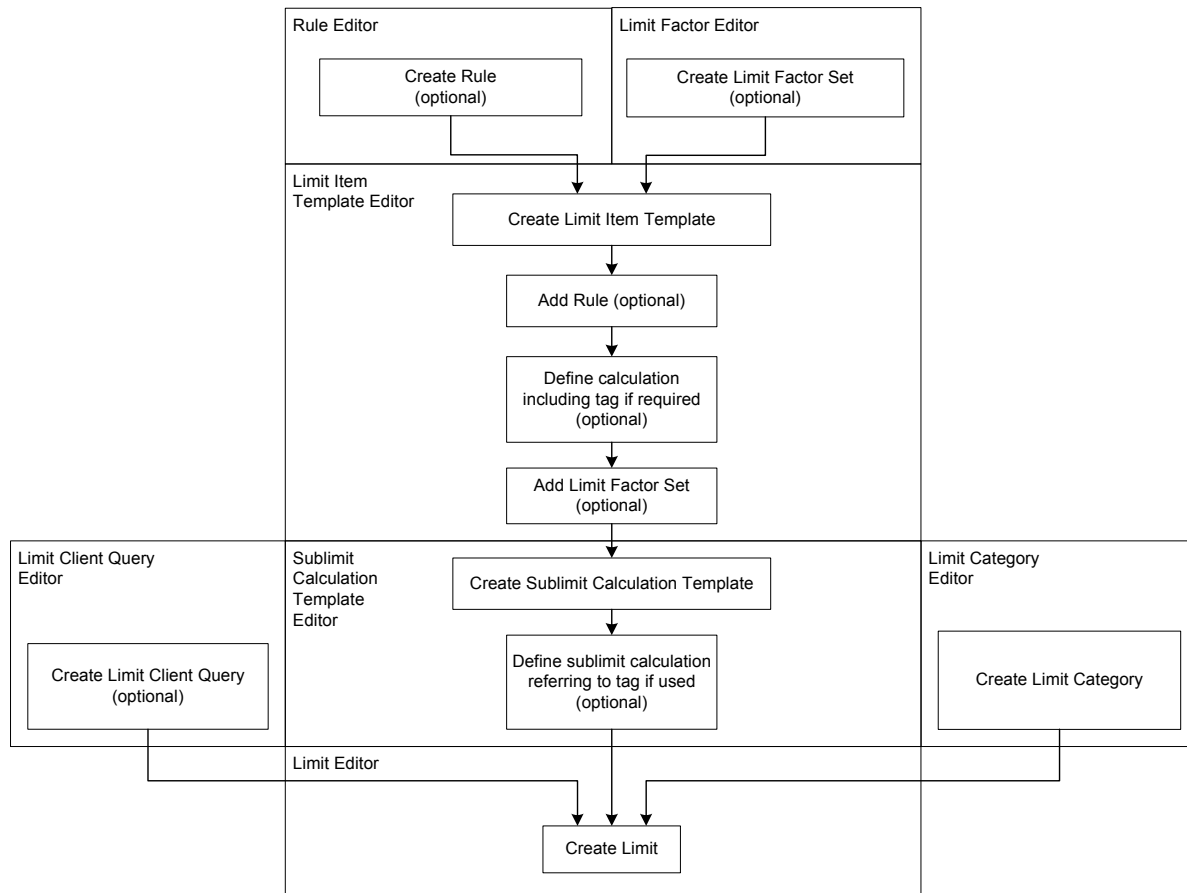
The following limit editors include SDM support:

- Limit Category
- Limit Client Query
- Limit Item Template
- Sublimit Calculation Template
- Limit Factor
- Credit Rating



## 16.2 Setting up limits

The following diagram provides an example of the steps involved in creating position-related limits:



To create a limit you need to:

1. Create rules (optional) to filter transactions prior to potentially applying a limit. For instance, you can filter for all transactions in a particular portfolio, and then apply the limit to these specific transactions.

Rules are set up in Rule Editor: see *Chapter 5 Managing rules* on page 221 for more information.

2. Create limit factor sets (optional) to determine the impact of certain transactions on limits, for example, to make longer-exposure transactions affect the limit more than shorter-exposure transactions.

Limit factor sets are set up in Limit Factor Editor: see *16.2.1 Creating limit factor sets* on page 450 for more information.

3. Create limit item templates to define limit exposure calculations (which can optionally be combined with rules and/or factor sets to determine which cashflows are to be affected by that calculation for different types of exposures).

Limit item templates are set up in Limit Item Template Editor: see *16.2.2 Creating limit item templates* on page 452 for more information.

4. Create sublimit calculation templates to define the calculations used to select and aggregate exposures from limit items into actual sublimits to be applied to selected groups of transactions.

Sublimit calculation templates are defined in Sublimit Calculation Template Editor: see *16.2.3 Creating sublimit calculation templates* on page 461 for more information.

5. Create limit client queries (optional) which you use to specify which clients are queried by the limit.

Limit client queries are defined in Limit Client Query Editor: see 16.2.4 *Creating limit client queries* on page 467 for more information.

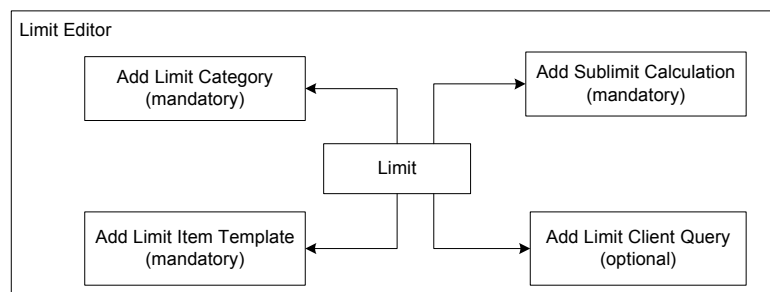
6. Create limit categories to which limits are linked.

Limit categories are defined in Limit Category Editor. See 16.2.5 *Creating limit categories* on page 467 for more information.

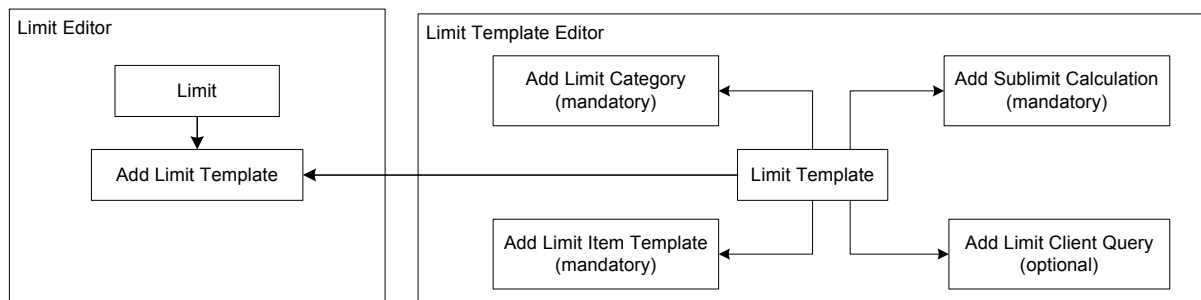
7. Create limits referring to the entities described above, to set up the actual limits to be applied to selected groups of transactions.

Limits are set up in Limit Editor: see 16.2.6 *Creating limits* on page 468 for more information.

Limits reference the following limit entities: limit category, sublimit calculation, limit item template, limit client query. You can either add the entities directly to the limit in Limit Editor or you can add a limit template to the limit in Limit Editor. The following diagram shows which limit entities to add to the limit:



The following diagram provides an example of how a limit template is used. You attach a limit template to a limit in the Limit Editor. A limit template is created in Limit Template Editor and references the following limit entities: limit category, sublimit calculation, limit item template, limit client query.



Limit templates are set up in Limit Template Editor: see 16.2.7 *Creating limit templates* on page 470 for more information.

## 16.2.1 Creating limit factor sets

A limit factor set is a set of rules which is used to increase or scale up the impact on limits of transactions that match certain criteria.

Limit factors can be used in cases such as the following:

- Longer exposures have a proportionally higher risk than short exposures
- Some currencies can carry a higher risk than others
- A transaction with a counterparty that has a poor credit rating represents a greater risk than a transaction of the same value with a counterparty that has a better credit rating.

Limit factor sets consist of a selection of criteria for transactions, with a number (the scaling factor) by which those transactions are to be scaled. For example, if you have a limit item using limit factors with an expression such as `market_value + factor * deal_nominal_amount`, you can set up a limit factor set where `factor = 0.01` when Criteria X = A, but for all other transactions, `factor = 0.02` to apply different scaling for different transactions in the same limit item.

You can only use criteria that are used as netting parameters in limit items with the same limit ID (for example, to make scaling dependent on an instrument, limit items must be set up with netting by instrument).

See *16.2.2 Creating limit item templates* on page 452 for more information.

Limit factor sets are created in Limit Factor Editor.

To create a limit factor set:

1. In Limit Factor Editor, enter the main attributes for the limit factor set in the upper part of the editor.

Information	Description
ID & Name	Unique ID and name for the limit factor set.
Domain	Domain in which this limit factor set is available.

2. In Limit Factor Editor's **Limit Factor** page, define and add the individual limit factors and criteria that make up the limit factor set.

Information	Description
Expression	A number representing the scaling factor for the rule. Scaling factors are later used dynamically in limit item expressions.
Client Rating Client Min Rating Code Client Max Rating Code	A specific credit rating for the client, where: <ul style="list-style-type: none"> <li>• <b>Rating</b> gives the rating agency and type (for example, Moody's long rating, or Standard &amp; Poors short rating)</li> <li>• <b>Rating Code</b> gives the actual rating (A+, BB, and so on).</li> </ul> <p>By setting minimum and/or maximum rating levels of the credit rating, you can define a ratings order.</p> <p>You must select a value for the <b>Rating</b> field for the <b>Rating Code</b> fields to work.</p> <p>The credit ratings themselves are defined in Credit Rating Editor.</p>
Instrument Rating Instrument Min Rating Code Instrument Max Rating Code	Same as <b>Client Credit Rating</b> , but for an instrument. An instrument's credit rating is applied to the instrument definition using the <b>Credit-Rating</b> feature. An instrument's credit rating may differ from that of the issuer, for example, an Asset-backed Security may have a higher credit rating than the issuing institution because it is based on the asset.
Gap	Gap definition, as defined in Gap Editor.
Maturity Period From/To Risk Period From/To Delivery Period From/To	The relevant from and to periods for transactions and cashflows: <ul style="list-style-type: none"> <li>• Maturity periods relate to transactions. For example, the maturity period for a bond is the redemption date.</li> <li>• Risk periods relate to individual cashflows. For example, the risk periods for a bond are the periods between coupons, and between the final coupon and the redemption date.</li> <li>• Delivery periods relate to when securities are delivered (delivery cashflows), and only apply when you have 'Delivery Amount' in the limit item expression.</li> </ul> <p>Note that the periods that are available from the selection lists of these fields are dependent on the gap definition you select in the <b>Gap</b> field.</p>
Instrument Group	Instrument group of the transaction.

Information	Description
Instrument	Instrument of the transaction.
Leg	Leg of the transaction.
Currency	Currency of the cashflow.
Currency Class	Class of currency; in other words, include cashflows denominated in a currency belonging to this class.
Portfolio	Portfolio in which the transaction is entered.
Package Main Type	Main package type for the package type. You need to select a <b>Package Main Type</b> before you select a <b>Package Type</b> . Package main types are defined in Package Type Editor.
Package Type	Package type of the transaction. This only applies if the transaction is packaged.
Bank Account	Bank and bank account (which represents a credit risk since, for example, a bank with which you have an account could go bankrupt).
Client	A specific client (as defined in Client Editor).
Parent	A specific client parent. You define client/parent relationships in Client Editor.
Client Main Group Client Group	The group that a client belongs to (as defined in Client Editor's <b>Groups</b> page). You must select a main group before you can select a group, since this selection determines the list of groups displayed in the associated <b>Group</b> field. In fact, the <b>Client/Not Client Main Group</b> fields do not provide selection criteria for the limit item, but simply filter the associated <b>Client/Not Client Group</b> lists.
Risk Country	A specific country (as defined in Country Editor).
Branch Code #0-#19	Branch codes are defined in Branch Code Editor and assigned to instruments in Instrument Editor.
Guarantor	Client defined as a Guarantor ( <b>Roles</b> = <i>Guarantor</i> ) for a transaction.
Guarantee Level	Guarantee level of the transaction: Primary or Secondary.
Guarantee Type	Guarantee type.
Guarantee Parameter #0-#19	Guarantee parameters, defined in Parameter Editor.

3. Save the limit factor set definition using **File - Save As New**.

## 16.2.2 Creating limit item templates

A limit item template is a calculation (expression) combined with rules for determining which cashflows are to be affected by the calculation, and also various other criteria to control how the calculation is to be applied or netted. Limit item templates are combined with limit client queries in the setup of actual limits in Limit Editor, to define the limit items used to calculate exposures for sublimits.

Limit item templates are defined in Limit Item Template Editor and can be assigned to multiple limits.

To create a limit item template:

1. Enter a unique ID and name for the limit item template in the upper part of the editor.
2. In the **Order Number** field, enter a number to define the order in which this limit item is queried, in relation to other limit items with the same limit ID: the limit item with **Order Number** = 1 is queried first, followed by the limit item with **Order Number** = 2, and so on.

Generally, it is useful to give a higher priority (a lower number) to limit items with a more exact and complex query definition.

Any cashflows already included in one limit item are excluded from subsequent limit items: this is to prevent cashflows from being duplicated, although you can deliberately allow duplicates by turning on the **Allow Duplicates** switch (see below).

3. In the **Limit Client Mode** field, select the kind of client within the transaction to which all client-related features of this limit item apply. Limit Client Query and netting **By Client** are done against the selected client. One of the following values must be selected:

Client query mode	Description
Counterparty	The counterparty of the transaction is always used as the client.
Credit Client	<p>If the instrument of the transaction has been set up with Guarantors (typically, a bond):</p> <ul style="list-style-type: none"> <li>All cashflows of the transaction are split between identified Guarantors of the instrument using the Cover Percent of each guarantor</li> <li>The guarantor of each split cashflow is used as the client</li> </ul> <p>If the transaction has Guarantees (typically a loan):</p> <ul style="list-style-type: none"> <li>All cashflows of the transaction are split between Guarantors of the guarantees using the Cover Percent of each guarantor</li> <li>The Guarantor of each split cashflow is used as the client</li> </ul> <p>otherwise,</p> <ul style="list-style-type: none"> <li>The Issuer of the transaction is used as client for all cashflows.</li> </ul>
Issuer	The Issuer of the transaction is always used as the client.
Leg Issuer	<p>If the leg instrument of the cashflow has been set up with an Issuer, then:</p> <ul style="list-style-type: none"> <li>The Issuer of the leg instrument is used as the client for the cashflow.</li> </ul> <p>otherwise:</p> <ul style="list-style-type: none"> <li>The Issuer of the transaction is used as the client for the cashflow.</li> </ul>
Underlying Issuer	<p>If the transaction has a secondary instrument:</p> <ul style="list-style-type: none"> <li>The Issuer of the secondary instrument is used as the client for all cashflows</li> </ul> <p>otherwise,</p> <ul style="list-style-type: none"> <li>The Issuer of the transaction is used as the client for all cashflows.</li> </ul>

The following further processing is done in all Limit Client modes:

- If the netting switch **By Client** is off:
    - The limit item is based on the identified client regardless of whether the client is a syndicate.
  - If the netting switch **By Client** is on:
    - If the client is a syndicate, every cashflow of the transaction is further split between individual clients according to percentages of each of them in the syndicate. No exposure is allocated to the syndicate but all of it is shown for the underlying members.
    - If the client is not a syndicate, the whole exposure is allocated to the client directly.
4. Fill in the next fields in the upper part of the editor using the information in the following table:

Information	Description
Rule	<p>Rule defining the transaction or cashflow characteristics (such as, portfolio, instrument, and currency) to which the limit item query applies.</p> <p>You do not need a rule for selecting clients, since the client aspects of a limit query are set up separately in the <b>Limit Item Query</b> page.</p> <p>The rules that are available from the selection list are those for which either the <b>Limit</b> or <b>System</b> switches are turned on, in the Rule Editor (see 5.1 <i>Defining rules</i> on page 221).</p>

Information	Description
Not Rule	Same as the <b>Rule</b> field above, but defining the transaction or cashflow characteristics to which the limit item query does not apply (include all transactions matching <b>Rule</b> , except those matching <b>Not Rule</b> ).
Tag	<p>Name of the tag that you want this limit item to have.</p> <p>The tag is an identifier which can be assigned to a sublimit to specify which limit item to use. You can combine one or more limit items in a single sublimit calculation.</p> <p>A tag is useful if you have more than one limit item in the same limit and want to create any kind of sublimit in that limit where the calculation uses 'output' from a specific one (or more, but not all) limit item in the limit. For example, the sublimit expression 'sum()' means 'sum of all outputs from all limit items in the limit' and 'sum(abc)' means 'sum of all limit items with tag 'abc' in the limit'.</p> <p>Note: Avoid names with special characters, since these can be misinterpreted by TRM; for example, a dash ( - ) can be interpreted as a minus sign. Also, avoid names that could be misinterpreted with other entities in TRM. Also, be aware that tags are case-sensitive; for example, TRM considers "EXP" to be a different tag from "exp".</p>
Allow Duplicates	<p>Switch on if you want to allow all cashflows matching the query to be included in the limit calculation, even if they have already been included in a limit item with a higher order number.</p> <p>Usually, TRM monitors the limit items according to the order you specify using the <b>Order Number</b> field, and ignores any cashflows in later limit items that it has already found in earlier limit items. This is to avoid cashflows from being duplicated, so that you do not unintentionally multiply the exposure.</p>

5. In the fields **Expression** and **Pre-Settlement Expression**, define the calculation method, or methods, used for cashflows (before or after settlement date).

Before you enter any expressions, note the following:

- You can have a different expression for each field. If you want the same expression for both fields, you can enter it in the **Expression** field only, and the other field automatically takes the same expression.
- If you want no output at all for **Pre-Settlement Expression**, you must type or select 0 (zero): if you leave the field blank, the output will default to the expression you select for **Expression**.

The following table explains the basic expressions that are available from the **Expression** selection lists.

Expression	Output
0	Zero expression, giving 0 as output.
accrued_book_value	Total of the transaction book value and the accrued part of the premium or discount.
accrued_interest	Outstanding accrued interest as of end date of the limit server calculated in currency of the limit server
accrued_interest_local	Outstanding accrued interest as of end date of the limit server in cashflow currency
accrued_profit	Outstanding accrued profit as of end date of the limit server calculated in currency of the limit server
accrued_profit_local	Outstanding accrued profit as of end date of the limit server in cashflow currency
accrued_result	Periodic accrued result combining periodic changes in accrued interest and accrued profit between the start date and end date (normally, current date) of the limit server including realized interest and accrued profit during the period

Expression	Output
amount	Payable amount (or estimated payable amount) of a cashflow.
book_value	Original book value of a cashflow or transaction in the currency of the limit server.
collateral_amount	Nominal Amount of collateral instrument held as collateral. This figure is calculated for collateral entries of transactions, not for cashflows
collateral_market_value	Current market value of the collateral held
collateral_requirement	Collateral requirement calculated for collateralized transactions
collateral_units	Number of units of collateral instrument held as collateral
collateral_value	Current market value of the collateral held adjusted with Collateral Haircut of the collateral entry
deal_nominal_amount	<p>Nominal amount for only one cashflow (the primary cashflow) in the transaction. Needed for those instruments that have two nominal amounts that cancel each other out, namely FX transactions (which have a nominal amount per currency), and IR swaps (which have a different nominal amount per leg):</p> <ul style="list-style-type: none"> <li>• In FX spot, forward and option transactions, deal nominal amount = nominal amount of the base currency cashflow.</li> <li>• In FX swap transactions, deal nominal amount = nominal amount of the base currency cashflow of the far leg of the swap.</li> <li>• In IR swap transactions, deal nominal amount = nominal amount of the cashflows in leg 1 of the swap.</li> </ul> <p>In all other cases, deal_nominal_amount is identical to nominal_amount.</p>
delivery_amount	Amount for a deliverable instrument (in a delivery cashflow).
delivery_units	Number of units for a deliverable instrument (in a delivery cashflow).
duration	Aggregated duration of all cashflows in the position.
duration_days	Aggregated duration in days of all cashflows in the position.
duration_negative	Duration of the negative cashflows in the position.
duration_positive	Duration of the positive cashflows in the position.
effective_convexity	Effective convexity (a measure of the non-linearity of the position).
effective_duration	Aggregated effective duration of all cashflows in the position.
effective_duration_negative effective_duration_positive	Effective duration of the negative cashflows (effective_duration_negative) and positive cashflows (effective_duration_positive) in the position.
elasticity	Elasticity of the cashflow or transaction.
factor	Scaling factor set that you specify in the <b>Limit Factor Set</b> field (see below).
fx_exposure	FX exposure of the cashflow or transaction.
fx_profit	Outstanding fx profit as of end date of the limit server
fx_result	Periodic change in fx profit between the start date and end date (normally, current date) of the limit server including realized fx profit during the period.
gamma_value	Gamma value of the cashflow or transaction.
interest_result	Periodic change in accrued interest between the start date and end date (normally, current date) of the limit server including realized interest during the period.
intrinsic_value	Intrinsic value calculated for options.

Expression	Output
ir_exposure_1	IR exposure calculated as the average of the market value one basis point shift in the interest rate in either direction.
ir_exposure_down ir_exposure_up	IR exposure measured by moving rates down (ir_exposure_down) or up (ir_exposure_up) by the number of basis points given as the risk offset in the portfolio of the cashflow or transaction.
ir_sensitivity_up ir_sensitivity_down	Money gain/loss resulting from the parallel shift of the valuation curve by the offset specified at portfolio level.
issue_size	Defined in the Outstanding Size field at the instrument level (Security Info feature - <b>Security Info</b> page).
local_book_value	Original book value of a cashflow or transaction in cashflow currency.
market_value	Current market value of the cashflow or transaction.
mtom_profit	Outstanding mtom profit as of end date of the limit server calculated in currency of the limit server
mtom_profit_local	Outstanding mtom profit as of end date of the limit server in cashflow currency
mtom_result	Periodic change in mtom profit between the start date and end date (normally, current date) of the limit server including realized sell profit during the period
market_value_share_of_equity	Percentage expressed in terms of market value of held equities over the whole equity issue.
mv_share_of_equity_float	Percentage expressed in terms of market value of held equities over the equity issue in circulation.
nominal_amount	Nominal amount of the cashflow.
nominal_share_of_equity	Percentage expressed in terms of nominal amount of held equities over the whole equity issue.
nominal_share_of_equity_float	Percentage expressed in terms of nominal amount of held equities over the equity issue in circulation.
other_profit	Outstanding other profit as of end date of the limit server calculated in the currency of the limit server
other_profit_local	Outstanding other profit as of end date of the limit server in cashflow currency
other_result	Periodic change in other profit between the start date and end date (normally, current date) of the limit server
rho_risk	rho risk of the cashflow or transaction.
risk_value	Cashflow amount of any cashflow with IR exposure (payable or not payable). When you want to measure sensitivity, you often measure the IR exposure. Sometimes you might want to see the exposure as an amount of money (cashflows) in a date period. risk_value enables you to do this, even for derivatives (since it makes no distinction between real and pseudo cashflows).
spot_nominal_amount	<ul style="list-style-type: none"> <li>For IR instruments, the nominal spot amount. In other words, the same as Treasury Monitor's Spot Nominal Amount (Normal).</li> <li>For IR options, the delta equivalent of the nominal amount.</li> </ul> Compare with underlying_spot_units, which is the equity equivalent of this expression.



Expression	Output
spot_value	<p>Spot value gives the amount of an FX spot transaction that would hedge the FX exposure of the position. In most cases, this is the local market value of the instrument given at spot.</p> <p>The exception is FX derivatives, where spot value is based on the delta of the option. Also, if the market value of an FX forward deal is calculated with the Quoted method (i.e. using forward FX points instead of the valuation curve of the currency), then the spot value is based on present value, which is calculated using the forward curve, instead of market value.</p>
strike_price	Strike price of the transaction.
time_risk	Time risk of the cashflow or transaction.
total_profit	Outstanding total profit (some of all profit components) as of end date of the limit server calculated in currency of the limit server
total_profit_local	Outstanding total profit (some of all profit components) as of end date of the limit server in cashflow currency
total_result	Periodic change in total profit between the start date and end date (normally, current date) of the limit server, including all profit components realized during the period
underlying_market_value	Current market value of the instrument underlying the option, which has the same exposure as the option itself.
underlying_spot_units	<ul style="list-style-type: none"> <li>For equities, the number of underlying units. In other words, the same as Treasury Monitor's Underlying Units (Normal).</li> <li>For equity options, the delta-adjusted number of units that the option is written on.</li> </ul> <p>Compare with spot_nominal_amount, which is the IR instrument equivalent of this expression.</p>
units	Number of units of the cashflow or transaction
value_at_risk	<p>Value-at-risk measured for the cashflows matching the limit item.</p> <p>This limit item can be combined with the "sum" or "query_total" sublimit expressions (item_total will not work).</p> <p>For this expression, you can specify parameters in the following way: value_at_risk(currency,confidence interval)</p> <p>The currency parameter must be set to the same currency as the sublimit in which it is used, for correct results. The confidence interval parameter is used to set the confidence interval (99, 95, and so on) used for the VaR calculations. If nothing is specified here, then the confidence interval set at limit server level is taken by default.</p>
value_at-risk_eq	<p>Price value-at-risk measured for the cashflows resulting from EQ deals matching the limit item.</p> <p>The same conditions apply to this as to the value_at_risk expression.</p>
value_at-risk_fx	<p>FX Value-at-risk measured for the cashflows resulting from FX deals matching the limit item.</p> <p>The same conditions apply to this as to the value_at_risk expression.</p>
value_at-risk_ir	<p>IR Value-at-risk measured for the cashflows resulting from IR deals matching the limit item.</p> <p>The same conditions apply to this as to the value_at_risk expression.</p>
value_at-risk_fx_ir_eq	<p>FX/IR/Price value-at-risk measured for the cashflows matching the limit item, assuming no correlation between EQ, FX, and IR markets.</p> <p>The same conditions apply to this as to the value_at_risk expression.</p>

Expression	Output
value_at_risk_uncorr	value_at_risk measured for the cashflows matching the limit item, assuming no correlation between market variables. The same conditions apply to this as to the value_at_risk expression.
value_at_risk_undiv	value_at_risk measured for the cashflows matching the limit item, assuming perfect correlation between market variables. The same conditions apply to this as to the value_at_risk expression.
vega_risk	Vega risk of the cashflow or transaction.
votes	Number of votes that you are holding. Compare with votes_share_of_equity (), which gives the percentage of voting rights.
votes_share_of_equity ()	Held equities divided by total voting rights, expressed as a percentage.

You can combine any of the above expressions, and perform mathematical functions on them, to give a more specific result. You can add ( + ), multiply ( \* ), subtract ( - ) and divide ( / ) two or more key-figures, or key-figures and actual numbers. Here are some examples:

Syntax	Result
market_value * 0.15	15% of market value.
market_value + 0.1 * deal_nominal_amount	Sum of market value, plus 10% of deal nominal amount.
max(market_value, 0.15 * deal_nominal_amount)	Market value or 15% of deal nominal amount, depending on which is the larger.

Note that the system does not monitor the syntax of modified expressions. All elements of the expressions have to be written in lowercase letters: for example, abs(market\_value), and not ABS(market\_value). Spaces between the elements of the expression, however, are optional.

- In the **Limit Factor Set** field, specify a limit factor set, if you want to scale a limit. For a limit factor set to apply to a limit item expression, you must add `factor` to that expression.
- Define how you want to group (that is, to net) cashflows with the limit item by turning on the relevant netting switches and fields. If no netting switches are set, all cashflows matching the limit item queries will be aggregated and a single exposure will be calculated for them using the expression of the item. Setting one or several of the netting switches produces a separate exposure for each combination of selected netting variables.

For example, instead of having a limit item for all FX spot exposure, you can have FX exposure netted **By Portfolio**. Scaling by factor as well as sublimit query and grouping all take place on the level of netting output which means that factors, sublimit query and sublimit grouping can only be made dependent on the attributes of cashflows which have been used in limit item netting. To apply different scaling for different portfolios, query exposures of a specific portfolio in a sublimit or apply sublimit grouping by portfolio, netting **By Portfolio** must be set in the limit item.

Netting switch	Example of usage
By Payment Date	Settlement limits.
By Delivery Date	Risk limits by the dates on which securities are delivered (namely the value dates of delivery cashflows).
By Transaction	Credit limits where transactions with a positive exposure are not allowed to be netted with transactions with a negative exposure.
By Bank	Settlement limits that are set against a bank instead of the counterparty.

Netting switch	Example of usage
By Account	Settlement limits that are set against an individual bank account instead of a payment correspondent or the counterparty.
By Currency	Risk limits by currency.
By Currency Class	Risk limits by currency class.
By Instrument Group	Risk limits by instrument group.
By Instrument	Risk limits by instrument.
By Underlying Instrument	Risk limits by underlying instrument.
By Leg/Delivery Instrument	One of the following: <ul style="list-style-type: none"> <li>Separating the two legs of an interest rate swap (usually a fixed and a floating leg).</li> <li>Identifying a delivery instrument in delivery flows of a transaction that has a collateral instrument; for example, with repo transactions consisting of deposits with bonds as collateral, the netting can be used to identify the bond instrument.</li> </ul>
By Branch Code #0-#19	Risk limits by branch code. Useful for investment management in equities, limiting how much of the portfolio can be invested in a certain industry, country, and so on. Branch codes are defined in Branch Code Editor and assigned to instruments in Instrument Editor.
By Portfolio Owner	Risk limits by portfolio owner.
By Portfolio	Risk limits by portfolio.
By Client	Risk limits by client. If the limit item query matches cashflows against several counterparties or in instruments issued by several issuers, this netting can be used to produce separate exposures for each of them. Note that the identified client is dependent on the selected Client Query Mode.
Parent Level By Parent	Risk limits by parent client. You define client/parent relationships in Client Editor. If no parent level is specified, the oldest parent of the client is used. If the specified level does not exist, then an empty parent id is returned.
By Risk Country	Risk limits by country (as defined in Country Editor). You assign Risk Countries to clients in Client Editor.
Package Main Type	Identifies the package main type (as defined in Package Type Editor) to be used in risk limits by package type and by package. Both <b>By Package Type</b> and <b>By Package</b> nettings only work if a valid Package Main Type has been given.
By Package	Risk limits by package. To do this, you combine Package netting at the limit item level with <b>Expand by Netting Output</b> in the sublimit definition.
By Package Type	Risk limits by package type (as defined in Package Type Editor).
Client Rating/ By Client Rating Code By Instrument Rating/ By Instrument Rating Code	Risk limits by credit rating, either for the issuer or the instrument, where: <ul style="list-style-type: none"> <li><b>Rating</b> gives the rating agency and type (for example Moody's long rating, or Standard &amp; Poors short rating) to be used</li> <li><b>Rating Code</b> gives the actual rating (A+, BB, and so on).</li> </ul> You must select a value for the <b>Rating</b> field, for the <b>Rating Code</b> switch to work. The credit ratings themselves are defined in Credit Rating Editor.
Client Group Client Main Group	Risk limits by Client Groups (as defined in Client Editor's <b>Groups</b> page).

Netting switch	Example of usage
By Guarantee Level	Guarantee-related netting is primarily meant to be used as a means to apply scaling with factors which are dependent on the type and quality of guarantees received against the transaction. It can be used when scaling must be dependent on Guarantee Level.
By Guarantee Type	Can be used when scaling must be dependent on Type of guarantee.
By Guarantee Parameter #0-#19	Can be used when scaling must be dependent on Guarantee parameters, defined in Parameter Editor.

8. If you want the limit item to be netted by maturity gap, risk gap, or delivery gap:
- Use the **Gap Set** field to select the gap set you want to use.
  - Select the relevant switches (**By Risk Gap**, **By Maturity Gap**, **By Delivery Gap**).
  - In the **Spot Days** field, specify the number of days used to calculate the gap in which the cashflow falls. This is used if the spot days and the calendars for the currencies of the cashflows do not match the base currency of the portfolio.
  - If you want to use relative IR exposure in limits, select the gap set and switch on **By Risk Gap** and **Relative Risk Gap**.

If the **Relative Risk Gap** switch is on, the key-figure amount is attributed proportionally to the adjacent gaps. Otherwise all key-figure amounts are attributed to the closest gap.

You can specify which gap periods from the gap set are to be used for individual sublimits (using the **Risk Gap From/To**, **Maturity Gap From/To**, and **Delivery Gap From/To** fields). This is done in Limit Editor's **Sublimits** sub-page in the **Sublimit Query** section).

Note that, for the netting to work, the sublimit must use the same gap set as the limit item.

See 16.2.6.2 *Defining sublimits for a limit* on page 468.

9. A limit item normally produces an exposure as of the end date of the limit server. This exposure can be split into smaller components using netting switches but even if the exposure is, for example, netted by Maturity Gap, it is still calculated for the current moment in time.

In order to support identification of limit exposure as of future points in time, netting by **Affect Date** can be used in combination with another setup supporting this. The principle of affect date netting is that, instead of a single limit effect, each cashflow produces two incremental effects: one initializing the limit effect of the cashflow at affect start date and another one reversing it at affect end date. When sublimit grouping by **Affect Date** is used together with the **Expand by Netting Output** option, limit item exposures are grouped by **Affect Date** in a cumulative manner to produce

a timeline of limit exposure where, for example, exposure of a deposit transaction can be seen to start on the value date of the transaction and end on the maturity date of the transaction.

Field	Description
Affect Start Date	Controls the date assigned as affect start date for the cashflow. The following dates are supported: <ul style="list-style-type: none"> <li>• Current Date Current date of the limit server</li> <li>• Payment Date Payment date of the cashflow is used when the server is running for a date before the payment date of the cashflow and current date is used when the server is running for a date after the payment date of the cashflow</li> <li>• Maturity Date Maturity date of the transaction</li> <li>• Risk Date Risk date of the cashflow</li> <li>• Value Date Value date of the transaction is used when the server is running for a date before the value date of the transaction and current date is used when the server is running for a date after the value date of the transaction</li> </ul>
Affect Start Date Offset	Number (positive or negative) of days to be added to selected date when assigning affect start date to a cashflow.
Affect End Date	Controls the date assigned as affect end date for the cashflow. The same dates as for Affect Start Date are supported.
Affect End Date Offset	Number (positive or negative) of days to be added to selected date when assigning affect end date to a cashflow.
Netting By Affect Date	Activates netting by affect date treatment
Netting By Affect Gap	Activates netting by Affect Gap treatment. This works with the same principle as netting by Affect Date but aggregates all affect dates within the same gap into a single exposure using gap set identified in field Gap Set
Use Business Days Offset	When used in combination with Affect Start/End Date Offset, this makes the offset to be calculated as business days using the calendar of the currency of limit server (currency of the top portfolio for which the server is running)

**10.** Save the global limit item definition using **File - Save As New**.

### 16.2.3 Creating sublimit calculation templates

A sublimit is the actual limit you want to apply to a selected group of transactions, for example, the FX spot limit for a particular bank, or the IR exposure of a particular portfolio. The sublimit calculation template defines how exposures produced in limit items are aggregated for the sublimit.

Sublimit calculation templates are defined in Sublimit Calculation Template Editor and can be assigned to multiple limits or to multiple sublimits within the same limit.

To create a sublimit calculation template:

1. In Sublimit Calculation Template Editor, enter a unique ID and name for the sublimit calculation template.
2. In the **Limit Usage Expression** field, use the following table to enter the expression that defines how you want the sublimit to be calculated from the limit item exposures. This field is limited to 1024 characters. For long expressions, you can use the short version of the name. These short names

are displayed between parentheses in the **Name** column of the expression selection list. For example, the short name for `duration ()` is `_dur`.

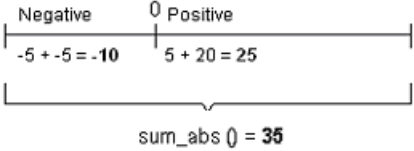
**Note:** If you have configured a client-specific limit amount in the Client Editor and used it in one or several clients to make the limit refer to a particular financial attribute of the client entity, this is available for selection from this field in addition to all standard expressions (see 3.13.1.8 *Configuring counterparty-specific limit amounts* on page 96).

**Hint:**

For long expressions, you can press **Ctrl+F2** to view the full expression.

Expression	Description
<code>duration ()</code>	<p>Adds outputs from limit items using one of the following expressions: <code>duration ()</code>; <code>duration_positive ()</code>; <code>duration_negative ()</code>.</p> <p>In fact, if you selected <code>duration</code>, <code>duration_negative</code> or <code>duration_positive</code> for the limit item, you must select <code>duration</code> for the sublimit: this is because <code>duration</code> is aggregated as a relative value dependent on both the market value and the duration of the underlying cashflows, and cannot be simply summed up by using an expression such as <code>sum ()</code>.</p> <p>Used for risk limits for duration: for example, setting excepted deviations from benchmark durations.</p>
<code>effective_convexity ()</code>	<p>Adds the outputs from limit items that use <code>effective_convexity ()</code>.</p> <p>In other respects, works on the same principle as <code>duration ()</code> described above.</p>
<code>effective_duration ()</code>	<p>Adds the output from limit items that use one of the following expressions: <code>effective_duration ()</code>; <code>effective_duration_positive ()</code>; <code>effective_duration_negative ()</code>.</p> <p>In other respects, works on the same principles as <code>duration ()</code> described above.</p>
<code>elasticity ()</code>	<p>Adds the output from limit items that use the expression <code>elasticity ()</code>.</p> <p>In other respects, works on the same principles as <code>duration ()</code> described above.</p>
<code>item_duration ()</code> <code>item_effective_convexity ()</code> <code>item_effective_duration()</code> <code>item_elasticity()</code>	<p>The expressions with the "item_" prefix are variations of corresponding standard expressions which aggregate all limit item netting outputs, whether or not they have been queried into the Sublimit, and whether or not they have been expanded in the Sublimit.</p> <p>For example, a limit for maximum allowed deviation in duration between a position in a queried portfolio and the whole position of a limit item can be defined by using a Sublimit query against that portfolio and by using the following Sublimit Expression (against a Limit Item with Tag "mm"):</p> <p><math>(duration(mm) - item\_duration (mm))</math></p> <p><code>duration (mm)</code> would produce the duration in the queried portfolio in Limit Items with Tag "mm" and <code>item_duration (mm)</code> would produce the total duration in Limit Items with Tag "mm".</p>
<code>item_total()</code> <code>item_total_abs()</code> <code>item_total_negative()</code> <code>item_total_positive()</code> <code>item_total_units()</code>	<p>Item total expressions are variations of the corresponding sum expression which aggregates all limit item netting into a total, regardless of whether they have been queried into the Sublimit or not, and regardless of whether they have been expanded in the Sublimit or not.</p> <p>For example, a limit for the maximum % of total market value that any single instrument may have in the total position can be defined by using an Expand by Netting Output option in sublimit and by using the following Sublimit Expression (against a Limit Item with Tag "mm"):</p> <p><math>(sum(mm) / item\_total (mm)) * 100</math></p> <p><code>sum (mm)</code> would produce the exposure in the instrument of the grouping in Limit Items with Tag "mm" and <code>item_total (mm)</code> would produce the total exposure in Limit Items with Tag "mm".</p>

Expression	Description
item_value()	This expression can only be used together with the sum_if () expression. item_value () produces the values against which the filter is applied and simply refers to individual limit item outputs. As in most other expressions, a reference against a specific tag can be given within the brackets.  For example, if a limit item is netted <b>By Issuer</b> , the expression item_value () would refer to each issuer-specific output from the limit item.
market_value_share_of_equity ()	Adds the outputs from limit items that use the expression market_value_share_of_equity.  In other respects, works on the same principles as duration () described above.
query_total () query_total_abs () query_total_negative () query_total_positive () query_total_units ()	Query_total expressions are variations of corresponding sum expression which aggregate all limit item netting outputs matching the sublimit query into a total, regardless of whether they have been expanded in the Sublimit or not.  For example, a limit for the maximum % of total market value that any one instrument may have in the position of a specific portfolio can be defined by using limit item netting per instrument and per portfolio, sublimit groupings per instrument together with Expand by Netting Output option in sublimit, sublimit query against the specific portfolio and by using the following Sublimit Expression (against a Limit Item with Tag "mm"):  (sum (tag-x) / query total (tag-x))*100  where sum gives the exposure in the instrument of the grouping in the queried portfolio in Limit Items with Tag "mm" and query total gives the exposure of all instruments in the queried portfolio of Limit Items with Tag "mm".
rel_value_at_risk (tag1, tag2, conf)	The relative VaR between the sets of cashflows matching the limit items with tag1, and tag2. In normal cases, tag1 would be used for the position, and tag2 would be used for the benchmark against which the relative VaR is being measured. For this expression to work correctly, the limit items should use the expression "market_value".  The "conf" parameter is used to set the confidence level used for the VaR calculation (99, 95, and so on). If this is not specified, then the confidence level specified at limit server level is used by default.
rel_value_at_risk (tag1, tag2, conf) rel_value_at_risk_eq (tag1, tag2, conf) rel_value_at_risk_fx (tag1, tag2, conf) rel_value_at_risk_fx_ir_eq (tag1, tag2, conf) rel_value_at_risk_ir (tag1, tag2, conf) rel_value_at_risk_uncorr (tag1, tag2, conf) rel_value_at_risk_undiv (tag1, tag2, conf)	These expressions calculate various types of rel_value-at-risk for instruments affected by the relevant variable.  For example, rel_value_at_risk_eq () is for instruments affected by equity variables, rel_value_at_risk_ir is for instruments affected by interest rate changes, and so on.  In normal cases, tag1 would be used for the position, and tag2 would be used for the benchmark against which the relative VaR is being measured.  For these expressions to work correctly, the limit items should use the expression "market_value".  The "conf" parameter is used to set the confidence level used for the VaR calculation (99, 95, and so on). If this is not specified, then the confidence level specified at limit server level is used by default.
sum ()	Adds all outputs. For example, -10 +25 = 15.

Expression	Description
sum_abs ()	<p>The sum of absolute values, namely the spread between the total of all negative figures and the total of all positive figures. For example:</p> <div style="text-align: center;">  </div> <p>Mainly used in risk limits where, for example, FX exposure is netted by currency but the total exposure is calculated by adding up the absolute risks in each currency.</p> <p>If you set a grouping switch to specify Sublimit grouping, values in that Sublimit grouping will be aggregated before this expression is applied.</p>
sum_if ()	<p>This expression can only be used together with the item_value () expression. sum_if () produces the sum of all item_value () outputs matching the filter criteria. You must specify two parts for the expression within the brackets. These are:</p> <ul style="list-style-type: none"> <li>• An item_value () expression. This can in turn, be modified by other functions. For example: abs (item_value ()) You can also combine item_value () with other expressions, for example item_value () / item_total ()</li> <li>• A filter condition which is applied against the modified output of item_value (), for example "&gt;0.05". Note that any references to specific tags are given in the item_value () expression.</li> </ul> <p>sum_if () produces the sum of all modified outputs of item_value () matching the given filter condition as a simple total. This value is given as a Limit Amount for the sublimit.</p> <p>If you set a grouping switch to specify Sublimit grouping, values in that Sublimit grouping will be aggregated before this expression is applied.</p>
sum(x)_max()	<p>The sum of x highest Expansion Level Limit Amount outputs from Sub_limit. For example, a limit for the maximum % of total market value that the five highest Expansion Level outputs (such as instruments) can account for could be defined by using the following Sublimit Expression: ( sum(5)_max () / sum() ) * 100</p> <p>If you set a grouping switch to specify Sublimit grouping, values in that Sublimit grouping will be aggregated before this expression is applied.</p>
sum(x)_min()	<p>The sum of x lowest Expansion Level Limit Amount outputs from Limit Item(s). For example, a limit for the maximum % of total market value (in this case negative, perhaps in a loan portfolio) that the five lowest Netting Level outputs (such as instruments) can account for could be defined by using the following Sublimit Expression: ( sum(5)_min() / sum() ) * 100</p> <p>If you set a grouping switch to specify Sublimit grouping, values in that Sublimit grouping will be aggregated before this expression is applied.</p>



Expression	Description
sum_mismatch (tag1,tag2)	<p>This expression computes the sum of the groupings that have output from the first tag, but not from the following tags.</p> <p>For example:</p> <ul style="list-style-type: none"> <li>• Benchmark Portfolio BM has transactions from instruments A, B, and C</li> <li>• Investment Portfolio INV has transactions from instruments B, C, and D</li> </ul> <p>To get the A and D amounts from the limit, two limit items are required:</p> <ul style="list-style-type: none"> <li>• Tag "bm" takes all the transactions from Benchmark Portfolio BM, netted by instrument</li> <li>• Tag "inv" does the same from Investment Portfolio INV.</li> </ul> <p>The sublimit is grouped by instrument but not expanded.</p> <p>Therefore, the sublimit expressions should be:</p> <p>To get the A amounts: sum_mismatch(bm, inv)</p> <p>To get the D amounts: sum_mismatch(inv, bm)</p>
sum_negative ()	<p>The sum of negative figures only; all positive figures are ignored (-10 + 25 = -10).</p> <p>If you set a grouping switch to specify Sublimit grouping, values in that Sublimit grouping will be aggregated before this expression is applied.</p>
sum_positive ()	<p>The sum of positive figures only; all negative figures are ignored (-10 + 25 = +25).</p> <p>Mainly used in credit limits where you want only transactions with positive market values to affect the total exposure. Note that in this case, the limit item that the sublimit takes its input from needs to be netted by transaction.</p> <p>If you set a grouping switch to specify Sublimit grouping, values in that Sublimit grouping will be aggregated before this expression is applied.</p>
sum_units ()	<p>The sum of non-currency values, with no currency conversions performed.</p>
value_at_risk (tag,conf) value_at_risk_eq (tag,conf) value_at_risk_fx (tag,conf) value_at_risk_fx_ir_eq (tag,conf) value_at_risk_ir (tag,conf) value_at_risk_uncorr (tag,conf) value_at_risk_undiv (tag,conf)	<p>These expressions calculate various types of value-at-risk for instruments affected by the relevant variable.</p> <p>For example, value_at_risk_eq () is for instruments affected by equity variables, value_at_risk_ir is for instruments affected by interest rate changes, and so on.</p> <p>The tag parameter is used to set the tag of the limit item to be used in the VaR calculation.</p> <p>For these expressions to work correctly, the limit items should use the expression "market_value".</p> <p>The "conf" parameter is used to set the confidence level used for the VaR calculation (99, 95, and so on). If this is not specified, then the confidence level specified at limit server level is used by default.</p>
votes_share_of_equity ()	<p>Adds the outputs from limit items that use expression votes_share_of_equity.</p> <p>In other respects, works on the same principles as duration () described above.</p>

For example, if you want the sum of all calculations made by the limit item, select the `sum ()` expression. Then, between the parentheses, enter the name of the relevant limit item tag (as defined in Limit Item Template Editor). For example, if you want the sum of a limit item tag called "exp", update the expression `sum ( )` to `sum (exp)`. Tag names are case-sensitive: for example, "EXP" is not the same name as "exp".

You can modify the expressions in the same way that you can modify limit item expressions. In addition, you can combine tags, for example:

Syntax	Result
<p>sum(tag1)+sum(tag2)</p> <p>You can select the first item - in this case sum () - from the selection list, but you must manually type the second (if you try selecting a second, TRM assumes that you want to replace the first). Also note that TRM does not check the syntax of expressions, so be very careful to enter the item correctly.</p>	<p>The sum of tag1 plus the sum of tag2</p>

3. If the sublimit calculation template defines an intra-day limit of some kind in the **Valid From Time** and **Valid To Time** fields, specify the period when this sublimit is valid.
4. If the sublimit calculation template defines an intra-day limit of some kind in the **Time Zone** field, specify the time zone that applies to the times you have entered in the **Valid From Time, Valid To Time** fields.
5. Switch on **Expand By Netting Output** if you want to make the total sublimit amount (specified in the **Limit Usage Expression** field) apply to each of the groupings specified with the **Grouping Switches**.
  - If the switch is off, the total sublimit amount applies to the entire output of the sublimit.
  - If the switch is on, the total limit amount is per netted item rather than for the entire output of the sublimit.

This switch is used if you have a limit where the maximum exposure produced by any one netting output (for example, instrument, portfolio, client or payment date) is limited to the same maximum/minimum value. It can be used as an efficient means of simplifying limit setup when the same limit is shared by a large number of instances.

Note that **Expand By Netting Output** filters the limit item netting (as defined in Limit Item Template Editor). For example, if a limit item is netted **By Bank, By Currency, and By Leg Instrument** (Netting Switches), but the sublimit only has **By Leg Instrument** (Grouping Switches) switched on, the output is only expanded by leg instrument. Therefore, for the expansion by netting output to work, the corresponding Netting Switches must be turned on for the limit item.

6. If **Expand By Netting Output** is on, turn on the switch or switches that match the criteria by which you want to expand the output.
7. Specify the domain in which this sublimit template is available in the **Domain** field.
8. Save the sublimit calculation template definition using **File - Save As New**.

### 16.2.3.1 Conditionally aggregating limit item outputs

Some limits require a filter condition to be applied when summing up outputs from limit items.

A typical example of this is the "40" part of the standard "5/10/40" compliance rule applied in many investment portfolios. This means that you may invest up to 10% of the total funds market value in securities of any one issuer (limit 1). However, the total market value of the securities of issuers whose portion of the total funds market value exceeds 5% must not be greater than 40% of the total fund market value (limit 2).

In order to support the second part of this rule the following calculation steps must be followed:

1. Produce the output from the limit item netted by issuer.
2. Calculate the % share of each issuer in the portfolio.
3. Apply a filter on the above calculated values and select only those matching the filter ( >5%)
4. Calculate an aggregated total by summing up the values matching the above filter.

You can create the 5/10/40 rule using a combination of the `item_value ()` and `sum_if ()` expressions as follows:

```
100 * (sum_if (item_value () / item_total () > 0.05)) / item_total ()
```

This produces the percentage share of holdings in all individual issuers accounting for more than 5% of the total value of limit items.

## 16.2.4 Creating limit client queries

Limit client queries can be created to specify which clients are queried by the limit item. Limit item client queries can be assigned as Global Client Queries to multiple limits, or as Limit Item Client Queries to multiple limit items within the same limit.

Limit item client queries are created in Limit Client Query Editor.

To create a limit item client query:

1. Enter a unique ID for the limit item client query.
2. Select the client selection parameters you want.

You use the **Not** fields for exceptions.

Note that if you specify more than one selection parameter, the query is for only those cashflows that match all the parameters ("and" logic rather than "or").

The selection parameters are described in the following table:

Information	Description
Client Rating Client Min Rating Code Client Max Rating Code	<p>A specific credit rating of the client, where:</p> <ul style="list-style-type: none"> <li>• <b>Rating</b> gives the rating agency and type (for example, Moody's long rating, or Standard &amp; Poors short rating)</li> <li>• <b>Rating Code</b> gives the actual rating (A+, BB, and so on).</li> </ul> <p>By setting minimum and/or maximum rating levels of the credit rating, you can define a ratings order.</p> <p>You must select a value for the <b>Rating</b> field for the <b>Rating Code</b> fields to work.</p> <p>The credit ratings themselves are defined in Credit Rating Editor.</p>
Portfolio Owner	A specific portfolio owner (as defined in Client Editor).
Client	A specific client (as defined in Client Editor). This is useful if you want to create counterparty-issuer or credit limits against individual clients.
Parent	A specific client parent. You define client/parent relationships in Client Editor.
Client Main Group Client Group	<p>The group that a client belongs to (as defined in Client Editor's <b>Groups</b> page).</p> <p>You must select a main group before you can select a group, since this selection determines the list of groups displayed in the associated <b>Group</b> field.</p>
Risk Country	A specific country (as defined in Country Editor).
Risk Country Group	A group of countries.

3. Specify the domain in which this limit item client query is available.
4. Save the limit item client query definition, using **File - Save As New**.

## 16.2.5 Creating limit categories

Limit categories are used to link logically similar limits together. They can be used in limit monitoring to make it easier to monitor similar limits together and to easily recognize limits. Limit categories are defined in Limit Category Editor.

To create a limit category:

1. Enter a unique ID and name for the limit permission template.
2. Save the limit category definition using **File - Save As New**.

## 16.2.6 Creating limits

Limits provide the means of grouping limit items into logical entities; for example, you can have a limit named Counterparty Limit Anybank, containing all the limit items applying to a counterparty called Anybank and sublimits set to limit the exposures produced by them.

Limits are created in Limit Editor.

To create a limit:

1. Enter the main attributes of the limit using the information in the following table:

Information	Description
Template	Limit template on which to base this limit. A limit template can contain all or some of the information required to create a limit in Limit Editor. See <i>16.2.7 Creating limit templates</i> on page 470 for more information.
ID & Name	Unique ID and name for the limit.
Category	Category of the limit. You can use the category in Limit Monitor queries and grouping, as well as in Limit Log report, as a grouping and sorting criterion.
Global Client Query	Global client query that applies to limit items within this limit. Using the Limit Item <b>Client Query</b> field in the <b>Limit Item</b> sub-page of the <b>Limit Editor</b> page, you can specify different client queries for specific limit items. TRM checks in the <b>Limit Item Client Query</b> definition first: if it finds nothing there, the client query specified here in the <b>Global Client Query</b> field applies.
Usage Logging	<b>By Interval, Daily, and None</b> , depending on the frequency with which you want limit usage to be logged. Limit violations are always logged regardless of the selected usage logging.
Domain	Domain in which this limit is available.

2. Save the limit using **File - Save As New**.
3. Complete the limit definition using the information in the following sections.

### 16.2.6.1 Defining limit items for a limit

Limit item definition in a limit involves simply selecting limit item templates and optionally selecting a specific limit client query used to identify cashflows to be treated as specified in the limit item template.

To define the limit items for the limit:

1. Select Limit Editor's **Limit Items** page.
2. If you want to specify a limit item client query other than the one specified in Limit Editor's **Global Client Query** field, select the client query to use in the **Limit Item Client Query** field.
3. Select the limit item template to use in this limit item.
4. Click **Add** to add the limit item.
5. Save the whole limit definition using **File - Save**.

### 16.2.6.2 Defining sublimits for a limit

There are three parts to a sublimit, namely its definition, its calculation, and its query parameters. You set these up using Limit Editor's **Sublimits** page.

To create a sublimit for a limit:

1. Select Limit Editor's **Sublimits** page.
2. In the **Sublimit Definitions** section, fill in the fields using the information in the following table:

Information	Description
ID	Identifier of the sublimit definition.
Limit Currency	Currency of the sublimit definition. All limit item exposures that are queried for this sublimit are automatically converted from the original currency of the exposure to the currency you specify here.
Minimum Limit Maximum Limit	Expressions defining the minimum and maximum limit. You will probably usually only need to give a <b>Maximum Limit</b> . Here are some examples of situations where you may want to give both a minimum and maximum expression: <ul style="list-style-type: none"> <li>• You want to define a duration limit for a position where the duration must be kept within a certain range (for example, greater than 5.00 and less than 7.00).</li> <li>• You want to define a limit for a deviation between the actual portfolio and a benchmark portfolio. You may, for example, want to ensure that the difference in relative share of holdings in some specific asset type between the actual portfolio and a benchmark portfolio is kept within a certain range (for example, greater than -5.00% and less than +5.00%).</li> </ul> For either field, you can enter a number (such as 5.5 for a duration limit or 25,000,000.00 for a limit in market value). You can also give an expression to specify a value relative to limit item exposures: this is very useful if you want to specify an accepted deviation from a benchmark, rather than an absolute value. For example, for Maximum Expression you could enter: duration (xxx) + 2 where tag xxx refers to the limit item containing a benchmark portfolio, and 2 the number of units of the deviation (for example, two years, or whatever the duration unit happens to be). Supported expressions are exactly the same as for corresponding expressions in Sublimit Calculation Template. It is possible to make the maximum/minimum limit refer to a particular client-specific limit amount assigned to a client in Client Editor. These limit amounts are available for selection from these fields in addition to all standard expressions (see <i>3.13.1.8 Configuring counterparty-specific limit amounts</i> on page 96). For client-specific limit amounts to work, the Expand by Netting Output option must be used with sublimit grouping by Client.
Valid From Date Valid To Date	Dates defining the period when this sublimit is valid.

3. In the **Sublimit Calculation** section, in the **Template** field, select the sublimit calculation template that you want to use.
4. In the **Sublimit Query** section, select the parameters by which you want limit items to be queried when the sublimit is set for a specific subset of exposures produced by limit items. You can only query with parameters that are used as netting parameters in limit items of the same limit (for example, to select exposures in a specific instrument, limit items must be set up with netting by instrument). See *16.2.2 Creating limit item templates* on page 452

When defining the query by identifying the values to be queried in the supported parameters, note also the following:

Information	Description
Client Rating Client Min Rating Code Client Max Rating Code Instrument Rating Instrument Min Rating Code Instrument Max Rating Code	You must select the same value for the <b>Rating</b> field which is used in limit item netting for the query against <b>Rating Code</b> to work.  By setting minimum and/or maximum rating levels for the credit rating, you can define a query matching any ratings in the given range.
Gap Set Risk Gap From/To Maturity Gap From/To Delivery Gap From/To Affect Gap From/To	You must select the same value for the Gap Set field as used in limit item netting for the query against Gap to work. By setting From and/or To gaps, you can define a query matching any gaps in the given range.
Client Main Group Client Group	You must select the same value for the <b>Client Main Group</b> field as used in limit item netting for the query against <b>Client Group</b> to work.

5. Click **Add** to add the sublimit query.
6. Save the whole limit definition using **File - Save**.

### 16.2.6.3 Defining allowed users for a limit

By default, all users can access the limit in Limit Monitor and receive limit notifications from it. If necessary, access to a limit can be restricted to users or user groups identified in the **Allowed Users** page of Limit Editor.

To define allowed users for the limit:

1. Select Limit Editor's **Allowed Users** page.
2. Select the user or user group to whom you want to give access to this limit.
3. Select the permission as **ALL** or **READ**.
4. Click **Add** to add the allowed user.
5. Save the whole limit definition using **File - Save**.

## 16.2.7 Creating limit templates

A limit template can be used as a base for creating limits with similar attributes. See *16.2 Setting up limits* on page 449 for an overview of limit templates. Setting up a limit template is done in the same way as setting up a limit except that in the Limit Template Editor you can specify the status the fields will have in Limit Editor once the template has been applied. For example, you can apply one of the following statuses:

- **Editable:** you have access to the page and can provide a value. All mandatory fields are editable by default.
- **Ignore Template Value:** you will not override a value which was defined before you applied the template. This means that if a field is blank in the template, if you apply the template to an entity for which a value already exists for that field, the existing value is not replaced.

- **Mandatory:** you must provide values for mandatory attributes. Labels for mandatory fields are displayed in red in the corresponding editor.

To create a limit template, in Limit Template Editor:

1. Enter the main attributes of the limit template using the information in the following table:

Information	Description
Template	Unique ID for the limit template.
Template Name	Name of the limit template.
Domain	Domain in which the limit template is available.
Allowed Users	Specify the status that the <b>Allowed Users</b> fields will have in Limit Editor.
Sublimits	Specify the status that the <b>Sublimits</b> fields will have in Limit Editor.
Limit Items	Specify the status that the <b>Limit Items</b> fields will have in Limit Editor.

2. In the **Limit Main** page, enter information as detailed in *16.2.6 Creating limits* on page 468.
3. In the **Allowed Users** page, enter information as detailed in *16.2.6.3 Defining allowed users for a limit* on page 470. In the **Sublimits** page, enter the information as detailed in section *Defining sublimits for a limit (ref)*.
4. In the **Limit Items** page, enter information as detailed in *16.2.6.1 Defining limit items for a limit* on page 468.
5. Save the limit template. It can now be applied to a limit in Limit Editor.

## 16.3 Limit Monitor

Limit Monitor is used to analyze and monitor limits, sublimits, and to make queries against the limit server.

It is possible to design and save specific layouts (pages) and even complete suites of layouts (books). The pages and books can be user-specific or shared by several users or user groups.

Limit Monitor pages are saved with information such as access grouping, key-figures, limit queries, limit filters, limit selection, servers, and cells styles.

### 16.3.1 Limit Monitor menus

The following tables describe the menu items which are specific to Limit Monitor and any layout which is based on this application.

Other menu items which are common to all applications are described in *2.2.6 Using application menus* on page 34.

#### 16.3.1.1 File

Menu item	Description
Open Book	Opens an existing book.
Save Book	Saves any modifications made to the current book.
Save Book As	Saves a new book.
Close Book	Closes the current book.
Delete Book	Deletes the current book.

Menu item	Description
Book Properties	Opens the <b>Book Properties</b> dialog to allow you to view or modify the book's owner and user details. The owner is allowed to modify the book and the user or user group can use the book, but not modify its properties.

### 16.3.1.2 View

Menu item	Description
Select Columns	Opens a multi-selection list to allow you to select the column groupings that you want to display. See <i>16.3.3.1 Limit grouping values</i> on page 473 for information about the available values.
Select Rows	Opens a multi-selection list to allow you to select the row groupings that you want to display. See <i>16.3.3.1 Limit grouping values</i> on page 473 for information about the available values.
Swap Columns and Rows	Changes the display of the columns and rows: the columns become rows and the rows become columns.
Select Key-Figures	Opens a multi-selection list to enable you to select the key-figures you want to display. This selection list can also be opened from the <b>View - Select Columns</b> or <b>View - Select Rows</b> selection lists as follows: <ol style="list-style-type: none"> <li>1. Select <b>Key-Figures</b> as a grouping value.</li> <li>2. Right-click <b>Key-Figures</b> in the right side of the selection list.</li> <li>3. Select <b>Configure Values</b>.</li> </ol> See <i>16.3.3.1.6 Key-figures</i> on page 474.
Zoom In Zoom Out Zoom to Default	Allows you to zoom into the display (to enlarge the figures), zoom out (to see more of the grid), or zoom to default (to reset the original zoom).
Freeze Columns	Locks the selected column and all columns to the left of it. This allows you to scroll through the remaining columns, while the columns in the non-scrolled area remain visible.
Move Page Left	Moves the current page in the display to the left.
Move Page Right	Moves the current page in the display to the right.
Visual Settings	Changes the display: select from <b>Blue Headers</b> , <b>Gray Headers</b> , or <b>Normal Headers</b> .

### 16.3.1.3 Edit

Menu item	Description
Copy	Copies the values in the selected rows or columns. You can then paste the values into another application.
Copy Page	Copies the current page including headers. You can then paste the values into another application.
Select/Unselect All	Selects or unselects all cells in the current page. You can then use <b>Edit - Copy</b> to enable you to paste the values into another application.



### 16.3.1.4 Page

Menu item	Description
New Grid Page	Inserts a new page with the default layout. A group of pages can be saved in a book using <b>File - Save Book As</b> .
New Duplicate Page	Creates a new page with the same properties as the current page.
Copy Page From	Opens a list from which you can select a page in one book to copy it into the current book.
Remove Page	Removes the current page from the book. You need to select <b>File - Save Book</b> for the removal to be taken into account.
Rename Page	Opens the <b>Set Page Name</b> dialog so you can rename the page.
Page Parameters	Displays the details for the current page, including position parameters and the page layout (rows and columns).

### 16.3.2 Start-up parameters

It is possible to alter the start-up parameters so that Limit Monitor launches in a different mode. See *C.4 Limit Monitor* on page 682 for information about the options available.

### 16.3.3 Configuring limits

You can customize Limit Monitor according to your personal preferences by creating pages or groups of pages in books, by selecting the rows and columns you want to be displayed in each page, and by selecting the values or key-figures you want to monitor.

You can create and save the pages in multiple books either for your own personal use, or to be shared by other users.

#### 16.3.3.1 Limit grouping values

You can select the axis values you want to display in a page using **View - Select Columns** or **View - Select Rows**. The following tables explain the different values in each available grouping.

##### 16.3.3.1.1 Limit properties

The values available in the **Limit Properties** grouping are:

Value	Description
Limit Category	Category of the limit to which the sublimit belongs (and therefore the category of the sublimit itself). The category is set in the <b>Category</b> field of the limit definition. The values available here can be configured in Limit Category Editor.
Limit	ID of the limit.
Limit Name	Name of the monitored limit.
Limit Comment	Comment of the monitored limit.

##### 16.3.3.1.2 Sublimit properties

The values available in the **Sublimit Properties** grouping are:

Value	Description
Limit Currency	Currency in which the sublimit values are displayed.

Value	Description
Sublimit	ID of the sublimit.
Limit Usage Expression	The expression that defines how the sublimit is calculated.
Minimum Limit Expression	The expression that defines how the minimum value is calculated.
Maximum Limit Expression	The expression that defines how the maximum value is calculated.
Valid From Date, Valid To Date	Dates defining the period when this sublimit is valid.

### 16.3.3.1.3 Sublimit grouping

These grouping values are used for sublimits which have been expanded by netting output to display grouping values by which the limits have been expanded (for example, if sublimit is expanded by instrument, 'Grouped by Instrument' must be used to see the exposures of individual instruments). They available groupings are described in *16.2.3 Creating sublimit calculation templates* on page 461.

### 16.3.3.1.4 Sublimit query

These grouping values are used for limits which have sublimit queries specified in the limit definition. They are described in the section *16.2.6.2 Defining sublimits for a limit* on page 468.

### 16.3.3.1.5 Server type

If you use multiple servers, for example, to monitor simulated or final limits, it is possible to select them as an axis value. The possible values are:

Value	Description
Final Limits	To group final limits.
Simulated Limits	To group simulated limits.

### 16.3.3.1.6 Key-figures

Every **Limit Monitor** page must have the grouping parameter **Key-Figure** selected either as rows or columns. You can then separately select the key-figures shown in that grouping either from a separate **Select Key Figures** selection dialog or by right clicking the selected **Key-Figure** grouping in the selection dialog for limit groupings and selecting **Configure Values**.

The following table explains the key-figures you can select in Limit Monitor and the result shown for the selected figure:

Key-figure	Shows this result (for the period defined in Limit Monitor start-up)
Available Limit (%) of Maximum	How much of the amount given in the sublimit's Maximum Expression, and Minimum Expression, fields is still available:
Available Limit (%) of Minimum	
Available Limit to Maximum	<ul style="list-style-type: none"> <li>Available Limit (%) of Maximum and Available Limit (%) to Minimum express the amount as a percentage</li> <li>Available Limit of Maximum and Available Limit to Minimum express the amount as a value.</li> </ul>
Available Limit to Minimum	Compare with Used Limit (%) of Maximum, and Used Limit (%) of Minimum, which show the percentage used, rather than the percentage still available.
Limit Amount	The current sum/total for the sublimit, expressed in the currency set for the sublimit (use the Limit Currency grouping to see the currency).

Key-figure	Shows this result (for the period defined in Limit Monitor start-up)
Maximum Limit Amount	The maximum value for the sublimit. The value is expressed in the currency set for the sublimit.
Minimum Limit Amount	The minimum value for the sublimit. The value is expressed in the currency set for the sublimit.
Used Limit (%) of Maximum Used Limit (%) of Minimum	How much of the amount given in the sublimit's Maximum Expression and Minimum Expression fields has been used, expressed as a percentage. Compare with Available Limit (%) of Maximum, and Available Limit (%) of Minimum, which show the percentage still available, rather than the percentage used. You can also see the amount as an actual figure, see Limit Amount.
Used Limit (%)	Larger of Used Limit (%) of Maximum and Used Limit (%) of Minimum. The primary purpose of this key figure is to enable sorting of limits in such a manner that limits which are closest to being broken are displayed first regardless of whether the limit is closer to Maximum Limit Amount or Minimum Limit Amount

### 16.3.3.2 Sorting data

By default, data is sorted according to the values of the rows and columns. However, within each grouping level, you can alternate between having the data sorted in ascending or descending order.

To sort data in the display:

- Right-click the row or column header, and select **Sort Ascending** or **Sort Descending**.

It is possible to override the rows and columns sorting and have data sorted instead by the content of the key-figure columns.

To sort data by content:

- Right-click the key-figure header and choosing one of the **Sort Ascending** or **Sort Descending** options.

If two or more key-figures are selected for sorting, then the data is first sorted by the content of the left-most column or top-most row. If the contents of some of the cells in the first sorting are equal, then the data is next sorted by the content of the next column or row, for which the key-figure has one of the sort options selected.

### 16.3.3.3 Configuring limit selection and queries

Limit selections and queries can be configured in Limit Monitor. They are used to select which limits are displayed, according to some criteria.

- Limit selection is used to select the limits to be displayed.
- Limit queries are used to select only those limits which match some criteria in the limit configuration. For example, they can be used to display only those limits which have specific data entered in the **Limit Client Query** used by the limit, or which have specific values entered in the sublimit query section of the **Sublimit** page of Limit Editor.

Limit queries and selections can be configured either for personal use only or to be shared among all users (by turning on a **Shared** switch in the corresponding dialog). The configuration is saved with the page properties and is applied again automatically each time the page is opened.

#### 16.3.3.3.1 Selecting limits

To select the limits you want to display:

1. Select **Data - Limits**.
2. Use the arrows in the multi-selection list to select limits.
  - If the **Include All** switch is on, then all the limits are shown in the multi-selection list, but disabled. If this switch is off, you can select any combination of limits from the multi-selection list.

- If the **Require Queries** switch is on, sublimits of the selected limits are never shown in Limit Monitor unless they match specific queries. No sublimits are shown when queries are not used. If the **Require Queries** switch is not on, all sublimits of the selected limits are shown when queries are not used.

3. Click **OK** to save the selection.

### 16.3.3.3.2 Creating client name limit queries

You use client name limit queries if you want Limit Monitor to display only those limits where client parameters entered in the **Limit Client Query** used in the limit match the queried client.

**Hint:** For example, if you have configured some limits which have Counterparty X specified as the client in the **Limit Client Query** used in the limit, then you can use client name limit queries to display only those limits.

These queries can also be used to display all limits which have the same parent, counterparty group, risk country, or risk country group as the client used in the query specified in the **Limit Item Query** used in the limit.

**Hint:** For example, if Counterparty X belongs to Country Y, then if the include country option is used in the query, then Limit Monitor displays all limits which have either Counterparty X specified as the client in the **Limit Client Query** used in the limit, or which have Country Y as the Risk Country in **Limit Client Query** used in the limit.

To create a client name limit query:

1. Select **Data - Client Name Limit Query**.
2. Use the following selection lists and switches to build the client name query:
  - Lists: Client ID, Category ID, Portfolio Owner
  - Switches: Include Parent, Include Client Group, Include Risk Country, Include Risk Country Group.

The query matches only sublimits of limits with the category given in the query (if used). Otherwise, the way the query works depends on the combination of the Client ID, Portfolio Owner and the switches, as described in the following table:

Combination	Matching limits
Client ID only	All Limit Client Queries where: <ul style="list-style-type: none"> <li>• Client ID matches the Limit Client Query parameter Client or Not Client</li> <li>• Portfolio Owner matches the Limit Client Query parameter Portfolio Owner or Not Portfolio Owner.</li> </ul>
Client ID and Include Parent	All Limit Client Queries where: <ul style="list-style-type: none"> <li>• Parent (or Parent of the Parent, and so on) of the selected Client ID matches the Limit Client Query parameter Parent and Not Parent</li> <li>• Portfolio Owner matches the Limit Client Query parameter Portfolio Owner and Not Portfolio Owner.</li> </ul>
Client ID and Include Client Group	All Limit Client Queries where: <ul style="list-style-type: none"> <li>• Any Client Group to which the Client ID belongs, matches the Limit Client Query parameter Client Group and Not Client Group</li> <li>• Portfolio Owner matches the Limit Client Query parameter Portfolio Owner and Not Portfolio Owner.</li> </ul>

Combination	Matching limits
Client ID and Include Risk Country	All Limit Client Queries where: <ul style="list-style-type: none"> <li>Risk Country of the Client ID matches the Limit Client Query parameter Risk Country and Not Risk Country</li> <li>Portfolio Owner matches the Limit Client Query parameter Portfolio Owner and Not Portfolio Owner.</li> </ul>
Client ID and Include Risk Country Group	All Limit Client Queries where: <ul style="list-style-type: none"> <li>Risk Country Group to which the Risk Country of the Client ID belongs, matches the Limit Client Query parameter Risk Country Group and Not Risk Country Group</li> <li>Portfolio Owner matches the Limit Client Query parameter Portfolio Owner and Not Portfolio Owner.</li> </ul>

3. Optionally, you can map some of your transaction fields (external parameters) with query fields to control which of your attributes are used with which query field when executing the **Limit Query** action in Transaction Manager, click **External Parameters...**

In the resulting dialog, select the query field and the external parameter you want to map, and then click **Add**. You can map the following query fields to the following external parameters:

Query Fields	External Parameters
Client	Counterparty
Portfolio Owner	Issuer
	Owner

---

**Note:** For more information about Limit Query, see *8.2.5 Enabling limit queries at transaction level* on page 280.

---

- Click **OK** to save the external mapping.
- Click **OK** to save the query.

---

**Note:** To clear all the fields in the query, click **Clear** or to cancel without saving the query, click **Cancel**.

---

### 16.3.3.3 Creating client parameter limit queries

You use client parameter limit queries if you want Limit Monitor to display only those limits where one of the fields in the **Limit Client Query** used in the limit matches the corresponding parameter of the query.

**Hint:** For example, if you have configured some limits which have `Country Y` specified as the **Risk Country** in the **Limit Client Query** used in the limit, then you can use client parameter limit queries to display only those limits.

---

To create a client parameter limit query:

1. Select **Data - Client Parameter Limit Query**.
2. Use the following selection lists to build the client parameter query (the **Not** lists are for exceptions):

Selection list	Makes the query apply/not apply to
Category	The query returns all the sublimits that belong to any limits matching the following conditions: <ul style="list-style-type: none"> <li>• The limit category of the limit matches the limit category selected in the query. If no limit category is selected in the query, then all limits are selected</li> <li>• The parameters in the Limit Client Query used in the limit match all the parameters specified in the query.</li> </ul>
Client Rating Client Rating Code	A specific credit rating of the client where: <ul style="list-style-type: none"> <li>• Rating gives the rating agency and type</li> <li>• Rating Code gives the actual rating, and the rating/rating code of the Limit Client Query used in the limit matches the rating/rating code selected in the query.</li> </ul> <p>You must select a rating before you can select a rating code, since this selection determines the list of rating codes displayed in the associated rating field.</p>
Portfolio Owner Not Portfolio Owner	A specific portfolio owner where the portfolio owner of the Limit Client Query used in the limit matches the portfolio owner selected in the query.
Client Not Client	A specific client, where the client of the limit matches the client selected in the query.
Parent Not Parent	A specific client parent, where the parent of the Limit Client Query used in the limit matches the parent selected in the query.
Client Main Group Not Client Main Group Client Group Not Client Group	A specific client group, where: <ul style="list-style-type: none"> <li>• Client Main Group is the main group</li> <li>• Client Group is the actual group</li> <li>• Client Main Group/Client Group of the Limit Client Query used in the limit matches the Client Main Group/Client Group selected in the query.</li> </ul> <p>The group that a client belongs to (as defined in Client Editor's <b>Groups</b> page).</p> <p>Note: You must select a main group before you can select a group, since this selection determines the list of groups displayed in the associated <b>Group</b> field.</p>
Risk Country Not Risk Country	A specific country, where the country of the Limit Client Query used in the limit matches the country selected in the query.
Risk Country Group Not Risk Country Group	A specific risk country group, where the risk country group of the Limit Client Query used in the limit matches the risk country group selected in the query.

3. Click **OK** to save the query.

---

**Note:** To clear all the fields in the query, click **Clear** or to cancel without saving the query, click **Cancel**.

---

#### 16.3.3.3.4 Creating sublimit output limit queries

Use sublimit output limit queries if you want Limit Monitor to display only those sublimits which match a value in the corresponding sublimit grouping or sublimit query field displayed in Limit Monitor.

For example, if you have configured some limits which have *Counterparty X* specified as the **Counterparty** in the **Sublimit Query** page of Limit Editor, or if you have some limits with output for *Counterparty X* in a sublimit which is expanded by client, then you can use sublimit output limit queries to display only those limits.

To create a sublimit output query:

1. Select **Data - Sublimit Output Limit Query**.
2. In the **Transaction/Cashflow, Client, and Branches** pages, use the selection lists in the to specify the values for the sublimits you want to display.
3. In the **Client** page, use the selection lists to control the client values for the sublimits you want to display and the switches to include parent, client group, and risk country for the client ID you have selected.

---

**Note:** The include switches only affect the query when a client ID is specified.

---

4. In the **Affect Date** page, you can set up specific queries to be used if you have limits where exposures are calculated for, and expanded by, by using the affect date fields as follows:

Field	Value	Makes query apply/not apply to
Affect From Date	Date	All sublimits where grouped by affect date is on or after the given date. If nothing is given, all sublimits match the query.
Affect To Date	Date	All sublimits where grouped by affect date is on or before the given date. If nothing is given, all sublimits match the query
Affect From Offset	A whole number	All sublimits where grouped by affect date is on or after current date + <b>Affect From Offset</b> . For example, by giving '1' as offset, the first matching sublimit would be the one where grouped by affect date is the date of tomorrow.  Note: <b>Affect From Date</b> and <b>Affect From Offset</b> cannot be used together.
Affect To Offset	A whole number	All sublimits where grouped by affect date is on or before current date + <b>Affect From Offset</b> . For example, by giving '10' as offset, the last matching sublimit would be the one where grouped by affect date is the date of 10 days from the current date  Note: <b>Affect To Date</b> and <b>Affect To Offset</b> cannot be used together.

5. Optionally, you can map some of your transaction fields (external parameters) with query fields to control which of your attributes are used with which query field when executing the **Limit Query** action in Transaction Manager, click **External Parameters...**

In the resulting dialog, select the query field and the external parameter you want to map, and then click **Add**. You can map the following query fields to the following external parameters:

Query Fields	External Parameters
By Client	Counterparty
By Parent	Issuer
	Owner

---

**Note:** For more information about Limit Query, see *8.2.5 Enabling limit queries at transaction level* on page 280.

---

6. Click **OK** to save the external mapping.

7. Click **OK** to save the query.

---

**Note:** To clear all the fields in the query, click **Clear** or to cancel without saving the query, click **Cancel**.

---

#### 16.3.3.4 Creating limit filters

You use limit filters if you want Limit Monitor to display only those limits for which a specified key-figure (or key-figures) matches some pre-defined criteria, for example, to display all limits which have Limit Usage (%) greater than 100%.

Limit filters can be configured either for personal use only or to be shared among all users (by turning on a **Shared** switch in the corresponding dialog). The configuration is saved with the page properties and is applied again automatically each time the page is opened. A limit filter can consist of multiple conditions combined using AND and OR operators.

If you add a new condition to existing ones in a filter, it is always added with logic given by the operator of the new condition to the combined condition of all previous conditions. For example,

```
((condition1) AND condition2) OR condition3)
```

would mean that a limit matches the filter in the following cases:

- it matches both condition1 and condition2
- it matches condition3

whereas,

```
((condition1) OR condition2) AND condition3)
```

would mean that a limit matches the filter in following cases:

- it matches both condition1 and condition3
- it matches both condition2 and condition3

To create a limit filter:

1. Select **Data - Limit Filter**.
2. Use the following fields and selection lists in the Conditions section to add conditions to the filter:

Information	Possible value
Operator	<ul style="list-style-type: none"><li>• AND to add the condition to previous conditions with AND logic</li><li>• OR to add the condition to previous conditions with OR logic</li></ul> If you leave the Operator field blank, it defaults to AND.
Lower Bound	<ul style="list-style-type: none"><li>• The minimum number for the condition.</li></ul>
Condition	<ul style="list-style-type: none"><li>• Less than (&lt;)</li><li>• Less than or equal to (&lt;=).</li></ul>



Information	Possible value
Key-Figure	<ul style="list-style-type: none"> <li>• Available Limit (%) of Maximum</li> <li>• Available Limit (%) of Minimum</li> <li>• Available Limit to Maximum</li> <li>• Available Limit to Minimum</li> <li>• Limit Amount</li> <li>• Maximum Limit Amount</li> <li>• Minimum Limit Amount</li> <li>• Used Limit (%)</li> <li>• Used Limit (%) of Maximum</li> <li>• Used Limit (%) of Minimum.</li> </ul> <p>The limit key-figures are described in <i>16.3.3.1.6 Key-figures</i> on page 474.</p>
Condition	<ul style="list-style-type: none"> <li>• Less than (&lt;)</li> <li>• Less than or equal to (&lt;=).</li> </ul>
Upper Bound	The maximum number for the condition.

3. Click **Add** to add the new condition to those already in the filter.
4. Click **OK** to save the filter.

---

**Note:** To clear all the fields in the query, click **Clear** or to cancel without saving the query, click **Cancel**.

---

### 16.3.3.5 Combining selections, queries, and filters

You can use a combination of the following: Limit selection, Client Name Limit Query, Parameter Limit Query, Sublimit Output Limit Query and Limit Filters. The combination of queries returns all sublimits that match:

```
Limit selection AND (Client Name Limit Query OR Client Parameter Limit Query) AND
Sublimit Output Limit Query AND Limit Filter.
```

### 16.3.3.6 Configuring cell styles

You can modify cell styles to highlight sublimits for which certain key-figures lie within a range of values.

For example, cell styles can be configured to display all sublimits for which the figure Used Limit % of Maximum is greater than 100 in bold on a red background, and to display all sublimits for which the figure Used Limit % of Maximum is greater than 80 but less than 100 in bold on an orange background.

You can use the limit feature functionality described above to identify ranges of key-figure values which would cause the cell style to be applied. The system prevents you from defining overlapping ranges.

Cell styles can be configured either for personal use only, or to be shared among all users (by turning on a **Shared** switch in the dialog). The configuration is saved with the page properties and is applied again automatically each time the page is opened.

To configure a cell style:

1. Select **Data - Cell Style**.
2. Use the following fields and selection lists to add cell styles:

Information	Possible value
Server Type	<ul style="list-style-type: none"> <li>• Final</li> <li>• Simulated.</li> </ul>
Font Style	The style of the text: <ul style="list-style-type: none"> <li>• Bold</li> <li>• Bold Italic</li> <li>• Italic</li> <li>• Normal.</li> </ul>
Font Color	Any color from the color palette.
Cell Color	Any color from the color palette.

3. Click **Add Cell** to add the new cell style.
  - Click **Update** to save the changes to the cell style. This button becomes active when you modify any of the fields in the selected cell style.
  - Click **Remove** to remove the selected cell styles.
4. Use the filter setup fields as described in *Creating limit filters on page 480* to add a filter condition for the cell style to be applied.
5. Click **Add Filter** to add the new filter condition.
  - Click **Update** to save the changes to the condition. This button becomes active when you modify any field in the selected condition.
  - Click **Remove** to remove the selected condition.
6. Click **OK** to save the whole cell style definition.
  - Click **Clear** to clear all the fields in the cell style.
  - Click **Cancel** to close the dialog without saving the cell style.

## 16.4 Limit Notifications

Limit Notifications is an application that receives messages from the limit server to warn you when limit usage is approaching a limit threshold. Limit Notifications advises you when limits have been violated and which trader has caused the violation.

In the upper part of the application, a list is displayed giving a summary of the notification messages. The list can be sorted by clicking on the column headers.

When you select one of the items in the list, a more detailed view of the notification is shown in the lower part of the application.

---

**Note:** Some of the limit notification parameters are set up by the system administrator in the limit server (limitd).

---

### 16.4.1 Limit Notifications menus

The following table describes the violation and warning type messages available to you from the **Options** menu in Limit Notifications:

Message	Description
Restore On New Message	If the Limit Notifications window is hidden behind other windows, its icon in the Windows task bar flashes when Limit Notifications receives a new message. If Limit Notifications is minimized, its window is restored.
Show Immediately	You see a new message as soon as it is received; the new message replaces the message that is currently displayed.  If this option is switched off, only the message count changes (displayed at the bottom right corner of the Limit Notifications window). Use the toolbar navigation buttons to display the new message.
Ring Bell	You hear a beep when a new message is received. The beep sound is the Windows "default beep".
Own Notifications	You receive a message when a limit is violated for transactions which you originally created or transactions where you were the last trader to modify the deal.
Add Violation (Rate)	You receive a message when a limit is violated as a result of an update to market information. The limit had already been violated before the update was made.
Add Violation (Deal)	You receive a message when a limit is violated as a result of a new transaction breaching a limit. The limit had already been violated before the transaction was entered.
New Violation (Rate)	You receive a message when a limit is violated as a result of an update to market information. The limit had not been violated before the update was made.
New Violation (Deal)	You receive a message when a limit is violated as a result of a new transaction breaching a limit. The limit had not been violated before the update was made.
Log / Start-up	You receive a message when the log time interval has elapsed; the limit was exceeded, but not added to.
No Violation	Limit Notifications also displays other types of message, such as syntax errors.
Add Warning (Rate)	You receive a warning when a limit may be violated as a result of a change in market information. Limit usage had already passed the warning threshold before the transaction was entered.
Add Warning (Deal)	You receive a warning when a limit may be violated as a result of a new transaction. Limit usage had already passed the warning threshold before the transaction was entered.
New Warning (Rate)	You receive a warning when a limit may be violated as a result of a change in market information. Limit usage had not passed the warning threshold before the transaction was entered.
New Warning (Deal)	You receive a warning when a limit may be violated as a result of a new transaction breaching a limit. Limit usage had not passed the warning threshold before the transaction was entered.

### 16.4.2 Start-up parameters

It is possible to alter the start-up parameters so that Limit Notifications launches in a different mode.

See *C.5 Limit Notifications* on page 682 for information about the options available.

## 16.5 Analyzing limit violations

If a limit is violated, you can analyze which transaction caused the violation in a specific mode of Transaction Manager such as Limit Violations, which has been set up for this purpose (see 8.1.3 *Transaction Manager modes* on page 262 for more information). Basically, this mode shows only transactions that have been given the status of a limit violation.

---

**Note:** The process of setting the limit violation status can be configured by the system administrator so that other events can take place instead of, or in addition to, the limit violation status being set.

---

To analyze limit violations:

1. In Limit Violations, retrieve the transactions (see 8.4.1 *Retrieving transactions* on page 283).
2. When you have analyzed a transaction that caused a violation, you can choose to accept that violation using **Command - Clear Violation**.

The transaction is no longer flagged as a limit violation, and is removed from the list of transactions in Limit Violations.

Alternatively, you can manually set a limit violation on a transaction in Transaction Manager using **Command - Set Violation**.

### 16.5.1 Generating reports on limit violations

There are a number of reports you can use to view limit violation information.

Report	Description
Limit Log	Used to view historical limit usage that is logged in the database for a specific period. This report displays limit violations caused by either new transactions, or market rate movements.  See B.35 <i>Limit Log Report</i> on page 672 for details of the report's parameters.

# Chapter 17      Managing transaction conditions

## 17.1 Overview

Transaction conditions are simple conditions that must be checked on a single transaction in order to allow it to continue through the transaction flow.

These conditions are set up in transaction condition sets, which can be defined as three main concepts:

- **Scope:** The transactions to which the breach applies.
- **Conditions:** The conditions that will generate a breach when they are reached.
- **Action:** The subsequent action that the system will take when a condition is breached.

The process of checking transaction conditions can be summarized as follows:

- When a user applies a transaction, a check is made to verify whether the transaction matches one or several condition sets defined in the system.
- For each condition set found, the conditions are combined to evaluate whether there is a breach or not.
- If a condition is breached, the action selected in the corresponding transaction condition set is executed. For example, an action may be to block the deal, to move it to a specified state, or to display a warning, and so on. These actions are configured in the transaction flow. Depending on the configuration, these actions may behave differently according to when they are triggered in the transaction flow. See *17.2 Setting up transaction condition sets* on page 486.

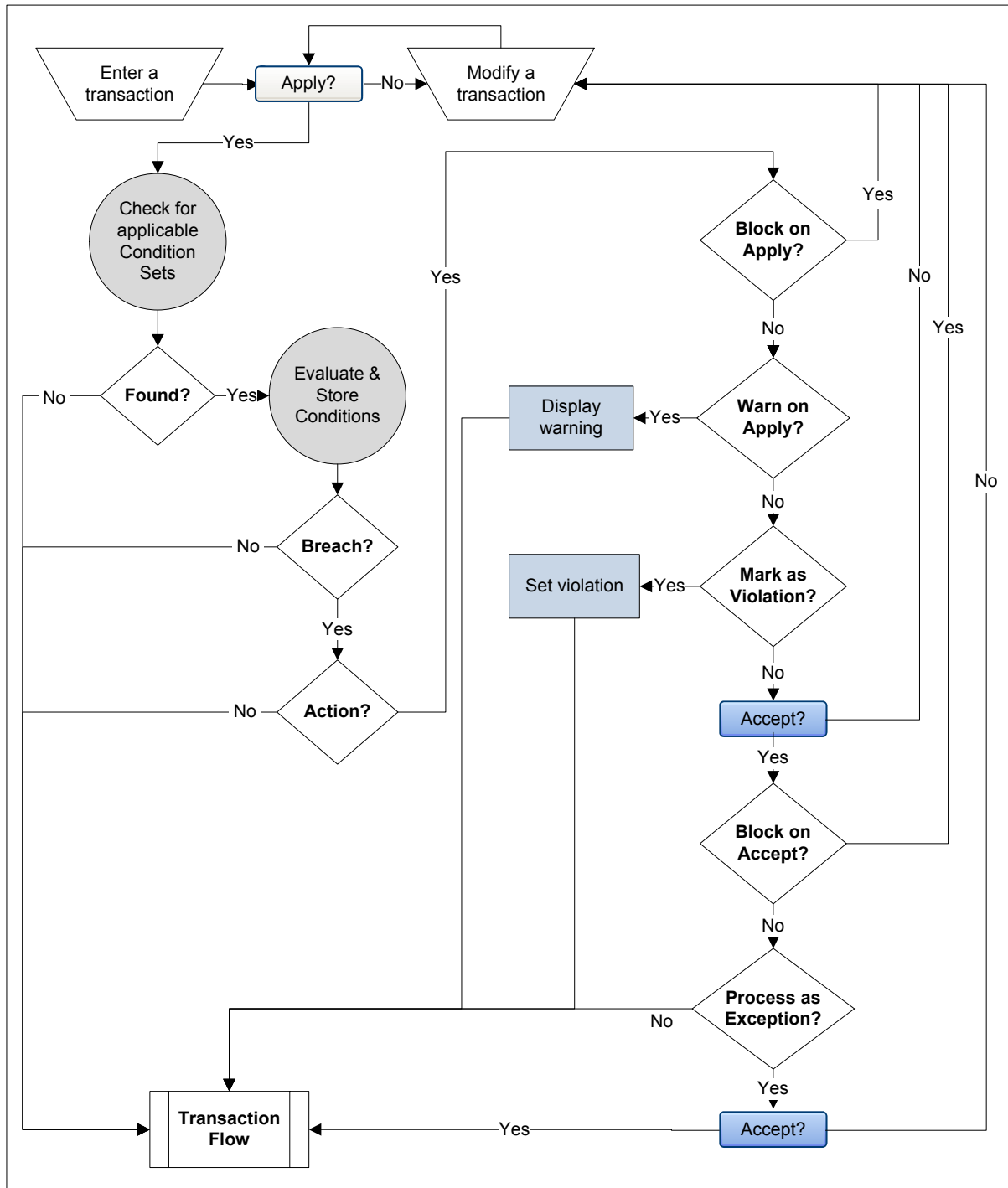
---

**Note:** The following actions are provided with TRM: **Block on Accept**, **Block on Apply**, **Mark as Violation**, **Process as Exception**, and **Warn on Apply**. See *17.3.2 Action* on page 491.

---

You can monitor and report transaction conditions using dedicated managers. See *17.4 Monitoring transaction conditions* on page 492.

The following diagram shows an example of the transaction condition mechanism:



## 17.2 Setting up transaction condition sets

Transaction condition sets determine which transactions to check, the conditions that determine a breach, and the actions that need to be taken when a breach occurs.

You can use transaction conditions as follows:

- To compare the rate of the transaction to the market rate, and to ensure that the difference does not exceed the specified level of tolerance (**Attribute** field). The level of tolerance can be expressed as either a percentage or an absolute variation.
- To ensure that certain characteristics of the transaction are or are not equal to a certain value. For example, to check that a counterparty belongs to a certain group or that a security cannot be traded.
- To set a maximum or a minimum for certain values like amount, units original maturity

Transaction condition sets use rules to include (Rule) or exclude (Not Rule) transactions from the check, consequently, you must first set up the Rules and Not Rules that you want to use with the transaction condition set. See *Chapter 5 Managing rules* on page 221.

Furthermore, it is also possible to restrict the scope of a condition set to a list of portfolios or traders by setting the conditions set as type **Portfolio** or **Trader**. These are described further on in this section.

**Hint:** The rules you want to use in condition sets must be set up with category **Transaction Condition Set**.

To set up transaction condition sets:

1. In Transaction Condition Set Editor, define the main attributes for the condition set in the upper part of the editor:

Information	Description
Id Name	Unique ID and name of the condition set.
Type	You can set the following types of condition sets: <ul style="list-style-type: none"> <li>• <b>Global:</b> Means that the condition set applies to any transaction matching the rule and not matching the not rule.</li> <li>• <b>Portfolio:</b> Means the condition set applies to any transaction belonging to a portfolio listed in the <b>Portfolios</b> page and matching (and not matching) the rule.</li> <li>• <b>Trader:</b> Means the condition set applies to the transactions listed in the <b>Traders</b> page and matching (and not matching) the rule.</li> </ul>
Action	Select the type of action you want the system to carry out when there is a breach. These actions are described in <i>17.3.2 Action</i> on page 491.  Note: If you do not select the type of action, no action is taken on the breached transaction, but the evaluation of the conditions is completed and stored with the transaction. This information is visible in Transaction Managers and in the Transaction Conditions Report. See <i>17.4 Monitoring transaction conditions</i> on page 492
Rule Not Rule	Select the Rule or Not Rule (defined in Rule Editor) you created that defines the transactions to which this condition set should or should not apply.  Note: If you do not select rules, the condition set applies to all transactions.
Active From	The opening date of the transaction must be after or equal to the date you set here.
Active To	The opening date of the transaction must be before or equal to the date you set here.
Attributes	<b>Not Limit:</b> The logic is reversed, which means the condition set is breached when all of the conditions are false.
Comment	Any additional information you want to enter which is relevant to the definition.

- In the **Rate Conditions** page, set the conditions by which you want to control the maximum deviation allowed with regards to a reference rate. This deviation can be expressed as a percentage (by default) or as an absolute variation.

**Note:** If the condition set applies to transactions where the instrument does not support rate conditions for the field defined in the condition (**Column** field), the condition is ignored and not taken into account by the evaluation. (The evaluation itself of non-applicable conditions is still stored in the database and can be monitored in Transaction Conditions Report).

**Hint:**

To avoid any performance problems, it is better to make sure that the scope and conditions defined in the condition set are fully compatible whenever possible.

Information	Description
ID	Unique ID automatically populated by the system when you add the condition definition.
Column	<p>The rate column on which you want the condition to apply. The transaction fields that can be checked and the reference to be used are dependent on the nature of the instrument:</p> <ul style="list-style-type: none"> <li>Quoted Instruments: The reference is the price (or yield) of the instrument itself. For bonds and similar debt instruments the control can be performed on either deal price or deal rate, for equities and derivatives (futures, options...) the control can only be made on Deal Price.</li> <li>Deposits and OTC Discount Papers: The control is made on the deal rate and the calculation of the reference to be used follows the same logic as deal rate defaulting.</li> <li>Long Loans and IR Swaps: The control can only be made on the coupon rate of the fixed rate interest schedule. Reference rate is calculated using the Yield Curve set on the transaction schedule.</li> <li>FX Instruments: Control can be made on one or several of the following fields: Spot Rate, Forward Points, Deal Rate, Base Interest rate, Quote Interest Rate. The reference used is the currency pair.</li> </ul>
Method	Determines which method you want to use to retrieve the reference rate. Choices are: <b>Ask</b> , <b>Avg</b> , <b>Bid</b> , <b>Bid/Ask (Spread Against)</b> , or <b>Bid/Ask (Spread in Favor)</b> .
Scenario	Determines which scenario you want to use to retrieve the reference rate.
Offset	Enter the deviation above which the condition is considered as true, i.e. breached.
Attributes	<p>The default offset is a percentage of the reference value.</p> <ul style="list-style-type: none"> <li><b>Absolute Variation</b> means the offset is an absolute number which adds to the reference value.</li> <li><b>Not Condition</b> reverses the logic, i.e. a breached condition becomes not breached and vice-versa.</li> </ul>
Description	<p>The description is automatically populated according to the selected conditions. You can modify the description according to your internal policies.</p> <p>For example, if you selected: Deal Price, Bid/Ask (Spread Against) and DEFAULT, the description shows as:</p> <p>Deal Price outside market rate +/- 0 % - DEFAULT, Bid/Ask (Spread Against)</p>

- Click **Add** to add the condition to the condition set definition. Repeat step 2. on page 488 to add more rate conditions to the condition set definition.



4. In the **Value Conditions** page, set the conditions by which you want to control certain values for the transaction:

Information	Description
ID	Unique ID automatically populated by the system when you add the condition definition.
Column	Select the value column on which you want the condition to apply. <ul style="list-style-type: none"> <li>• <b>Book Value</b></li> <li>• <b>Nominal Amount</b></li> <li>• <b>Original Maturity (days)</b>: Difference in days between opening date and maturity date.</li> <li>• <b>Units</b></li> </ul>
Operator	Select the comparison operator you want to use. Available choices are: != (not equal to), < (less than), <= (less than or equal to), = (equal to), > (greater than), >= (greater than or equal to)
Value	The value you want to compare the column with (can be a number or an amount depending on the column).
Rounding Rounding Method	The rounding and rounding method you want to apply to the column before the comparison.
Currency	If you selected columns Amount or Book Value, select the currency of the value you entered in the <b>Value</b> field.
Scenario	If you selected columns Amount and Book value, select the scenario to use in order to retrieve the FX rate used to convert the column into the currency of the value. The FX rate corresponds to the spot rate at opening date of the transaction.
Attributes	You can choose to use the absolute value (default) or the signed value for the comparison.  To use signed values, select <b>Use signed values</b> . A signed value is a value that can be negative or positive.
Description	The description is automatically populated according to the selected conditions. You can modify the description according to your internal policies.  For example, if you selected: Original Maturity (days), > and 365, the description shows as:  <code>Abs(Original Maturity (days)) &gt; 365</code>

5. Click **Add** to add the condition to the condition set definition. Repeat step 4. on page 489 to add more value conditions to the condition set definition.
6. In the **Characteristic Conditions** page, set the conditions by which you want to control certain characteristics of the transaction:

Information	Description
ID	Unique ID automatically populated by the system when you add the condition definition.
Characteristic	Select the characteristic you want to control, possible choices are: <ul style="list-style-type: none"> <li>• Counterparty</li> <li>• Currency</li> <li>• Instrument</li> <li>• Owner</li> <li>• Transaction (in this case reference will be a rule (see below))</li> </ul>

Information	Description
Reference Type	Depending on the characteristic you selected previously the available reference types are: <ul style="list-style-type: none"> <li>• Counterparty: Counterparty, Client Group, Parent Client</li> <li>• Currency: Currency, Currency Class, Currency Family</li> <li>• Instrument: Instrument, Instrument Group</li> <li>• Owner: Owner, Client Group, Parent Client</li> <li>• Transaction: Rule (condition will be true if the transaction matches)</li> </ul>
Reference	Depend on the reference type, for example, if the reference type is a rule the selection list shows all rules defined for transaction condition set (i.e. rule is set with category <b>Transaction Condition Set</b> ).
Offset	Enter the deviation above which the condition is considered as true, i.e. breached.
Attributes	<b>Not Condition:</b> By default the condition is breached if the characteristic matches the reference (for example, if the counterparty is in the reference client group) When this switch is on, the logic is reversed so that the condition is breached if the characteristic does not match the reference.
Description	The description is automatically populated according to the selected conditions. You can modify the description according to your internal policies. For example, if you selected: Instrument, Instrument Group, /FX/OPTION, Not Condition, the description shows as: <code>Instrument not belonging to group '/FX/OPTION'</code> Which means that if you use an instrument that is not an FX option, it will trigger a condition breach.

7. Click **Add** to add the condition to the condition set definition. Repeat step 6. on page 489 to add more characteristic conditions to the condition set definition.

8. If your condition set is of type **Portfolio**, in the **Portfolio** page, select the portfolios to which you want this condition set to apply:

Information	Description
Portfolio	Select the portfolio id. If you select a top portfolio, all trading portfolios belonging to the hierarchy are taken into account.

9. Click **Add** to add the portfolio to the condition set definition. Repeat step 8. on page 490 as many times as you have portfolios that you want to add.

10. If your condition set is of type **Trader**, in the **Trader** page, select the traders to which you want this the condition set to apply:

Information	Description
Trader	Select the user id of the trader.

11. Click **Add** to add the trader to the condition set definition. Repeat step 10. on page 490 as many times as you have traders that you want to add.

12. Save the whole condition set definition by clicking **Save As**.

**Hint:** You can view all of the conditions for the selected condition set in the **Conditions** page. This page is read-only.

## 17.3 Processing transaction condition sets

The evaluation of transaction condition sets is performed when you create a new transaction or when you modify a transaction. It is automatically done without any intervention from the user.

The corrective actions are taken according to setup as described in *17.3.2 Action* on page 491.

### 17.3.1 Evaluation

The evaluation is carried out as follows:

Whenever you apply a transaction, The system checks for transaction condition sets to be evaluated by matching the rule/not rules used in transaction condition sets against the transaction characteristics. All condition sets found are evaluated and the results are stored with the transaction (see *17.4 Monitoring transaction conditions* on page 492).

---

**Note:** In the event the transaction was already in the system, only newly found condition sets are re-evaluated.

---

Condition sets that have already been previously evaluated are left unchanged, unless the transaction was modified in a way that affects the result of evaluation. For example, if a field affecting the reference value, such as the opening date, or the field to be checked itself, for example deal price, has been changed). In which case, the application automatically detects that some conditions have to be re-evaluated due to a modification of the transaction.

In the event that some of the condition sets were previously evaluated, but no longer match the transaction, the condition set is marked as *inactive* and will only be visible in the Transaction Conditions Report for the purpose of auditing.

In some cases, for rate conditions, it may be useful to force the re-fetching of the reference value and the re-evaluation of a condition; for this purpose a specific action can be granted to users. To force the re-fetching of the reference value, right-click the condition and select **Reset Reference Rate**. The reference value is fetched again which forces the re-evaluation of the condition on **Apply**.

---

**Important:** The evaluation of the condition set does not necessarily affect the transaction processing. When a condition set is evaluated as breached, the evaluation only enables the selected corrective action (see *17.3.2 Action* on page 491).

---

### 17.3.2 Action

The action setup on a condition set is only carried out if the result of the evaluation is true.

Depending on the characteristic of the conditions, you may want to perform different actions; at different stages of the transaction flow. The system is delivered with the following pre-configured actions:

Action	Result
Block on Accept	The transaction can be applied, but not accepted; you have to modify the transaction, so that it no longer breaches the condition set before it can be accepted.
Block on Apply	The breached transaction cannot be saved. You have to modify the transaction to be able to save it.
Mark as Violation	The breached transaction is marked as a <b>TR Condition Violation</b> . You can monitor transactions with this flag in Transaction Condition Violations, see <i>17.4.2 Transaction Condition Violations</i> on page 493.

Action	Result
Process as Exception	Whenever a breached transaction is accepted, the transaction is marked as an <b>Exception</b> . Such transactions are visible in the Exception Verification board. Authorized users can either accept them in this board, in which case, they will follow the normal transaction flow, or reject them. See <i>17.4.3 Exception Verification</i> on page 493.
Warn on Apply	A warning message is displayed and transaction processing can continue normally.

**Hint:** If you only want a condition set to be evaluated for auditing purposes, but not to affect the transaction processing, it is possible to leave the action blank. In this case the condition set is evaluated and the result stored, but no corrective action is required.

## 17.4 Monitoring transaction conditions

You can use the following applications to monitor transaction condition sets and conditions:

- **Transaction Manager:** Use the dedicated views to display both false and true conditions. Only active transaction conditions are visible in Transaction Manager.
- **Transaction Condition Violations:** You can view the transactions marked with the flag **TR Condition Violation** (i.e. those with breached conditions configured to be processed as violations).
- **Exception Verification:** You can only view transactions marked as an **Exception** (i.e. those with breached conditions configured to be processed as exceptions). Authorized users can then accept or reject transactions.
- **Transaction Conditions Report:** Shows information about the condition sets and conditions. This report includes a lot of information about the transactions to facilitate auditing and analysis. For information about the report parameters, see *B.49 Transaction Conditions Report* on page 679.

### 17.4.1 Transaction Manager

You can monitor all *active* conditions for a given transaction in most modes of the Transaction Manager, such as, Deal Capture or Transaction Admin in the **Transaction Condition Set** and **Transaction Condition** views. These views enable you to see the conditions that were breached and take the required corrective action for the selected transaction.

Additionally, you can filter out conditions that are not breached by right-clicking the header of either of the condition views and selecting **Filters - Breached Condition Sets** or **Breached Conditions** (depending on the view).

These views are available in all applications relating to transaction conditions (for example, Exception Verification and Transaction Condition Violations).

#### 17.4.1.1 Views

Condition sets and conditions are visible in the following dedicated views:

##### 17.4.1.1.1 Transaction Condition Set

Column	Description
Attributes	<ul style="list-style-type: none"> <li>• <b>Evaluated</b> means evaluation is complete.</li> <li>• <b>Not Logic</b> means the logic is reversed, i.e. the condition set was breached because all of the conditions were false.</li> </ul>

Column	Description
Condition Set	The ID of the condition set.
Date	The date and time when the condition set was last evaluated.
Message	Details of the conditions that caused the breach.
User	The user that triggered the last evaluation.
Value	<b>No</b> means the condition set was not breached; <b>Yes</b> means it was.

#### 17.4.1.1.2 Transaction Condition

Column	Description
Attributes	<b>Evaluated</b> means evaluation is complete. <b>Not Logic</b> means the logic is reversed, i.e. the condition was breached because the condition was false.
Condition	The number of this condition as it appears in the editor.
Condition Set	The ID of the condition set.
Condition Type	The rate, characteristic or value.
Date	The date and time when the condition was last evaluated.
Message	Information about the condition that was breached.
Rate	(Rate conditions only) The ID of the reference rate.
Reference Time	(Rate conditions only) The date and time that the reference rate was last fetched.
Reference Value	(Rate conditions only) The value of the reference rate.
Value	<b>No</b> means the condition was not breached; <b>Yes</b> means it was.

### 17.4.2 Transaction Condition Violations

Transaction Condition Violations enables you to monitor in real-time all breached transactions marked as violations (i.e. action **Mark as Violation**) as soon as they are accepted.

### 17.4.3 Exception Verification

Exception Verification enables you to monitor all breached transactions marked as exceptions (i.e. action **Process as Exception**).

**Hint:** For example, the system can be configured to process as exceptions all equity transactions where the deal price deviates by 10% or more from the market price.

The person responsible for verifying the validity of these transactions can then either accept or reject them. For example, if the breach can be justified by an extreme volatility, then it may be accepted. The decision really depends on the internal policies in place.

### 17.4.4 Transaction Conditions report

Transaction Conditions reports are used for auditing conditions that have been evaluated. The report shows information at the transaction and condition levels which can be then aggregated, if needed.

The report can be used to do statistics about condition breaches or to audit specific cases a-posteriori. The fact that inactive and not applicable conditions are shown in the report provides you with the full history (audit trail) of a transaction with regards to transaction conditions.

It is possible to define bank accounts, custody accounts, and settlement instructions for your client entities, for example, banks, issuers, custodians, and even your own organization.

You can define different kinds of accounts: standard bank accounts, accounts with correspondent banks, accounts with intermediary banks, and intercompany accounts. Balances and accrued interest for these accounts can be calculated automatically.

You can set up automatic leveling for accounts, namely the periodic movement of funds, often within a cash pool, to manage cash centrally.

Furthermore, you can send settlement instructions automatically to your bank whenever a settlement or custody transaction is manually entered or generated.

It is possible to send automatic messages to your counterparties, to inform them of any settlement transfers that they will receive from you and reminders of payments that they have to make to you.

You can automatically dial up banks to retrieve the bank statements of the previous day and intra-day information. After the bank statement information has been imported, it is possible to reconcile the payments showing on the bank statement with the matching payments in the system.

## 18.1 Managing cash and cash position

### 18.1.1 Managing bank account balances and interest

#### 18.1.1.1 Setting up bank account balances and interest

Bank account balances and accrued interest calculated on a bank account are created as transactions using instruments set up for this purpose. These transactions must be entered into a portfolio.

It is recommended that a separate Balance portfolio is defined for the balance- and interest calculation transactions. This allows you restrict update access to the balance information to the back office, while the trading portfolios can only be updated by the front office and middle office.

If your organization has internal bank accounts (for example, accounts for subsidiaries held by a central treasury), you may find it useful to have a Balance portfolio for your internal bank accounts as well.

---

**Note:** The instruments used to calculate the balance and accrued interest of a bank account are defined in Instrument Editor. Instruments setup is described in *TRM Instruments: Processing and Calculations Guide*.

---

This section explains how to set up balances on bank accounts. For a more global explanation of how to set up bank accounts, see *18.2 Setting up settlement management* on page 505.

#### 18.1.1.1.1 Creating balance portfolios

To create a balance portfolio:

1. In Portfolio Editor, create the portfolio and its relationship with the others in the hierarchy, as described in *3.14 Portfolios* on page 107.

For this portfolio, turn on the switch **Not Payable** (since balances are not payable), and make sure that the **Trading** switch is turned off (to prevent the portfolio from being selectable in Transaction Manager when you are entering deals). The portfolio needs no other special settings, except for the correct user access rights (see *3.14.1.2 Assigning allowed users and processes* on page 110).

2. Save the portfolio definition using **File - Save**.

#### 18.1.1.1.2 Assigning balance and interest-calculation instruments to accounts

Once the instruments that are used for calculating the balance and bank-account interest on bank accounts have been defined, they are assigned (in Client Editor's **Accounts** page) to all bank accounts for which you want to calculate the balance and accrued interest.

---

**Note:** The balance instrument can also be used to define how interest is calculated if a specific interest-calculation instrument is not assigned to the account.

---

To assign the instruments to a bank account:

1. In Client Editor, select the client for which you want to set up a bank account balance.  
See *18.2 Setting up settlement management* on page 505 for more information about defining bank accounts for clients.
2. In the **Accounts** page, enter the details specific to balance (and interest-calculation) instruments as described in *3.13.1.11 Setting up client accounts* on page 98.
3. Click **Update** to update the details of this account.
4. Repeat this procedure until you have updated all the accounts for this client.
5. Save the whole client definition using **File - Save**.

#### 18.1.1.2 Calculating bank account balances and interest

Bank account balances and accrued interest on bank accounts are calculated automatically using the activity **Bank Account Balances**.

To set up the activity for automatic calculation of balances and accrued interest, see *A.1 Bank Account Balances* on page 627 for details of the activity's parameters.

---

**Note:** Activities are set up and managed in Activity Manager: see *Chapter 6 Managing activities* on page 227 for more information.

---

#### 18.1.1.2.1 Aggregating balances (optional)

Aggregate balances are stored in an account (the Parent Account) and calculated per bank. You need to define one parent account for each bank in which you hold accounts.

Each parent account must be set up for each portfolio owner in the same way as any other account. However, settlement instructions do not need to be defined for the parent account.

Each parent account must be linked to a balance instrument and a balance portfolio so that the balances can be calculated for the account. These may be different to the balance instrument and balance portfolio used for the settlement accounts.

This section explains how you can calculate an aggregated balance based on the balance of multiple underlying accounts.



To link the parent account to the accounts in order to aggregate balances:

1. Create the underlying accounts (that is, the accounts which will be used for settlements and for which you require a balance).
2. Create the parent account that will be used to calculate the aggregated balance.  
You create this account in the same way as an underlying account.
3. Add a balance instrument and a balance portfolio to the parent account.
4. Assign the parent account to each of the underlying accounts (in the **Parent Account** field in the **Accounts** page). The bank of the parent account must be the same as the bank of the underlying accounts.

---

**Note:** The balance of the parent account is simply the sum of the balances of the underlying accounts. Therefore, the underlying balances need to have been calculated before the balance of the parent account using the activity **Bank Account Balances**. Note also that the interest calculation on the underlying accounts is totally independent of the interest calculation on the parent account.

---

#### 18.1.1.2.2 Generating balance reports

Report	Description
Balance	This report displays the payments affecting your cash account and balances of your cash accounts. See <i>B.2 Balance Report</i> on page 659 for details of the report's parameters.

#### 18.1.1.3 Realizing bank account interest

Bank account interest realization involves the settlement or capitalization of accrued bank account interest which has previously been calculated, depending on the **Settlement Method** specified for the instrument. In the case of capitalization, the realized interest is added to the bank account balance. Interest realization can be done at the portfolio, bank, currency or bank account level.

Interest realization can be done either manually in the **Bank Account Balances** application or you can schedule payments to be made automatically using the activity **Bank Account Interest Realizing**.

##### 18.1.1.3.1 Setting up interest realization

You can automate the payment of accrued interest by setting up the activity **Bank Account Interest Realizing**. This activity creates a payment transaction for the interest that has been accrued since the previous payment.

To automate the payment of accrued interest, you need to ensure that the following have been done:

- The activity **Bank Account Balances** has run and generated accrued interest. The accrued interest transaction updates the realization date based on the realization frequency defined in the **Interest Realization** page of Instrument Editor.
- The realization frequency has been defined. If this is not defined, realization will take place on demand according to the activity's due date. To schedule the realization frequency:
  - In the **Interest Realization** page of Instrument Editor, specify the **Frequency**, **Frequency Unit** and **Method** for the Bank Account Interest instrument (for example, once a month, periodically).
  - In the **Bank Account Balances** application, update the **Realization Date** field. See *18.1.1.4 Monitoring bank account balances and interest* on page 498 for more information.

To set up the activity **Bank Account Interest Realizing**:

1. In Activity Manager, create a new activity using activity type **Bank Account Interest Realizing**.
2. Fill in the fields in the upper part of Activity Manager (for more information see *6.2.1 Creating activities* on page 229). If realization is done on demand, the **Due Date** must be the **Value Date** of the interest realization cashflow. If the realization method is set to **Periodically** in Instrument Editor, the **Due Date** must be the transaction's **Realization Date**. In this case, if the **Due Date** of the activity has not reached the **Realization Date**, no realization will take place.
3. Enter the necessary parameters. See *A.2 Bank Account Interest Realizing* on page 627 for more information.

---

**Note:** If the Bank Account Interest instrument has the **Interest on Value Date** switch turned on, you need to set the **Due Date Offset in Days** to -1. If this value is not set to -1, the Bank Account Balances activity will not capitalize the interest, since the interest cashflow's **Value Date** is on Day-1 compared to the bank account balance's **Value Date**.

---



---

**Note:** For one-off payments, you can use the **Realize AI** action in the Bank Account Balances application. See the *TRM Instruments: Processing and Calculations Guide* for more information.

---

#### 18.1.1.3.2 Undoing bank account interest realization

You can create an **Undo Realize Interest** activity using the activity type **Bank Account Interest Realizing** (see *18.1.1.3.1 Setting up interest realization* on page 497 more information). You need to set the **Mode** in the activity's **Parameters** page to **Undo Realize**. The **Undo Realize Interest** activity removes all the paid flags on the accrued interest cashflows.

---

**Note:** You can also cancel realized interest using the **Undo Realize AI** action in the Bank Account Balances application. See the *TRM Instruments: Processing and Calculations Guide* for more information.

---

#### 18.1.1.4 Monitoring bank account balances and interest

You can use the cashflow report to monitor realized bank account interest over a period of time. You need to filter on **Transaction Type = Balance** and **Cashflow Type = Interest**. See *7.1 Report Generator* on page 235 for more information.

In the Bank Account Balances application you can monitor realized bank account interest by selecting the relevant transaction columns:

Information	Description
Realization Attributes	<b>Realize Periodically:</b> Defined at the instrument level. <b>None.</b> No realization method defined at the instrument level. Realization takes place on-demand.

Information	Description
Realization Date	<p>The calculated next realization date if the realization is periodic. This date is re-calculated after each realization.</p> <p>If you want the <b>Realization Date</b> to occur on the last day of the month you need to set <b>Method</b> to <b>Periodically</b> and <b>Convention</b> to <b>Last of Month</b> at instrument level.</p> <p>If you want the <b>Realization Date</b> to occur on a specific date each month you need to do the following:</p> <ul style="list-style-type: none"> <li>Set the following parameters at instrument level: <ul style="list-style-type: none"> <li><b>Method: Periodically</b></li> <li><b>Frequency Unit: Months</b></li> <li><b>Frequency: 1</b></li> <li><b>Convention: None</b></li> </ul> </li> <li>In the Bank Account Balance application, set the <b>Realization Date</b> to the required date.</li> </ul> <p>Note: If the date falls on a holiday, the payment will be set to the next business day.</p>
Realization Convention	Convention to use for interest realization as defined at the instrument level. See the <i>TRM Instruments: Processing and Calculations Guide</i> for more information.
Realization Frequency	Frequency of the payment, i.e. once a month. Set at instrument level. See the <i>TRM Instruments: Processing and Calculations Guide</i> for more information. Note: This field applies if the <b>Method</b> is set to <b>Periodically</b> in the instrument.
Realization Unit	Frequency of the payment, i.e. monthly. Values include <b>Business Days, Days, Months, Weeks, Years</b> . Set at instrument level. See the <i>TRM Instruments: Processing and Calculations Guide</i> for more information. Note: This field applies if the <b>Method = Periodically</b> is set in the instrument.
Realization Method	<b>Capitalize, Settle</b> . Set at instrument level. See the <i>TRM Instruments: Processing and Calculations Guide</i> for more information.

### 18.1.2 Managing cost of carry

Cost-of-carry is used to capture the internal funding cost of outstanding cash. A cost-of-carry transaction is used to track the outstanding cost-of-carry balance and its accrued interest. The cost-of-carry balance can be used to monitor how much cash is outstanding for a position. The accrued interest creates pseudo cashflows, which are used to simulate how much could have been earned by investing the cash.

For instance, if cash is held in a portfolio and not invested, the cost-of-carry is the risk-free interest rate that could be earned by investing the cash. For example, if your portfolio contains 6 million un-invested euros, the cost-of-carry may be 5% (i.e. if the risk-free interest rate is set to 5%), the cost-of-carry balance is 6 million and the accrued interest on the cost-of-carry balance is 3 thousand per day (6 million x 5%). The rate is determined by a yield curve.

Cost-of-carry can be used to compare the performance of portfolios, taking into account the different currencies.

You can:

- Calculate the cost-of-carry balance for any portfolio with a position and calculate the accrued interest on the cost-of-carry balance.
- Realize the cost-of-carry interest that has accrued since the last interest realization and either:
  - Start with the same closing cost-of-carry balance the next day, or
  - Start with a zero cost-of-carry balance the next day.
- Close out the outstanding cost-of-carry balance for the relevant reporting period without realizing the interest. This is useful for portfolio managers who monitor the cost-of-carry balance

without accruing cost-of-carry interest and need to close out their outstanding cost-of-carry balance for the relevant reporting period in order to start with a zero balance for the next reporting period.

### 18.1.2.1 Setting up cost-of-carry

To set up cost-of-carry you need to:

1. Configure the yield curves for cost-of-carry calculations.

See *18.1.2.1.1 Configuring yield curves for cost-of-carry calculations* on page 500.

2. Create the cost-of-carry instruments.

The instruments used to calculate the cost-of-carry on a position are defined in Instrument Editor. The setup for cost-of-carry instruments is described in the guide *TRM Instruments: Processing and Calculations*.

3. Assign the instruments you created to calculate the cost-of-carry balance and accrued interest on a position to a portfolio.

See *18.1.2.1.2 Assigning cost-of-carry instruments to portfolios* on page 500.

#### 18.1.2.1.1 Configuring yield curves for cost-of-carry calculations

You configure yield curves in IR Quote and Yield Curve Editor. If the cost-of-carry is calculated on the basis of the O/N period of the yield curve, only the O/N period needs to be configured. See *3.8.2 Creating IR Quote and Yield Curves* on page 65 for more information on configuring yield curves.

One cost-of-carry transaction is calculated per portfolio currency. You can specify the currency at yield curve level or at portfolio level. By default, if you do not specify a yield curve in the instrument definition, the yield curve defined as the default cost-of-carry rate in Currency Editor's **Default Rate** page is used (see *3.9.1.1.1 Defining default rates* on page 83).

To assign different yield curves per currency you can either:

- Create one cost-of-carry instrument per currency and set the currency in the **Currency** field in Portfolio Editor. In this case you do not specify a yield curve at the instrument level. See *18.1.2.1.2 Assigning cost-of-carry instruments to portfolios* on page 500.
- Create one cost-of-carry instrument per currency and set the yield curve in the **Interest Rate Curve** field in Instrument Editor.
- Create only one cost-of-carry instrument and use the **Ladder** field in Instrument Editor. A ladder is configured in Ladder Set Editor and can be used to assign a set of yield curves per currency. See *3.33 Ladder sets (optional)* on page 143 for more information.

#### 18.1.2.1.2 Assigning cost-of-carry instruments to portfolios

Cost-of-carry is calculated for portfolios which have a cost-of-carry instrument assigned to them (see *3.14.1.3 Setting up cost-of-carry for portfolios* on page 111).

To assign cost-of-carry attributes to a portfolio:

1. In Portfolio Editor, select the portfolio to which you want to assign cost-of-carry attributes and make sure that the **Trading** switch is turned on.
2. In Portfolio Editor's **Cost-of-Carry** page, select the cost-of-carry instrument from the **Instrument** field: the set up for these instruments is described in the guide *TRM Instruments: Processing and Calculations*.
3. Select a currency from the **Currency** field if you want to specify a yield curve per currency to calculate the cost-of-carry balance (and if you have not specified a yield curve at the instrument level).
4. Repeat the procedure to select and add any further instrument and currency combinations.
5. Save the whole portfolio definition using **File - Save**.

### 18.1.2.2 Calculating cost-of-carry balances and interest

Cost-of-carry balances and accrued interest on balances are calculated automatically using the activity **Cost of Carry**. To set up the activity:

1. In Activity Manager, create a new activity using activity type **Cost of Carry**.
2. Enter the necessary parameters. See *A.14 Cost of Carry* on page 632 for details of the activity's parameters.

---

**Note:** Activities are set up and managed in Activity Manager: see *Chapter 6 Managing activities* on page 227 for more information.

---

### 18.1.2.3 Realizing cost-of-carry interest

Cost-of-carry interest realization involves the capitalization of accrued cost-of-carry interest which has previously been calculated by the activity **Cost of Carry**. The realized interest is added to the cost-of-carry balance. Interest realization can be done at the portfolio, bank, currency or bank account level.

Interest realization can be done either manually in the Cost of Carry application or you can schedule payments to be made automatically using the activity **Cost of Carry Interest Realizing**.

#### 18.1.2.3.1 Setting up interest realization

You can automate the realization of accrued interest using the activity **Cost of Carry Interest Realizing**. This activity creates a payment transaction for the interest that has been accrued since the previous realization.

To automate the realization of accrued interest, you need to ensure that the following have been done:

- The activity **Cost of Carry** has run and generated accrued interest. The accrued interest transaction updates the realization date based on the realization frequency defined in the **Interest Realization** page of Instrument Editor. You can see the updated realization date in the Cost of Carry application.
- The realization frequency has been defined. If this is not defined, realization will take place on demand according to the activity's due date. To schedule the realization frequency:
  - In the **Interest Realization** page of Instrument Editor, specify the **Frequency**, **Frequency Unit** and **Method** for the cost-of-carry instrument (for example, once a month, periodically).
  - In the Cost of Carry application, update the **Realization Date** field. See *18.1.2.5 Monitoring cost-of-carry balances and interest* on page 502 for more information.

To set up the activity **Cost of Carry Interest Realizing**:

1. In Activity Manager, create a new activity using activity type **Cost of Carry Interest Realizing**.
2. Fill in the fields in the upper part of Activity Manager (for more information see *6.2.1 Creating activities* on page 229). If realization is done on demand, the **Due Date** must be the **Value Date** of the interest realization cashflow. If the realization method is set to **Periodically** in Instrument Editor, the **Due Date** must be the transaction's **Realization Date**. In this case, if the **Due Date** of the activity has not reached the **Realization Date**, no realization will take place.
3. Enter the necessary parameters. If you want to realize the accrued interest and set the cost-of-carry balance to zero, you need to select **Yes** in the field **Zero Balancing**. See *A.15 Cost of Carry Interest Realizing* on page 632 for more information about the parameters.

---

**Note:** If the Cost of Carry instrument has the **Interest on Value Date** switch turned on, you need to set the **Due Date Offset in Days** to -1. If this value is not set to -1, the **Cost of Carry** activity will

not capitalize the interest, since the interest cashflow's **Value Date** is on Day-1 compared to the cost-of-carry balance's **Value Date**.

---

**Note:** For one-off payments, you can use the **Realize AI** action in the Cost of Carry application. See the *TRM Instruments: Processing and Calculations Guide* for more information.

---

#### 18.1.2.3.2 Undoing cost-of-carry interest realization

You can create an **Undo Realize Interest** activity using the activity type **Cost of Carry Interest Realizing** (see *18.1.1.3.1 Setting up interest realization* on page 497 more information). You need to set the **Mode** in the activity's **Parameters** page to **Undo Realize**. The **Undo Realize Interest** activity removes all the paid flags on the accrued interest cashflows.

**Note:** You can also cancel realized interest using the **Undo Realize AI** action in the Cost of Carry application. See the *TRM Instruments: Processing and Calculations Guide* for more information.

---

#### 18.1.2.4 Setting the cost-of-carry balance to zero

It is possible to close out the outstanding cost-of-carry balance without realizing any interest using the activity **Cost of Carry Zero Balancing**.

**Note:** In order to use the activity **Cost of Carry Zero Balancing** the activity **Cost of Carry** must have run and generated the cost-of-carry balance.

---

To set up the activity **Cost of Carry Zero Balancing**:

1. In Activity Manager, create a new activity using activity type **Cost of Carry Zero Balancing**.
2. Fill in the fields in the upper part of Activity Manager (for more information see *6.2.1 Creating activities* on page 229).
3. Enter the necessary parameters. See *A.16 Cost of Carry Zero Balancing* on page 633 for more information about the parameters.

#### 18.1.2.4.1 Undoing cost-of-carry zero balancing

You can create an **Undo Cost of Carry Zero Balancing** activity using the activity type **Cost of Carry Zero Balancing** (see *9.1.2.1 Setting up interest realization* on page 283 more information). You need to set the **Mode** in the activity's **Parameters** page to **Undo Zero Balancing**. Running this activity creates a negative cashflow of **Type Balance**.

#### 18.1.2.5 Monitoring cost-of-carry balances and interest

In the Cost of Carry application you can monitor realized cost-of-carry interest by selecting the relevant transaction columns. See *18.1.1.4 Monitoring bank account balances and interest* on page 498 for more information.

You can monitor cost-of carry balances and compare portfolios in Treasury Monitor. See *12.1.7 Monitoring cost-of-carry positions* on page 390 for more information.

### 18.1.3 Managing cash pool leveling

#### 18.1.3.1 Setting up cash-pool leveling

You can set up automatic leveling, namely the periodic movement of funds, often within a cash pool, to manage cash centrally. This functionality is closely related to zero balancing, which is a bank process where the bank adjusts at the end of each period (day, week, month) an account's balance to zero by transferring funds to or from another designated account.

The differences between leveling performed by your organization, and zero balancing performed by a bank, are as follows:

- Leveling does not necessarily adjust all balances to zero; you can leave a specified target balance (cushion) in the account.
- Since only banks know at any one time the exact amount in accounts, leveling is based on balance estimates, rather than actual balances.

#### 18.1.3.1.1 Creating cash-pool leveling accounts

You can have multiple cash pools, typically one for each currency. One leveling cash pool can have different levels. The sweeping (checking of accounts to see how much to move, and in which direction) starts from the lowest level, sweeping upwards through the hierarchy to the highest level. The account at the top of the hierarchy is usually the treasury's own account.

As any one account can only be swept to once, it can have only one parent within the cash pool and it cannot belong to more than one cash pool.

A parent in the hierarchy is referred to as a master account and the child is referred to as a sub-account. An account can be both a master account and a sub-account, within the same hierarchy.

These master and sub-accounts need to be set up in TRM under their respective account owners. The owner of each affiliate account can be either the affiliate itself or the Treasury Center. Within TRM, for an account balance to be calculated, it has to be one defined for a client that is a portfolio owner. But in some cases, you may not want an affiliate to be a portfolio owner. So, if you want an affiliate to own its account, you have two options:

- If the affiliate is a portfolio owner, you simply set up the cash pool account under the affiliate in Client Editor, and balances are calculated in the affiliate's own portfolio.
- If the affiliate is not a portfolio owner, you set up the cash pool account both under the Treasury Center and under the affiliate.

The account under the Treasury Center is called a memorandum account, and this account is used for calculating the balance for the affiliate in one of the treasury's portfolios. The account under the affiliate is for settlement purposes only, and not to calculate any balances (since the affiliate is not a portfolio owner and therefore cannot have its balances calculated directly).

See 3.29 *Cash pools (optional)* on page 139 for information about how to set up a cash pool.

---

**Note:** For more information on setting up clients (the generic term for any organization defined in TRM, whether that be a treasury, affiliate, bank and so on), see 3.13 *Clients* on page 89. For information on setting up bank accounts, see 3.13.1.11 *Setting up client accounts* on page 98.

---

#### 18.1.3.1.2 Defining the portfolios for sweep transactions

The payment transactions that are used to make the sweep between the accounts need to be entered in specific portfolios.

To define these portfolios for each portfolio owner that owns sub-accounts or master accounts:

1. In Client Editor, select the portfolio owner that owns the relevant sub-account or master account.
2. In the **Properties** page, define and add the following property to the client definition:

Information	Description
Property	CASHPOOL-PORTFOLIO-1-ID
Value	The portfolio for the payment transactions.

3. Save the whole client definition using **File - Save**.

See 3.13.1.3 *Defining properties* on page 93.

### If the Treasury Center owns an affiliate's account

If the Treasury Center owns an account on behalf of an affiliate, the payment transaction used to sweep an amount from that account should not necessarily be part of the Treasury Center's position and can therefore be created in a separate portfolio. Therefore, for portfolio owners that own accounts in TRM on behalf of affiliates, it is recommended that you define two portfolios:

1. In Client Editor, select the portfolio owner that owns a sub-account or master account.
2. In the **Properties** page, define and add the following property to the client definition:

Information	Description
Property	CASHPOOL-PORTFOLIO-2-ID
Value	The portfolio for the payment transactions.

3. Save the whole client definition using **File - Save**.

See 3.13.1.3 *Defining properties* on page 93.

### 18.1.3.1.3 Settling the sweeps on inter-company accounts

When there are sweeps between two different clients, this needs to be reflected on the intercompany accounts. If, for example, an amount is transferred from an affiliate's sub-account to a Treasury Center's master account, the intercompany account needs to be updated for this amount as well.

To update the rules attached to the intercompany accounts that are set up under the affiliates:

1. In Rule Editor, select the rule ID that is attached to the intercompany account defined under the affiliate, or affiliates (see 3.13.1.11 *Setting up client accounts* on page 98).
2. Enter a priority that is higher than the priority for any other account rules.

This is because you need to make sure that this account is used, otherwise the settlement will be made on the wrong account (for example, an external account).

3. Enter the rule conditions, using the information in the following table:

Information	Description
Instrument	Cashpool-Transfer
Cashflow Type	Payment

4. Save this new condition using **File - Save As New**.

5. Enter the following additional conditions:

Information	Description
Instrument	Cashpool-Payment
Cashflow Type	Other Payment

6. Save this new condition using **File - Save As New**.

7. Repeat the above procedure for any other rules that are attached to intercompany accounts that need to be updated.



#### 18.1.3.1.4 Processing cash-pool leveling

To calculate the sweep amounts and automatically creating the necessary leveling transactions, you use the Cash Pool Leveling activity: see *A.8 Cash Pool Leveling* on page 629 for details of the activity's parameters.

---

**Note:** Activities are set up and managed in Activity Manager: see *6.2 Managing activities* on page 229.

---

## 18.2 Setting up settlement management

### 18.2.1 Defining settlement parameters

This section describes the parameters you need to define to automate the settlement process in TRM.

#### 18.2.1.1 Defining settlement rules

Settlement rules are created in Settlement Rule Editor. These settlement rules can then be used in other editors which define cutoff times, splitting and netting rules, and settlement flow rules, described later in this chapter.

For example, if the portfolio owner has accounts with three different local banks, and each bank expects to receive a different file format, you would need to set up three separate rules: one rule for each of the banks: see *18.2.1.2 Defining settlement methods* on page 507.

---

**Note:** In the case of a DvP settlement, you would need to set up one settlement rule with two conditions, a cash condition (Settlement Type = **Cash**) and a security condition (Settlement Type = **Security**). Thus, such a settlement rule matches a DvP settlement only if both conditions match.

---

To create a settlement rule:

1. In Settlement Rule Editor (upper part of the editor), enter the main attributes of the rule:

Information	Description
ID Name	ID and name of the settlement rule.
Domain	Domain in which this rule applies.
Comment	Any additional information you want to add about the settlement rule.

2. In the **Settlement Rule** page (lower part of the editor), define the conditions that settlements must match for this rule to apply. It is possible to specify several conditions, using the logical relationship OR between them.

Information	Description
Name	Name of the specific rule within the settlement rule for which you are defining the conditions.
Instrument Group	Instrument group to which the rule applies.
Instrument	Specific instrument to which the rule applies.
Portfolio	Portfolio to which the rule applies.

Information	Description
Owner	Portfolio owner to which the rule applies.
Currency	Currency of the settlement.
Original Currency	Original currency of the cashflow.
Sign	Direction of the settlement, which can be: Any (either settlement made or received), Negative (settlement going out), or Positive (settlement coming in).
Settlement Attributes	<p>Additional settlement attributes assigned to settlements during generation</p> <p><b>Collateral:</b> Coupon and redemption settlements related to collateral holdings are flagged as 'Collateral'. This includes coupons and redemptions from the issuer to the holder of the security, and from the holder to the 'economic owner' of the security.</p> <p><b>Payback:</b> All settlements related to the 'payback' of an investment are flagged 'Payback'. These include Interest and Redemption settlements from deposits, discount papers, bonds, IRSs and repos. All settlements related to early expirations and roll-overs are also flagged 'Payback'.</p> <p><b>Repo:</b> All settlements from repos (and reverse repos, buy/sellbacks and sell/buybacks) are flagged 'Repo'.</p> <p><b>Security:</b> All payback settlements from the issuer of a security to the holder of the security are flagged as 'Security'. Securities in this context includes bonds, discount papers and equities. Also, netting flows of futures (and future style options) are flagged as 'Security'.</p>
Our Client Our Client Main Group Our Client Group	Client (or Client Main Group or Client Group) making/receiving the settlement (that is, the portfolio owner).
Our Bank Our Account 1, 2, 3, and 4	Bank and account details of the client (portfolio owner) making/receiving the settlement.
Counterparty Client Counterparty Client Main Group Counterparty Client Group	Client (or Client Main Group or Client Group) making/receiving the settlement (that is, the counterparty or beneficiary of the settlement).
Counterparty Bank Counterparty Account 1, 2, 3, and 4	Bank and account details of the client (counterparty or beneficiary) receiving the settlement.
Settlement Type	<p>Settlement type for this rule. Choose from:</p> <ul style="list-style-type: none"> <li>Cash - cash settlement (payments only)</li> <li>Security - security settlement.</li> </ul>
Settlement Client	Place of settlement. This is a client defined with the role <i>Central Securities Depository (CSD)</i> or <i>International Central Securities Depository (ICSD)</i> .
State	Select the settlement state on which you want the rule to apply. Examples of settlement states: Released, Generated, Waiting for Release, and so on.
Transfer Method	Method of transfer (or advice), for example fax or file, used for the transfer. See <i>18.2.1.2 Defining settlement methods</i> on page 507.

Information	Description
Settlement Parameter #0-19	<p>Define the conditions that settlements must match for this rule to apply.</p> <p>Note that you can change the names of settlement parameters, and define your own values for them: see <i>3.38 Parameters (optional)</i> on page 148 for more information.</p> <p>Note also that the settlement parameters can be populated during settlement generation via a CSD.</p>
Switches	<p>Activate the switches that apply to this settlement rule.</p> <ul style="list-style-type: none"> <li>• <b>DvP Rule</b> - for custody settlement where there is a delivery-versus-payment agreement. The resulting instruction or advice message contains information for both the payments side and the security transfer side (compare with <b>Settlement Type = Security</b> above).</li> <li>• <b>Dispatched to SWIFT</b> - set automatically on the settlement when TRMSwift has sent the settlement to SWIFT. Setting this switch in the rule, you can use the rule in the settlement flow to determine when a settlement should be sent further in the flow or when it can no longer be rejected.</li> <li>• <b>Netting Completed</b> - set automatically on the settlement when the automatic netting is finalized (i.e. netting cut off time reached). When switched on in the rule, you can use the rule in the settlement flow to determine when a settlement should be sent further in the flow or when it can no longer be rejected.</li> <li>• <b>SWIFT Success</b> - set automatically on the settlement when TRMSwift has received a success message from SWIFT. When switched on, you can use the rule in the settlement flow to determine when a settlement should be sent further in the flow or when it can no longer be rejected.</li> </ul>

3. Click **Add** to add the settlement rule.
4. Repeat these steps for each condition that you want to include in the settlement rule definition.
5. Save the settlement rule definition using **File - Save As New**.

### 18.2.1.2 Defining settlement methods

After you have defined the settlement rules, the next step is to set up transfer methods (or advice methods) and to assign the settlement rules to them.

You can set up TRM to send settlement instructions automatically to your bank whenever a settlement is generated in TRM. In TRM, these automated settlement instructions are called settlement transfers. You can define the method used for settlement transfers and the format of the transfer (for example, a SWIFT message or Fed wire).

Settlements can be negative as well as positive (payments that you receive rather than make, namely receipts). You can set up TRM to send automatic messages to your counterparties, informing them of any settlement transfers that they will receive from you and reminders of payments that they have to make to you: these are called settlement advice messages.

The procedure for creating settlement transfers and settlement advice messages is almost identical. Transfer methods are defined in Settlement Transfer Method Editor, and settlement advice messages are set up in Settlement Advice Method Editor.

Both editor layouts are based on the application Static Data Editor (see *3.2 Static Data Editor* on page 41 for more information).

See also *Chapter 21 Managing messages* on page 555.

To set up the settlement transfers or settlement advice methods:

1. In Settlement Transfer Method Editor (or Settlement Advice Method Editor), complete the fields using the following information:

Information	Description
ID	Unique ID for the transfer type or advice type.
Priority	Priority of the settlement rule that determines which method is used (the lower the number, the higher the priority).
Rule Not Rule	Rule (or Not Rule) you have created in Settlement Rule Editor that defines which method is used. If more than one rule is matched, TRM uses the rule with the highest priority.
Method	Method of transfer (or advice), for example fax or file, used for the transfer. You can also create a method that is for specifying no method at all, to avoid duplications for exceptions: for example, if you want SWIFT MT 100 messages for all clients meeting certain criteria, except client X. Your TRM consultant can advise you which methods are available during implementation.
Address Type	(Settlement transfer methods only) Address type. Choose from: Address, E-mail, Fax, Swift, or Telex.
Command	Command necessary to execute a program for sending the settlement instructions or advice by fax, or for creating the settlement transfer files. Your TRM consultant can advise you which commands are available during implementation.
Format	(Settlement transfer methods only) Format of the transfer method. Choose from: FO XML, PDF, or Postscript.

2. Click **Add** to add the method to the definition.
3. Repeat these steps for each method that you want to include in the definition.
4. Save the definition using **File - Save As New**.

### 18.2.1.3 Defining cut-off times

A bank cut-off time is a deadline set by a financial institution for a specific region or location that indicates when specific types of transactions need to be received by the bank in order to receive "good value" for the funds on a specific day.

For example, Citibank New York may need to receive all EUR international wire instructions by two o'clock in the afternoon in order for the bank to guarantee the value of the funds for today's value. Any wire instructions received after this cut-off time will still be processed but *good value* for the funds will not be received by the beneficiary's bank until the next business day.

In TRM, the bank cut-off time is for information only. It is possible to define a generation cut-off time to indicate the date/time when settlements will be automatically generated from cashflows, a netting cut-off time to define when netting should be completed, and a release cut-off time to define when settlements will be automatically released (sent to the financial institution).

The logic for calculating the cutoff date/time is always the same. First, to establish the cutoff date (for a settlement matching the rule), the system calculates a date backwards from the payment date of the settlement. If the convention is to use business days in the calculation, it is the calendar of the currency of the settlement that is used. If a holiday calendar is defined, the system will further check whether the date obtained (after applying the offset) is a non-business day according to the holiday calendar. If it is a non-business date, the cut-off date is moved backwards to the closest prior business date. As the last step, the cutoff time of the settlement is assigned as the time of day (in the given time zone) as entered by the user.

Cut-off times are set up in Cut-Off Time Editor.

To define a cut-off time:

1. In Cut-Off Time Editor, enter the details of the cut-off time using the information in the following table:

Information	Description
ID	(Information only) System-generated identification number.
Domain	(Mandatory) Domain in which this cut-off time is available.
Owner	Portfolio owner to which the cut-off time applies.
Description	Any comment you want to add about the cut-off time.
Rule	Settlement rule (defined in Settlement Rule Editor) that identifies the type of settlements that are concerned by this cut-off time. If you do not specify a <b>Rule</b> , then the cut-off time applies to all settlements.
Not Rule	Settlement rule that identifies the type of settlements that are not concerned by this cut-off time.
Currency Currency Group	Currency / Currency Group concerned by this cut-off time. If no <b>Currency</b> or Currency Group is specified, then the cut-off time applies to all currencies.
Transfer Method	Transfer method used for settlement that is concerned by this cut-off time (defined in Settlement Transfer Method Editor). If no <b>Transfer Method</b> is specified, then the cut-off time applies to all transfer methods.
Type	(Mandatory) Type of cut-off. Choose from: <ul style="list-style-type: none"> <li>• <b>Bank Cutoff</b> - defines the cut-off time as enforced by the financial institution. Any instructions received after this cut-off time will not receive "good value". When selected, the Convention field defaults to <b>Business Days</b> and cannot be changed.</li> <li>• <b>Generation</b> - defines when the settlements are to be generated. If no generation cutoff is defined, then the cashflows are generated at the release cutoff. When selected, the Convention field defaults to Days. You can modify the convention according to you needs.</li> <li>• <b>Netting</b> - defines by when netting should be completed. When selected, the Convention field defaults to Business Days and cannot be changed.</li> <li>• <b>Release</b> - defines when settlements will be released. When selected, the Convention field defaults to <b>Business Days</b> and cannot be changed.</li> </ul>
Priority	(Mandatory) Number indicating the priority of this cut-off time and rule combination. You assign priorities to avoid conflicts between rules: the lower the number, the higher the priority.
Days	(Mandatory) Number of days (negative or zero), in relation to the payment date, to which this cut-off time applies. For example, if you select -2, then the payments are generated two days before the value date according to the convention. You can select 0 if you want to generate payments on the value date. If Calendar Group is specified, then the business days are calculated accordingly.
Convention	(Mandatory) This field is set automatically according to the type you select in the <b>Type</b> field. Depending on the selected type, you may or may not be able to modify the convention. <ul style="list-style-type: none"> <li>• <b>Business Days</b> - checks the calendar for holidays associated to the calendar group.</li> <li>• <b>Days</b> (normal calendar week) - no check is done.</li> </ul>
Holiday Calendar	An additional calendar to be checked so that the cutoff date is not a non-business day in this calendar. This is usually the local calendar.
Time Zone	Time zone in which the cut-off time applies (defined in Time Zone Editor).

Information	Description
Time	Time to which the cut-off time applies.
Alarm Time	The alarm time corresponds to the latest time you would want to send a payment to the bank: this should be before the bank's cut-off time but after the release time. All payments should be paid by this time.
Switches	Disabled - switch on to disable the cut-off time definition without deleting it.

2. Save the cut-off time definition using **File - Save As New**.

## 18.3 Generating and processing settlements

This section describes how settlements are generated, and processed through the settlement flow in Settlement Processing. The settlement flow uses similar state and mode concepts as those in Transaction Manager's transaction flow. Depending on the flow configuration, different versions of this board can be used for different states of the settlement.

---

**Note:** See the *TRM System Administration Guide* for information about setting up the settlement flow.

---

Settlement Processing enables you to view and verify generated settlements. Settlements are generated from cashflows, and they represent the incoming and outgoing cash and security (bond, equity) settlements between the cash and custody accounts of the portfolio owner and counterparty.

For a given financial transaction, the system will by default try to generate as few settlements as necessary. Normally, all cashflows with matching terms (settlement date, currency, and settlement instructions) are automatically aggregated during settlement generation. For example, the final interest payment of a deposit will be aggregated with the repayment of principal, giving only one settlement on the maturity date. The accrued interest and principal payment of a bond purchase/sale will result in one cash settlement, and will also include the security settlement for a DvP (Delivery versus Payment) settlement.

In certain cases, not all cashflows should be automatically aggregated even if the settlement date, currency, and settlement instructions match. For example, coupons compensation payments between repo parties should not always be settled with the repo interest and maturity settlement. Settlement generation creates separate settlements for such cashflows, and in general provides additional information in some settlements in order to allow you to identify certain types of settlements (and create settlement rules against them). The information (settlement attributes) added to settlements during settlement generation is listed in the table below. Settlements that do not share the same settlement attributes will not be automatically aggregated during settlement generation.

Settlement attributes added to settlements during generation:

Settlement Attribute	Description
Repo	All settlements from repos (and reverse repos, buy/sellbacks and sell/buybacks) are flagged 'Repo'.
Collateral	Coupon and redemption settlements related to collateral holdings are flagged as 'Collateral'. This includes coupons and redemptions from the issuer to the holder of the security, and from the holder to the 'economic owner' of the security.
Payback	All settlements related to the repayment of an investment are flagged 'Payback'. These include Interest and Redemption settlements from deposits, discount papers, bonds, IRSs and repos. All settlements related to early expirations and roll-overs are also flagged 'Payback'.

Settlement Attribute	Description
Security	All payback settlements from the issuer of a security to the holder of the security are flagged as 'Security'. Securities in this context includes bonds, discount papers and equities. Also, netting flows of futures (and future style options) are flagged as 'Security'.

As explained above, in settlement generation, the cashflows within a transaction are automatically aggregated into one settlement provided the terms and settlement attributes match. However, it is possible to slightly deviate from this transaction level aggregation by using the instrument feature *Settlement Setup*. This instrument feature exposes a **Settlement Setup** tab with **Generation Method** field, allowing you to select one of the following Settlement Methods to be applied to the instrument:

Generation Method	Description
Transaction Number	Cashflows belonging to the same transaction are automatically aggregated. This is the default behavior, i.e. this is how the settlements are aggregated when no generation method is selected.
Transaction Number, Leg	Same as 'Transaction Number', but aggregation is done within the leg group of a transaction, i.e. cashflows in different leg groups are not aggregated (applies to IRSs, i.e. IRS interest payments would be settled separately).
Cashflow Type	Cashflows belonging to the same transaction are aggregated as long as they share the same cashflow type.
Continuation Number	Cashflows from transactions sharing the same continuation number are aggregated.
Continuation Number, Leg	Same as 'Continuation Number', but aggregation is done within leg groups, i.e. cashflows in different leg groups are not aggregated.
Position	Cashflow aggregation is done across all transactions that use the same instrument within the same portfolio (allowing for example bond coupons to be aggregated across multiple transactions).  Note that this applies to cashflows that are being generated into settlements in one go. If there are previously generated settlements, they will not be aggregated with the new settlement even if the terms match.
None	No settlements are generated for this instrument.

---

**Note:** Settlement terms and attributes still need to match in order for cashflows to be aggregated i.e. this setup only applies to the level of aggregation. To clarify, the above logic applies to automatic aggregation of cashflows into settlements that takes place immediately during settlement generation. It is possible to further net different settlements during the settlement process. This can be done automatically according to netting rule definitions, or manually by the user.

---

Settlement generation can be triggered in three different ways:

- Automatically at a certain point in the transaction flow.
- Using the **Settlement Generation** activity.
- Manually in Settlement Processing.

The automatic generation in the transaction flow and the activity always check the cut-off time definitions, and settlements will only be generated from cashflows having reached their cut-off time. For example, the transaction flow may be configured to generate settlements when a transaction reaches the **Final** state. Then, if a 1 month term deposit reaches the **Final** state, and if the cut-off time for the initial Principal flow of the deposit has been reached, the system will immediately generate the settlements for the Principal cashflow. The settlement related to the Expiration and Interest cashflows will be generated by an activity (set up to run automatically at regular intervals) approximately one month later, i.e. when the cashflows reach their generation cut-off time. It is

always possible to generate the settlements manually, by simply supplying the payment date range for which settlements will be generated. In this case the cut-off time definitions will not be checked.

The following general conditions must be met in order to generate a settlement:

- Transactions must be in the configured state in the transaction flow for generation, usually FINAL. For more information see the *TRM System Administration Guide*.
- Cashflows must belong to portfolios that are not flagged as **Not Payable** see 3.15.1.1 *Setting further portfolio attributes* on page 94).
- Cashflows must not be flagged **Paid**, i.e. settlements must not have already been generated from the cashflow.
- All cashflows of the transaction payable on the same day that share the same settlement instructions and currency must be fixed, i.e. settlements are not created if some of the cashflows that could be aggregated into a single settlement are still unfixed.
- All cashflows that are to be netted belonging to transaction(s) must be in a **Payable** state, i.e. settlements are not generated if any of the cashflows that are to be netted belong to transaction(s) that are not yet in a **Payable** state.

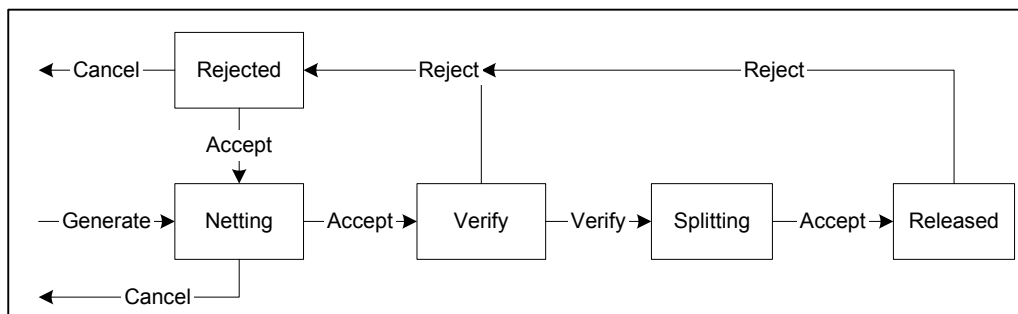
---

**Note:** In some cases, it may be necessary to look back a set number of days to check for any backdated settlements that may not have been generated. This number of days is configured in Configuration Table Editor using the **Payment Period Days** parameter. The default is 0. If this setting is configured, TRM generates settlements for cashflows from the due date (in the case of Settlement Generation activity) or system date (in the case of the flow) and then looks back the number of days configured in this parameter. For more information, see the *TRM System Administration Guide*.

---

You can also use Settlement Processing to net and split settlements or undo netting and unsplitting. Netting enables you to group a large number of settlements together into one settlement. Netting can be set up at the client level through a netting rule attached to the definition on the payment counterparty, but you can also net settlements manually in Settlement Processing, see 18.3.4.5 *Netting settlements* on page 516. Splitting enables you to break down a large settlement into smaller settlements, for example, if netted settlements exceed the authorized single amount for a settlement defined in the Amount Rule Editor. See 18.3.4.6 *Splitting settlements* on page 517.

The following figure illustrates a simple settlement flow:





### 18.3.1 Settlement Processing menus

The following tables describe the menu items which are specific to the processing mode of Settlement Processing and any other layout or mode which is based on the application.

Other menu items which are common to all applications are described in *2.2.6 Using application menus* on page 34.

#### 18.3.1.1 View

Like other TRM applications, Settlement Processing also provides a main view, named **Settlement** view, which is always displayed. The **Settlement** view shows all retrieved settlements. It is in this view that you can do most of the settlement processing actions.

Menu item	Description
Settlement Query	Displays the <b>Settlement Query</b> view. This view is used to retrieve settlements that are already in the system into the <b>Settlement</b> view for further processing: see <i>18.3.4.4 Retrieving settlements</i> on page 516.
Settlement Detail	Displays the <b>Settlement Detail</b> view. This view displays additional information about the selected settlement. For example, banking information.
Transaction Cashflow Details	Displays the <b>Transaction Cashflow Details</b> view. This view displays details of the transaction cashflows belonging to a settlement. Note: You can quickly look up the transaction by right-clicking the cashflow row and selecting <b>Transaction Lookup</b> .
Settlement Comment	Displays the <b>Settlement Comment</b> view. This view displays the comments and other comment-related information of the selected settlement. For example, id of the user who entered the comment, comment text, mandatory and minimum states, id of the rule that was used, and settlement number, and so on.

#### 18.3.1.2 Command

Menu item	Description
Accept	Accepts the selected settlement and moves it forward in the settlement flow. See <i>18.3.4.7 Accepting or rejecting settlements</i> on page 519 for more information.
Reject	Allows you to reject settlements in Settlement Processing and so move them backwards in the settlement flow. See <i>18.3.4.7 Accepting or rejecting settlements</i> on page 519 for more information.
Apply Cancel Reset	Commands are used to save, cancel, or reset an entity and can move the entity to a different state in the process flow.
Net Settlements Undo Netting	Allows you to combine payments which have the same payment date, currency, and settlement instructions into a single settlement. You can also undo a netted settlement. See <i>18.3.4.5 Netting settlements</i> on page 516 for more information.
Split Settlement Unsplit Settlement	Allows you to split one generated settlement into several smaller settlements. You can also unsplit split settlements. See <i>18.3.4.6.2 Splitting settlements manually</i> on page 519 for more information.

### 18.3.2 Start-up parameters

Settlement Processing is a special Transaction Manager layout, designed specifically for processing settlements through the process flow.

The start-up parameter used to open Transaction Manager's Settlement Processing mode is:

```
FKTransactionManager.exe -c SMP.xml
```

See *C.11 Transaction Manager* on page 685 for information about the options available.

---

**Note:** To use the specific Credit/Debit Client view in Settlement Processing, include the following argument in the startup parameter

```
--view settlement-credit-debit-processing
```

---

### 18.3.3 Settlement processing modes

Settlement Processing has a settlement flow process resembling the transaction flow process used for transactions in Transaction Manager.

The settlement flow process is configured so that only users with the necessary permissions have access to committing or accepting settlements. For example, in settlement processing one person may have the rights to net settlements, while another person can only accept them.

See *2.2.10.3 Manager modes* on page 37 for more information.

### 18.3.4 Processing settlements

The settlement processing procedure includes the following:

- Retrieving generated settlements for a specific date or period, or when applicable, generating settlements manually.
- Verifying and accepting generated settlements.
- If necessary, netting, unnetting, splitting and unsplitting settlements.

These stages of the settlement procedure are carried out in Settlement Processing and are described in the following sections.

Optionally, you may find it useful to run the Settlement Report to verify the generated settlements before processing them in Settlement Processing.

#### 18.3.4.1 Generating settlements via an activity

In general, settlements are generated by an activity. Settlements are generated when:

- The transaction has reached the configured state in the transaction flow, and
- The cashflow has reached the generation cut-off time.

---

**Note:** Some settlements may get generated through the transaction flow since some cashflows may have already reached their cut-off time when the transaction is set to the configured state.

---

To set up the **Settlement Generation** activity:

1. In Activity Manager, create a new activity using activity type **Settlement Generation**.
2. Select group **NIGHTLY**.
3. Enter the Due Date Offset, for example, -1 if you want the activity to process data from the previous day. The intervals that you define in the **Intervals** page are then measured from this date/time.

If your system is set up to look back for past unpaid cashflows, the system generates settlements for unpaid cashflows in the period defined by the due date and the number of days configured in the Configuration Table Editor. See *TRM System Admin Guide*.

---

**Note:** For information on the other activity parameters, see *A.64 Settlement Generation* on page 654.

---

4. Set the activity to run at regular intervals in the **Intervals** page, for example, every morning to ensure that you can process the generated settlements during the day.

For example, if you enter 20-Feb-2009 as due date, and then set the unit count to **1** and the unit to **Add Day**, the activity will run once every day from the due date.

For more information about activities, see *6.2.1.2 Defining activity intervals* on page 231.

5. Click **Save As** to save the whole activity definition.

---

**Note:** Activities are set up and managed in Activity Manager: see *Chapter 6 Managing activities* on page 227 for more information.

---

#### 18.3.4.2 Generating settlements manually

Settlements that have not been generated automatically or by an activity can be generated manually in Settlement Processing. You can generate settlements for one particular portfolio or transaction for the selected date range.

To generate settlements manually:

1. In Settlement Processing, select **New - Generate Settlements**.
2. In the **Generate Settlements** dialog, select the date range in which you want to generate settlements for payable cashflows within this range.
3. Select one of the following options according to your needs:
  - To generate settlements for one particular portfolio, leave the **Transaction Number** field empty and select the portfolio for which you want to generate settlements.
  - To generate settlements for one particular transaction, enter the transaction number in the **Transaction Number** field and leave the **Portfolio** field empty.

---

**Note:** You can select a Rule/Not Rule to include/exclude particular settlements.

---

4. Click **OK**.

All generated settlements are displayed in the **Settlement** view.

#### 18.3.4.3 Generating settlement comments

In the **Settlement Comment** view of Settlement Processing you can view any rule-based settlement comments that apply to the transaction. These comments can be generated manually using the **Add Comments** action.

To manually generate settlement comments:

1. Open the **Settlement Comment** view from the **View** menu in Settlement Processing.
2. Right-click on the transaction and select the action **Add Comments**. The **Settlement Comment** view will be populated with any settlement comments that apply to the transaction as well as any transaction comments that have been copied to the settlement.
3. If you have manually edited some comments and want to go back to the default comments or if you want to remove comments that no longer apply, re-run the **Add Comments** action. Re-running the action gives you the opportunity to either:

- **Replace existing comments with default values**

This action replaces any comments that have been modified manually by the default comments defined in the Comment Rule Editor.

- **Delete existing comments for non matching rules**

This action removes any comments that no longer apply to the transaction. For example, a comment may be added to a transaction based on a rule that applies to all transactions in USD.

Then, if the transaction's currency is changed from USD to Euro, the rule and therefore the comment no longer apply.

---

**Note:** See 3.22 *Comments and comment rules (optional)* on page 132 for more information on settlement comments.

---

#### 18.3.4.4 Retrieving settlements

This section describes how to retrieve generated settlements using the **Settlement Query** view. Settlements are retrieved from a blank query row, much in the same way as you would do to retrieve transactions in Transaction Manager. See 2.2.10.5 *Retrieving entities* on page 38 for more information.

---

**Note:** You can only retrieve settlements that have the relevant state that corresponds to the Settlement Processing mode.

---

You enter the criteria that you want the retrieved settlements to match in this row. The **Date From** and **Date To** columns default to the current date. You can select the same date for both to retrieve settlements for a given date or select different dates to retrieve settlements for a period. The resulting settlements are displayed in the **Settlement** view.

---

**Note:** You can view the cashflows of a settlement by making sure that the **Transaction Cashflow Details** view is visible, and then selecting the settlement in the **Settlement** view. The cashflow details for that settlement appear in the **Transaction Cashflow Details** view.

---

#### 18.3.4.5 Netting settlements

You can net settlements with the same payment date, currency, and settlement instructions (default netting criteria) into one single settlement.

Settlement netting can be carried out in two ways: manually and automatically.

- Manual netting can be done on a settlement by settlement basis and is carried out in Settlement Processing after settlements have been generated. In this case, the settlements must have the following data in common: counterparty, currency, payment date, and settlement instructions. For more information about manually netting settlements, see 18.3.4.5.1 *Netting settlements manually* on page 516.
- Automatic netting is done based on the conditions set up in the **Netting Rules** page of Client Editor. A netting cut-off time can be defined in Cut-Off Time Editor. Settlements generated after the netting cut-off time are not netted. For those settlements that were not netted, you can nevertheless choose to net them manually. For more information about setting up automatic netting, see 3.13.1.14 *Specifying automatic netting for settlement flows* on page 105.

Security netting can be carried out when the same instrument is traded on several deals with the same counterparty and for the same value date. DvP and free security settlements are netted separately.

---

**Note:** To net settlements from sub-portfolios that belong to the same client, but do not have the same top portfolio, use the NETTING-PORTFOLIO-ID property in Client Editor. To net settlements across different portfolio owners, use the NETTING-CLIENT-ID property. For more information about properties, see 3.13.1.3 *Defining properties* on page 93.

---

##### 18.3.4.5.1 Netting settlements manually

To manually net several settlements into a single settlement in Settlement Processing:

1. Select the settlements that you want to net into one single settlement by clicking their rows in the **Settlement** view while keeping the **Ctrl** key pressed.
2. Select **Command - Net Settlements**.

The selected settlements are replaced by one single net settlement. Details of the original settlements can be seen in the **Transaction Cashflow Details** view when the net settlement is selected.

---

**Note:** To undo the netting and reinstate the individual underlying settlements, select **Command - Undo Netting**.

---

### 18.3.4.6 Splitting settlements

You can split one generated settlement into several settlements. For example, you may want to break up a particularly large settlement into smaller settlements. This can be done either automatically (set up in the Split Rule Editor) or by manual split (defining the maximum allowed amount). These rules are used for both automatic and manual splitting of settlements.

Split settlements can be modified and moved backwards and forwards in the settlement flow: the cashflow information is held within the cashflow of the original payment. You can specify split amounts with Amount Rule Editor (see *18.3.4.6.2 Splitting settlements manually* on page 519).

#### 18.3.4.6.1 Setting up splitting rules

Splitting can be done automatically at the time that settlements are generated through the flow or manually. To automate the split, you must first set up the transaction flow accordingly (see *TRM System Admin Guide*).

To ensure that splitting is done correctly, you need to set up a splitting rule that uses the settlement rule you set up previously (*18.2.1.1 Defining settlement rules* on page 505) and, if applicable, the amount rule described in this further on in section. Automatic splitting produces the same result as a manual split, but without user intervention.

#### Specifying split amounts with Amount Rule Editor

You can use Amount Rule Editor to define either a range of amounts (usable for the settlement flow) or a maximum amount to be used for the split. Amount Rule Editor allows you to create a rule specifying maximum and minimum positive and negative amounts, for example. You can then select this rule in the Amount Rule field of Split Editor to define the split operation.

To define an amount rule:

1. In Amount Rule Editor, enter the following information:

Information	Description
ID	ID of the rule.
Name	Name of the rule
Rule Type	Choices are <b>Settlement Flow</b> or <b>Split</b> . Select <b>Split</b> to define an amount rule for splitting.
Domain	List of domains. Select the domain to which this amount rule applies.
Amount type	Choose from <b>Amount</b> , <b>Delivery Amount</b> , <b>Face Amount</b> , or <b>Units</b> . See <i>18.3.4.6.2 Splitting settlements manually</i> on page 519.
Minimum Positive Amount	Absolute value of minimum amount.
Maximum Positive Amount	Absolute value of maximum amount.
Maximum Negative Amount	Absolute value of maximum amount.
Minimum Negative Amount	Absolute value of minimum amount.
Figure currency	Choose a currency from the list.
Scenario	Choose from the list of defined scenarios. The selected scenario is used for the conversion. If no scenario is defined, the fallback scenario is used, and if this is not defined, the DEFAULT scenario is used.

2. Switch on the switch **Use FX Spot** if you want the amount to be converted using the FX spot rate.
3. Switch on the switch **Zero Amount Rule** if you want the rule to apply to settlements with an amount equal to zero.

---

**Note:** **Zero Amount Rule** switch is only available with the Settlement Flow rule type.

---

4. Save the amount rule.

### Specifying split proportions with Split Rule Editor

Use the Split Rule Editor to define what types of settlement are split into what portions. Enter the following information:

Information	Description
ID	Split Rule ID.
Name	Split Rule name.
Domain	List of domains to which this rule applies.
Settlement Rule	Shows the list of available settlement rules. Settlement rules are defined in the Settlement Rule Editor. If you cannot find the settlement rule you want to use, right-click in the field and select <b>Edit settlement rule entity...</b> menu option to open the Settlement Rule Editor and create the rule.
Amount Rule	Shows the list of available amount rules. Amount rules are defined in the Amount Rule Editor. Select the rule you want to apply to this split.
Minimum Remaining Amount	Minimum threshold amount.

### 18.3.4.6.2 Splitting settlements manually

To split a single settlement into several settlements:

1. In the **Settlement** view, select the settlement that you want to split.
2. Select **Command - Split Settlement** or right-click the settlement and select **Split Settlement**.
3. In the **Split Settlement** dialog, depending on the type of transaction to be settled, enter the amount or number of delivery units to be split from the original settlement.

Information	Description
Amount	Amount of the settlement that you want to split from the original settlement. This specifies the amount package sizes used. This amount must be less than the original payment amount, and must have the same sign.
Delivery Amount	Delivery amount of the settlement that you want to split from the original settlement. Delivery amount is the amortized value (for an amortizing structure) when the paper is traded on face amount. This amount would represent the remaining amount / delivery.
Face Amount	Face amount of the paper being traded that you want to split.
Delivery Units	Number of units of the settlement that you want to split from the original settlement. The amount is always rounded down to the next trading unit (in the case of delivery). Otherwise, the amount is rounded according to the rounding precision defined for the currency.

4. Click **OK** when you have finished entering the amount or unit.

TRM generates the new settlement details in the **Settlement** view. The number of the original settlement is displayed in the **Split Source** column. The new settlement(s) can be processed through the settlement flow in the usual way.

---

**Note:** To unsplit settlements which have previously been split back into the original settlement, select **Command - Unsplit Settlement**.

---

### 18.3.4.7 Accepting or rejecting settlements

TRM is usually configured so that you must accept generated settlements before they are transferred.

To accept a settlement:

1. Retrieve the settlements into Settlement Processing (see 18.3.4.4 *Retrieving settlements* on page 516).
2. Verify the settlement details.

---

**Note:** You can quickly look up attached FINMessage by right-clicking the settlement and selecting **Lookup FIN Message**.

---

3. Send or return the settlement to the appropriate state in the settlement flow, as follows:
  - If the details are correct, accept the settlement and move it forward in the settlement flow using **Command - Accept**.
  - If the details are not correct, reject the settlement and send it back in the flow to be modified or canceled using **Command - Reject**.

### 18.3.4.8 Canceling settlements

In some cases, you may have to cancel settlements, for example, when you have to amend the settlement. When you cancel settlements, the settlements are deleted, paid flag is removed from the related cashflows, and the cashflow is available to be regenerated.

### 18.3.5 Modifying settlement instructions

You can only modify existing instructions defined in the Client Editor. To set new instructions, first update Client Editor accordingly. When accounts are updated or new accounts are created in Client Editor, you can update all outstanding (future) cashflows by running the *Update Settlement Instructions* activity (see *A.72 Update Settlement Instructions* on page 657). The activity allows you to see which transactions need settlement instructions to be updated before actually committing the changes.

---

**Note:** Activities are set up and managed in Activity Manager: see *Chapter 6 Managing activities* on page 227 for more information.

---

### 18.3.6 Generating settlement processing reports

There are a number of reports you can use to view settlement processing information.

Report	Description
Settlement	This report is used to control and verify settlements. It also serves as an aid for liquidity planning and lists all the settlements which must be paid and received within the selected period. See <i>B.45 Settlement Report</i> on page 677 for details of the report's parameters.
Settlement Cashflows	Similar to the Settlement report, this report shows all of the related cashflows of the transactions. See <i>B.46 Settlement Cashflows Report</i> on page 677 for details of the report's parameters.
Settlement Log	This report provides a log of all changes made to the settlements in Settlement Processing. See <i>B.48 Settlement Log Report</i> on page 678 for details of the report's parameters.

## 18.4 Managing custody movements and balances

You can monitor the custody movements and the corresponding custody balances in Custody Manager. Custody Manager allows you to:

- Query and monitor custody movements and balances
- Generate custody balances
- Retrieve, monitor, import and create custody balance statements

Other menu items which are common to all applications are described in *2.2.6 Using application menus* on page 32.

### 18.4.1 Start-up parameters

Custody Manager is a special Transaction Manager mode, designed specifically for processing custodies.

The start-up parameter used to open Transaction Manager's Custody Manager mode is:

```
FKTransactionManager.exe -c CBE.xml --view custody-entry
```



See *C.11 Transaction Manager* on page 685 for information about the options available.

## 18.4.2 Custody Manager views

Custody Manager uses various views for querying and displaying custody movements, balances, future custody balances.

The following views are available from the **View** menu in Custody Manager:

View	Description
Custody Balances Query	Displays the <b>Custody Balances Query</b> view. Use this view to retrieve custody balances. The results are displayed in the <b>Custody Balances</b> view or a future date are displayed in the <b>Future Custody Balances</b> view. Unlike the other views that are available from the <b>Views</b> menu, the Custody Balances view is always displayed at the top of screen.
Future Custody Balances	Displays the <b>Future Custody Balances</b> view. Shows all custody balances that match the query criteria.
Custody Movements Query	Displays the <b>Custody Movements Query</b> view. Use this view to retrieve custody movements. The results are displayed in the <b>Custody Movements</b> view.
Custody Movements	Displays the <b>Custody Movements</b> view. Shows all custody movements that match the query criteria.
Custody Balance Statements Query	Displays the <b>Custody Balance Statements Query</b> view. Use this view to retrieve custody balances. The results are displayed in the <b>Custody Balance Statements</b> view.
Custody Balance Statements	Displays the <b>Custody Balance Statements</b> view. Shows all custody balance statements that match the query criteria.

## 18.4.3 Retrieving custody movements

Custody Manager shows custodies that have been generated automatically by transactions made using instruments defined as deliverable in Instrument Editor. If any transfer transactions have been entered for deliverable instruments, these can be retrieved into the **Custody Movements** view.

To retrieve custody movements:

1. In the **Custody Movements Query** view, right-click the column headers and select **Select Columns** to select the columns where you want to enter query criteria.
2. Enter criteria in one or more columns to retrieve the custody movements.

---

**Note:** Criteria entered in the same row is separated by the AND operator and all criteria must match. On the other hand, criteria entered in a different row is separated by the operator OR and can match either.

---

3. Select **File - Query** (or press **Ctrl+E**) to retrieve the custody movements that match the criteria you entered.
4. The query result is displayed in the **Custody Movements** view.

## 18.4.4 Generating custody balances

You can view custody balances (i.e. to see how much each custodian is holding) in Custody Manager's **Custody Balances** view. However, before the custody balances can be viewed, they must be calculated from the custody movements.

There are two ways to generate custody balances:

- Automatically by using the activity **Custody Balances**: see *A.17 Custody Balances* on page 633 for details of the activity's parameters.

Activities are set up and managed in Activity Manager: see *Chapter 6 Managing activities* on page 227 for more information.

- Manually by selecting **New - Generate Custody Balances** and selecting the relevant parameters. These parameters are identical to the ones you set up in the activity.

### 18.4.5 Retrieving custody balances

After you have generated the custody balances, you can view the custody balances in the **Custody Balances** view. See *18.4.4 Generating custody balances* on page 521 for more information about generating. The custody balances show how much each custodian is holding.

Custody balances are calculated based on custody movements, such as, how many of one particular instrument exists in a particular custody.

To retrieve custody balances:

1. In the **Custody Balance Query** view, select the custody balance columns for which you want to retrieve information.
2. Enter criteria into one or more of the custody balance columns that you have selected in order to retrieve specific balance information.
3. Select **File - Query** (or press **Ctrl+E**) to retrieve custody balances that correspond to the criteria you specified.

#### 18.4.5.1 Retrieving for active today

In the **Custody Balance** view, you can view the balances which are active with today's date. However, it is important to note that when you retrieve custody balances which are active today, the balances may not always have today's date. This is because the **Date** field displays the date on which the custody balance was last modified, therefore balances from previous dates are also visible.

To retrieve balances active today:

1. In the **Custody Balances Query** view, select **Yes** in the Active Today column.
2. Retrieve the transactions with today's date using **File - Query** (or press **Ctrl+E**).

---

**Note:** You can also search for custody balances which are active today but with a date in the past. Simply enter the date into the date field, activate **Search Active Today**, and select **File - Query** (or press **Ctrl+E**). The custody balances are retrieved for the date you entered and previous dates, depending on when some of the balances were last modified.

---

#### 18.4.5.2 Retrieving future custody balances

You can retrieve specific balance information into Custody Manager and see how this information will appear on a future date. For this to work properly, the activity **Custody Balance** must be run after the end of business, but before midnight (see *18.4.4 Generating custody balances* on page 521).

To view balances in the future:

1. In the **Custody Balances** page, retrieve the custody balances for which you want to view balances in the future.
2. Select the columns for which you want to view balance information in the future using **Query - Balance Query Columns**.
3. Click **OK**.
4. Select **View - Future Balances**.

The future balances are displayed on the **Custody Balances** page. You can only view balances in the future for one custody and instrument at a time.

Note that if you have retrieved more than one balance and you therefore want to view the balances in the future for a different custody and instrument, you must select the new instrument and then reselect **Query - Future Balances**.

### 18.4.6 Entering custody statement data

You can use Custody Manager to reconcile custody balances, that is, match the custody balances in TRM with those of the custodian. Before you can do this, the custodian's data must be entered into TRM. This data can be input in one of two ways:

- It can be retrieved from a file (using **Command - Import Custody Balance Statement**)
- It can be entered manually in the **Custody Balance Statements** page (using **Command - New Custody Balance Statement**).

#### 18.4.6.1 Importing custody statement data

To retrieve custody balance statements from a file:

1. In the **Custody Balance Statements** page, select the custody statement columns for which you want to display information using **View - Statement Columns**.
2. Select **Command - Import Custody Balance Statement**.
3. In the **Import** dialog, enter the **Import Command** and the **File Name**.
  - The **Import Command** is the script command (for example, PERL script) used to import the file.
  - The **File Name** is the name of the data file to be imported.

This file should contain the minimum information that you must enter into TRM to be able to reconcile: Account, Date, Security Identifier Type (ISIN, SEDOL, CUSIP), Instrument ID, and either Units for equities or Amounts for money market instruments.

4. Click **OK**.

#### 18.4.6.2 Entering custody statement data manually

To enter custody statement data manually:

1. In the **Custody Balance Statements** page, select the custody statement columns for which you want to display information using **View - Statement Columns**.
2. Select **Command - New Custody Balance Statement**.
3. Enter the custody statement data in the new row that appears in **Unmatched Custody Balance Statements** view.
4. Select **Command - Apply** to save the custody statement data.

#### 18.4.6.3 Retrieving custody statement data

To retrieve custody statements that were previously entered in the **Custody Balance Statements** page:

1. In the **Custody Balance Statements** page, select the custody statement columns for which you want to display information using **View - Statement Columns**.
2. Enter criteria into one or more of the custody statement columns that you have selected in order to retrieve specific statement information.

Note that if you use **Face Amount**, **Amount**, or **Units** to retrieve the data, the same criteria is used to match the custody balances and statements in the **Custody Balance Reconciliation** page.

3. Select **Edit - Fetch** to retrieve the custody information that corresponds to the criteria you specified.

## 18.4.7 Custody reports

There are a number of reports you can use to view custody information:

Report	Description
Custody Balance	This report is used to monitor custody information and inform the custodian about deliveries. The custodian administers the instrument-related documents. This report lists any custody transaction in the same way as the <b>Custody Balances</b> page in Custody Manager.  See <i>B.17 Custody Balance Report</i> on page 666 for details of the report's parameters.
Custody Reconciliation	The results of custody reconciliation are displayed in this report.  See <i>B.18 Custody Reconciliation Report</i> on page 666 for details of the report's parameters.
Delivery	The Delivery report is used to monitor custody information and to inform the custodian about deliveries. Delivery Report links custody movements to actual transactions so that you can derive portfolio, instrument type, and other information that the custody transaction does not carry.  The report lists the location of the securities, where they were transferred from, when they were purchased, and their destination once they have been sold. It contains information on all transactions which have Value Date as well as the delivery on the reporting date.  The <i>Delivery</i> feature in Instrument Editor defines the instrument as deliverable (handled by a custodian) and enables the generation of a delivery cashflow. Only the transactions of instruments assigned with this feature are included in the Delivery Report.  See <i>B.22 Delivery Report</i> on page 667 for details of the report's parameters.

## 18.5 Reconciling settlements and custodies

This section describes reconciliation of settlements and custodies using Settlement Reconciliation (for cash) and Custody Reconciliation (for instruments). These two applications have similar layouts, based on the Manager application layout (see *1.4.3 Managers and Boards* on page 26). Other menu items common to all applications are described in *2.2.6 Using application menus* on page 34.

After you have imported or entered the statement of account information, you can proceed with the reconciliation of bank accounts, that is, you can compare the cashflow and settlement information or custody balances in TRM with the information reported to you by the bank.

Reconciliation of balances and statements is based on pre-defined or dynamically-defined reconciliation criteria, including Client, Account, Custodian, Instrument, Date, Balance Amount and Sellable Account. You can define a tolerance on amounts. This reconciliation criteria is set up in Reconciliation Setup Editor, see *18.5.3 Defining reconciliation setup* on page 526.

Reconciliation can be either automatic, in which case all retrieved items are taken into account, or manual for selected items. Matching can be done on a single basis, or after grouping of similar items. You can also automatically create settlement transactions from unreconciled settlements or statements of account, or from the reconciliation difference between the settlements and the statements.

TRM also provides a log mechanism to track the processing of the reconciliation, such as, the setup file reference used, applied difference action or actions, transaction number of the offset transaction, and so on. You can view this information in the **Log** column in the **Matched** view. You can also view the log information in the Reconciliation Log report (see *18.5.8 Reconciliation reports* on page 532). Additionally, you can attach comments to the matched item, for example, if you took additional actions not tracked in the **Log** column. User-defined comments are visible in the **Comments** column.

## 18.5.1 Start-up parameters

Custody Reconciliation and Settlement Reconciliation are special Transaction Manager modes designed specifically for reconciling custodies and settlements.

See *C.11 Transaction Manager* on page 685 for information about the options available.

### 18.5.1.1 Custody Reconciliation

The start-up parameter used to open Transaction Manager's Custody Reconciliation mode is:

```
FKTransactionManager.exe -c CBR.xml --view custody-reconciliation
```

### 18.5.1.2 Settlement Reconciliation

The start-up parameter used to open Transaction Manager's Settlement Reconciliation mode is:

```
FKTransactionManager.exe -c SMR.xml --mode RECONCILIATION --view  
settlement-reconciliation
```

---

**Note:** To use the specific Credit/Debit Client view in Settlement Reconciliation, include the following argument in the startup parameter

```
--view settlement-credit-debit-reconciliation
```

---

## 18.5.2 Reconciliation application views

Reconciliation applications use various views for querying matched and unmatched items (balances, settlements, and statements). This section describes the reconciliation of cash account types in Settlement Reconciliation. Though, the items' names may differ, the general concept of query, matched, and unmatched views remains the same in Custody Reconciliation.

In addition to the views available from the **View** menu in Reconciliation applications, there is also a view, called **Summary** view. Unlike the other views, which can be hidden or shown via the **View** menu, this view is always displayed at the top of the screen. The **Summary** view shows the total number of matched and unmatched items currently retrieved.

---

**Note:** In some of these views, you can quickly look up the transaction to which the item is attached, by right-clicking the item and selecting **Transaction Lookup**.

---

The following views are available from the **View** menu in Settlement Reconciliation:

View	Description
General Query	Displays the <b>General Query</b> view. Use this view to retrieve statements of account and settlements that you want to reconcile (unmatched) and those that are already reconciled (matched). The results are displayed in the corresponding matched and unmatched views.
Matched Query	Displays the <b>Matched Query</b> view. Use this view to retrieve matched statements of account and settlements. The results are displayed in the <b>Matched</b> view.
Unmatched (Settlement) Query	Displays the <b>Unmatched Settlement Query</b> view. Use this view to retrieve unmatched settlements. The result of the query is displayed in the <b>Unmatched Settlement</b> view.
Unmatched (Settlement)	Displays the <b>Unmatched Settlement</b> view. Shows all unmatched settlements that match the query criteria.
Unmatched (Statement of Account) Query	Displays the <b>Unmatched Statement of Account Query</b> view. Use this view to retrieve unmatched statements of account. The result of the query is displayed in the <b>Unmatched Statement of Account</b> view.

View	Description
Unmatched (Statement of Account)	Displays the <b>Unmatched Statement of Account</b> view. Shows all unmatched statements of account that match the query criteria.

### 18.5.3 Defining reconciliation setup

Automatic reconciliation allows TRM to match settlements in TRM with the payments in Statement of Account for a specified account according to criteria that you set up in the Reconciliation Setup Editor. You can also define how any differences will be handled by specifying difference actions. For example, how to handle the reconciliation when accounts or amounts are different.

To define reconciliation criteria:

1. In Reconciliation Setup Editor, enter the following information:

– Account information:

Menu item	Description
ID and Name	Account ID and Name
Type	Reconciliation type (Cash or Security). The available matching criteria depends on which type you select. When you select Cash, the criteria relating to Securities (custodies) are no longer available, such as Custodian, Instrument/Security Identifier, and so on. Likewise, when you select Security, the criteria relating to Cash are no longer available, such as Amount.
Owner	(Mandatory.) Account owner.
Bank	Bank where account is held.
Currency	Account currency.
Sign	Select Any, Positive or Negative.
Account	Select the account.
Switches	<b>Allow Grouping:</b> if switched On, payments with the same criteria will be grouped together where possible

– Cash or security matching criteria and difference actions:

Matching Criteria	Description	Difference Actions
Currency	Cash accounts only. Match by currency.	None.
Counterparty	Cash accounts only. Match by counterparty.	None.
Account	Match by account.	Cash accounts only: <ul style="list-style-type: none"> <li>Account Difference Action: <b>Create Transfer</b> - Creates an internal cash transfer to correct TRM balances.</li> <li>Account Difference Instrument: Select an instrument for an internal cash transfer transaction which corrects TRM balances and accounts.</li> <li>Account Difference Portfolio: Select an portfolio for an internal cash transfer transaction which corrects TRM balances and accounts.</li> </ul>
Date	Match by payment date.	None.

Matching Criteria	Description	Difference Actions
Custodian	Security accounts only.	None.
Instrument/Security Identifier	Security accounts only. Match by instrument ID or Security Identifier Type <ul style="list-style-type: none"> <li>• To match by Instrument ID, leave the Security Identifier Type blank.</li> <li>• To match by Security Identifier Type, select a type from the drop-down list.</li> </ul> Note: Security Identifier Types are defined in the Security Identifier Type Editor, see <i>3.44 Security identifier types (optional)</i> on page 154.	None.
Amount	Cash accounts only. <ul style="list-style-type: none"> <li>• If payment amount &gt; 0, the payment credit account is used.</li> <li>• If payment amount &lt; 0, the payment debit account is used.</li> </ul>	<ul style="list-style-type: none"> <li>• Amount Difference Action: <b>Create Offsetting Cash Transaction</b> - If this is within the specified Tolerance, it creates an offsetting cash transaction to correct the TRM balance.</li> <li>• Amount Difference Instrument: Select an instrument for the Amount Difference Action</li> <li>• Amount Difference Portfolio: Select an portfolio for the Amount Difference Action.</li> <li>• Auto Matching Amount Tolerance:               <ul style="list-style-type: none"> <li>- If difference is under tolerance: Auto Match and generate a difference.</li> <li>- If difference is above tolerance: No Auto Match, only manual matching is possible and generate a difference.</li> </ul> </li> <li>• Auto Matching Amount Currency: Before any difference versus tolerance comparisons are made, the Amount Difference will be converted to the Auto-Matching Amount Currency using the FX rate between the Amount Difference currency and the Auto-Matching Amount Currency found in the scenario defined in the Auto-Matching Scenario (NULL = Default scenario). If the Auto-Matching Amount Currency is not given, then Auto-Matching Amount Tolerance is assumed to be in the currency being reconciled, i.e. no FX conversion is necessary.</li> <li>• Auto Matching Scenario: Select a scenario for the Auto Matching Amount Currency.</li> </ul>

Matching Criteria	Description	Difference Actions
Balance Amount Sellable Amount	Security accounts only. Match by balance amount or sellable amount.	None.
Reference Column	Cash accounts only. Select a column to be used as a comment in the settlement.	None.

2. Save the reconciliation criteria by using **File - Save As New**.

## 18.5.4 Entering statements of account

Before you can reconcile statements of accounts from the banks with settlements in TRM, you must enter the statements of account information in TRM. You can enter statements of accounts information in two ways:

- Imported from a file, by selecting **Command - Import Statements of Account**. See *18.5.4.1 Importing statements of account information* on page 528.
- Manually entered in the **Unmatched Statement of Account** view, by selecting **Command - New Statement of Account**. See *18.5.4.2 Entering statements of account information manually* on page 528.

### 18.5.4.1 Importing statements of account information

Before importing the statements of account, you must first know which import command should be used and the file name where the account information is stored. This file should contain the minimum information that you must enter into TRM to be able to reconcile: Account, Date, Instrument ID, and either Units for equities or Amounts for money market instruments.

To import statements of account information from a file:

1. In the **Unmatched Statement of Account** view, right-click any of the column headers and select **Select Columns** to select the columns you want to display.
2. Select **Command - Import Statements of Account**.
3. In the **Import Statements** dialog, enter the following information:
  - The **Import Command (Import Type)** is the script command (for example, PERL script) used to import the file.
  - The **File Name** is the name of the file to be imported.
4. Click **OK**.

### 18.5.4.2 Entering statements of account information manually

To enter statements of account information manually:

1. In the **Unmatched Statement of Account** view, right-click any of the column headers and select **Select Columns** to select the columns you want to display.
2. Select **Command - New Statement of Account**.
3. In the **Unmatched Statement of Account** view, enter the statement information in the new row that appears.
4. Select **Command - Apply Statement** to save the statement of account.

An ID is assigned to the statement and the **Matched** column shows, **false** (i.e. not reconciled)

---

**Note:** To cancel the entry of a new statement, right-click the row and select **Cancel**. The statement is completely removed from the application.

---



### 18.5.4.3 Modifying statements of account information

To modify unmatched statements of account information:

1. In **Unmatched Statement of Account** view, make changes to the unmatched item.
2. Right-click the item you have just changed and select the **Apply** action.

---

**Note:** To cancel the changes, right-click the changed item and select **Reset**.

---

### 18.5.5 Querying statements of account and settlement information

Before you can reconcile settlements with their corresponding entries in the statement of account, you must first retrieve the settlement information and the statement information. You can use the **General Query** view to retrieve both settlements and statements or you can use the specific query views to retrieve each separately. Retrieved items are displayed in the relevant unmatched or matched views, for example, retrieved unmatched statements of account are visible in the **Unmatched Statements of Accounts** view.

To retrieve unmatched and/or matched settlement and statements of account information:

1. In the selected query view, enter the query criteria as indicated in the following table:.

Parameter	Description
Date From	The first date of the period for which payment and statement information is to be retrieved. By default, the current date is selected.
Date To	The last date of the period for which payment and statement information is to be retrieved. By default, the current date is selected.
Client	The portfolio owner for which the information is to be retrieved.
Bank	The bank for which the information is to be retrieved.
Account	The account for which the information is to be retrieved.

2. Execute the query by pressing **Ctrl+E**

The retrieved items are displayed in the corresponding view according to whether they are matched and unmatched.

---

**Note:** You can see the total number of retrieved unmatched and matched items in the **Summary** view.

---

### 18.5.6 Matching settlements

To increase the speed of the reconciliation process, you can set up reconciliation criteria to handle differences in an automatic way in the Reconciliation Setup Editor (*18.5.3 Defining reconciliation setup* on page 526). Reconciliation criteria is used for both automatic and manual reconciliations. In the case of a manual reconciliation, if you have not set up reconciliation criteria for a bank or owner, you are prompted to specify it to complete the reconciliation.

After the reconciliation, you can do further actions to correct any differences or mismatches manually. In some cases, you might not be able to match statements to transactions in TRM or vice versa, in which case, you need to ignore these items. For more information about these actions, see *18.5.7 Processing actions* on page 531.

Concretely, there are two ways of reconciling settlements in TRM with the payments from the Statements of Account:

- Automatically - TRM automatically matches the settlements according to the reconciliation criteria. Automatic matching can be done in two ways:
  - Using the instructions described in *18.5.6.1 Automatic matching* on page 530.

- Using an activity. You can run **Cash Settlement Reconciliation** and **Security Settlement Reconciliation** activities in Activity Manager. These activities retrieve all unmatched statements between the Period Start and Period End Dates. The Owner field is mandatory. Additionally, for securities, you need to specify the instrument as well.

See *A.9 Cash Settlement Reconciliation* on page 630 and *A.66 Security Settlement Reconciliation* on page 655 for more information on the activity parameters.

- Manually - you manually match payments in TRM with payments in the Statements of Account as described in *18.5.6.2 Manual matching* on page 530.

### 18.5.6.1 Automatic matching

Automatic reconciliation can be set up using Reconciliation Setup Editor as described in *18.5.3 Defining reconciliation setup* on page 526. With automatic matching, TRM matches all of the settlements and statements of account currently retrieved in the unmatched views according to the criteria defined in the editor. At the end of the process, you can check the **Log** column in the **Matched** view for more details on the reconciliation or you can generate the Reconciliation report, see *18.5.8 Reconciliation reports* on page 532.

To match settlements automatically:

1. In the Reconciliation application, Select **Command - Auto Match**.

The retrieved items are displayed in the **Matched** view. Check the **Log** column for details of the reconciliation processing.

2. In the **Matched** view, you can perform additional actions on the matched items by right-clicking the row or rows and selecting the available actions. See *18.5.7 Processing actions* on page 531.

---

**Note:** To undo one or more matchings, right-click the matching row (or rows) and click **Unmatch**.

---

### 18.5.6.2 Manual matching

When you do a manual matching, the system automatically uses the reconciliation setup defined for the owner/bank. If no setup is found for the given owner or bank, you are prompted to define the reconciliation criteria. Manual matching can be done even if the settlements' attributes differ: in this case, TRM displays a warning. Depending on whether a difference action was defined in the reconciliation criteria, mismatches are processed in a different way. For example, if there is a mismatch warning, the following scenarios are possible:

- If a difference action was defined, the difference action is processed. Information about the applied difference is available in the **Log** column.
- If no difference action is defined, a warning message is displayed, and the related column is left empty in the Matched view. For example, for an account mismatch, the Account column is empty.

Differences can be processed manually in the **Matched** view, see *18.5.7.1 Processing differences* on page 531. You can view the applied differences in the **Log** column or in the Reconciliation Report, see *18.5.8 Reconciliation reports* on page 532.

In some cases, you may not find matching Settlement or statement of account items. In which case, you can flag the settlement or statement of account items as **Ignored**. The ignored items are moved to the **Matched** view and removed from the unmatched views.

To manually match items:

1. Select one or more settlement rows and one or more statement of account rows in the unmatched views respectively.

2. Select **Command - Match**.

The **Match** dialog appears.

3. Verify the proposed reconciliation setup, or if no setup is defined, specify the reconciliation criteria, and click **OK**.

Successfully matched items are displayed in the **Matched** view.

---

**Note:** To undo one or more matchings, right-click the matching row (or rows) and click **Unmatch**.

---

4. In the **Matched** view, you can do additional actions on the matched items by right-clicking the row or rows. See *18.5.7 Processing actions* on page 531.

## 18.5.7 Processing actions

There are two kinds of actions: processing unmatched items and processing differences.

### 18.5.7.1 Processing differences

You can see difference information in **Matched** view columns. For example, when an amount difference occurs, you will see an amount in the **Amount Difference** column, you can choose to capture this amount in an offset cash transaction.

To process amount or account differences:

1. In the **Matched** view, right-click the matching row and click **Process Differences**.  
The **Process Differences** dialog appears.
2. Depending on whether you want to process an amount or account difference, choose one of the following options:
  - To process an amount difference: select the amount difference action (i.e. create an offsetting cash transaction) and the instrument and portfolio you want to use to capture amount differences.

---

**Note:** Amount differences are visible in the **Amount Difference** column.

---

- To process an account difference: select the account difference action (i.e. transfer to another account) and the instrument and portfolio you want to use to capture account differences.

---

**Note:** Account differences are visible in the **Account** column, for example, when this column is empty.

---

For more information about difference actions, see *18.5.3 Defining reconciliation setup* on page 526.

3. Click **OK** to perform the reconciliation.

The **Log** column updates with the new reconciliation setup.

### 18.5.7.2 Processing settlement and statement information

In the event that you do not have a statement to match a settlement in TRM, you can either choose to create an offset transaction, which will update the balances for the whole amount; or to ignore the statement, in which case, the statement is matched without affecting the TRM balances.

To reconcile when missing a match:

1. In the unmatched view, right-click the item and select the **Process** action.
2. In the **Process Statements** (or **Process Settlements**) dialog, select the amount difference action and the instrument and portfolio you want to use to capture amount differences.
3. Click **OK** to perform the reconciliation.

The item is moved to the **Matched** view. You can see the number of the offsetting transaction in the **Log** column.

### 18.5.8 Reconciliation reports

There are reports you can use to view bank statement and reconciliation information.

Report	Description
Bank Account Statement	This report displays the information that has been imported from the bank and intra-day statements. <i>See B.3 Bank Account Statement Report on page 660 for details of the report's parameters.</i>
Reconciliation	This report is used to display the results of the settlement reconciliation. <i>See B.41 Reconciliation Report on page 676 for details of the report's parameters.</i>
Reconciliation Log	This report provides a log of all the user actions performed in Reconciliation applications. <i>See B.42 Reconciliation Log Report on page 676 for details of the report's parameters.</i>

In TRM, it is possible to set up an accounting framework in order to meet the need to publish accounts for multiple accounting standards. Often, multinational corporations are required to report both globally and locally, and companies listed on different markets are obliged to release figures according to different accounting standards such as IAS or US-GAAP, while still conforming to the local standard. In TRM, this is known as parallel accounting.

It is also possible to set up off-balance sheet accounting in TRM. Off-balance sheet accounting is used to account for "notional" amounts generated by IR, EQ, and FX derivatives.

TRM can also be configured so that it can be used with a General Ledger system, such as the Wallstreet Suite Accounting Module (ACM). The General Ledger system can then convert the accounting events generated by the capture and processing of transactions in TRM into posted accounting entries (see *19.4 Using TRM with a General Ledger system* on page 542).

Furthermore, you can use TRM together with ACM to enable hedge accounting in the Wallstreet Suite (see *19.5 Hedge accounting in Wallstreet Suite* on page 546).

## 19.1 Parallel accounting

TRM provides a means of applying different accounting treatments without the need to duplicate transactions. One transaction can be treated in several ways simultaneously, allowing the transaction to be booked into multiple ledgers according to the valuation approach and result distribution applicable to each ledger.

Parallel accounting, that is, the process of applying different treatments to instruments or transactions can be based on classification. In this case, each transaction needs to be classified appropriately within each accounting standard; for example, Held-to-Maturity (HTM) for FAS, and Available for Sale (AFS) for IFRS. The actual result treatment then depends on the classification-specific *result treatment methods* defined for the instrument of the transaction. These contain details of how a deal should be treated, for example, whether FIFO or average price method should be applied, and whether or not discount should be accrued.

The parallel accounting framework can also be used to provide Front and Middle Office valuation and result figures that are different from any accounting figures. In this case, Front/Middle Office is set up as if it was an accounting standard, but no accounting posting will actually be generated.

This chapter explains how classification and result treatments are set up in TRM, the way in which result treatments are linked to instruments, how transactions are classified, and the processing involved to book the results in the appropriate way and to the correct location.

### 19.1.1 Classification

In TRM, transactions are classified once within each applicable classification group. A classification group is usually defined as one accounting standard, with the individual classifications set up within the group. For example, if two accounting standards need to be followed, it is necessary to set up two classification groups.

Typical classifications and classification groups could appear as follows:

Classification group	Classification
IFRS	HTM – Held to Maturity ORL – Originated Loans AFS – Available for Sale HFT – Held for Trading
FAS	HTM – Held to Maturity AFS – Available for Sale HFT – Held for Trading

It is possible to define an unlimited number of classifications within each group.

### 19.1.1.1 Setting up classification

As described above, the classification group effectively identifies the accounting standard. Each classification group needs to be attached to a specific result mode. The result mode drives the calculation of results, and effectively one single transaction can simultaneously be treated in as many ways as there are result modes. Often, this means that there is one result mode for each classification group. However, multiple classification groups can share one result mode. In this case, a transaction will only be classified into one classification group attached to the result mode.

Result mode is used as a start-up parameter in accounting activities and reports. This means that the position is always processed and viewed according to a specific result mode (that is, a specific accounting standard).

For example, if the user organization has subsidiaries in 20 countries, 20 different classification groups could be defined; to represent one group for each country. But since each subsidiary's transactions are posted only to the subsidiary's own local ledger, it is possible to link all the 20 classification groups to one result mode. This means that as far as local standards are concerned, there is no need for any parallel accounting.

Of course, many of the 20 subsidiaries may also have to report each transaction according to an international or other standard, for example, IFRS or FAS. These standards would be defined with their own unique classification group, which is linked to a unique result mode. With such a configuration, each of the 20 subsidiaries could report their transactions simultaneously in three different ways, that is, according to their local standard, IFRS, and FAS. Groups may be added or removed at implementation.

The system is preconfigured with the following result modes: Front/Middle Office (FO/MO), IFRS, FAS, and Local. FO/MO is defined as Not Bookable, as accounting will not be generated from that group. Similarly, all other modes, except FO/MO, are defined as Not Payable, as settlement of the transactions will only be done from the FO/MO group. In Transaction Manager, it is possible to change the display in order to view transactions according to each individual result mode.

A result mode consists of one or more result treatment methods. A result method can only be assigned to one result mode and a transaction cannot have more than one result method from the same result mode, but a transaction may have multiple result methods across result modes.

However, if a portfolio's setting conflicts with the result method of the transaction, then the portfolio's setting takes precedence.

For example, it is possible to define both a portfolio and a result treatment as **Not Payable** and/or **Not Bookable**. If a portfolio has either of these switches turned on but the result treatment of the transaction is not defined in the same way, then the portfolio setting overrides the result treatment setting. If these switches are not turned on in the portfolio definition, then the result treatment setting is used (see 3.14.1.1 *Setting further portfolio attributes* on page 108 for more information).

The portfolio definition defines the result treatment for the entire transaction. You use the result method to define for which classification or accounting standard the transaction should or should not be payable (or bookable).

The following example illustrates how classification groups could be mapped to result modes (and their corresponding result methods):

Classification group	Result mode	Result method
Front/Middle Office	FO/MO	Result Method 1
IFRS	IFRS	Result Method 2 Result Method 3
FAS	FAS	Result Method 4 Result Method 5 Result Method 6 Result Method 7
Local-Italy	LOCAL	Result Method 8
Local-Brazil	LOCAL	Result Method 9
Local-Spain	LOCAL	Result Method 10

To set up a classification group for each accounting standard, see *3.20 Classification groups* on page 130.

The classification groups that apply to the portfolio owner also need to be defined in Client Editor. So, if an Italian subsidiary needs to report results according to the Local, IFRS, and FAS standards, the applicable classification groups would be specified as Local-Italy, IFRS, and FAS; whereas a Spanish subsidiary would specify Local-Spain, IFRS, and FAS. This allows the system to recognize which classifications are applicable to each transaction.

See *3.13.1.10 Applying classification groups to a portfolio owner* on page 98 for more information.

## 19.1.2 Result treatment methods

A combination of result treatments can be defined for one result type. Result types are used as a way of grouping the different ways of calculating and treating results of an instrument's deals. These types are important since they drive the available result methods that can be applied for each instrument. It is not possible to create an instrument definition without a result type.

For example, the Bond result type is defined, and then four different ways in which results could be treated for the Bond result type according to the result mode can be set up as individual result treatments. For example, two result treatments for FAS, and two for IFRS, could be defined for the same Bond result type as follows:

Result	Setup
BOND-FAS-HFT	Bond FAS HFT - FIFO selling
BOND-FAS-HTM	Bond FAS HTM - FIFO selling - Yield based amortization
BOND-IFRS-HFT	Bond IFRS HFT - FIFO selling - Linear amortization
BOND-IFRS-HTM	Bond IFRS HFM - FIFO selling - Yield based amortization

Note that it is possible to specify which of these is used as the default result treatment for the result type. You can also override the default treatment at portfolio level: see *19.1.2.2 Overriding the default treatment* on page 536.

---

**Note:** For information about setting up result types and result treatment methods, see *3.15 Result types and results* on page 114 and *3.15.2 Results* on page 115.

---

### 19.1.2.1 Assigning result types to instruments

Once the result types have been defined, they are applied at instrument level in the **Result Type** field of Instrument Editor.

Note that the result type must not be changed once transactions have been created using the instrument as there may be an impact on result calculations.

Result types are used to define classification-specific result treatments to the same instrument: see *19.2 Realizing and processing results* on page 537.

For example, when setting up the bond instrument UST-5.0%-092010, you would attach the appropriate result type defined in the earlier example: Bond. Then, for each possible classification that the transactions in this instrument may eventually be classified as, you can pick the appropriate result treatment in Transaction Manager.

---

**Note:** The **Result** feature must be present in the instrument setup unless rule-based classification of transactions is used (in which case, the **Result-Classification** feature must be present instead: see *19.1.4 Classification of transactions* on page 537). See the guide *TRM Instruments: Processing and Calculations* for information about these features.

---

### 19.1.2.2 Overriding the default treatment

The default method used to calculate and treat results for an instrument can be overridden at portfolio level.

See *3.14.1.5 Defining result treatments for a portfolio* on page 112.

### 19.1.2.3 Aggregating results across portfolios

It is possible to aggregate transactions across portfolios for the purpose of result calculation. This is achieved by assigning a result portfolio for each trading portfolio. The results are then calculated as if all the transactions were in the result portfolio (this primarily impacts selling results when FIFO and average balance are used).

It is also possible to aggregate transactions with average method on the level of parent portfolio for different owners. The resulting balance transactions have one common owner who is the owner of the parent portfolio.

For the sake of transparent reporting of positions, the result portfolio should be a direct parent of the actual trading portfolios: see *3.14.2.2 Creating portfolio hierarchies* on page 113 for more information.

The result portfolios are defined per result mode, allowing, for example, a definition where FO/MO results are always calculated within the trading portfolio, while IFRS and FAS are calculated across all trading portfolios.

For information about how to apply the parameters for result aggregation to the top portfolio in the hierarchy, see *3.14.1.6 Aggregating result calculations across portfolios* on page 113 for more information.

### 19.1.2.4 Viewing results

In Transaction Manager, it is possible to view the results of transactions according to the defined result treatments. You can change the view by switching between result modes: see *8.2.1.5 Changing result mode* on page 267.

## 19.1.3 Classification rules

Transactions need to be classified at some point in the transaction flow, but before the transactions reach a state where they can be booked. Classification rules can be defined to provide default classifications for transactions. The defaulted classifications can be overwritten by users.



Classification rules use the standard TRM rule and not rule concept (see *Chapter 5 Managing rules* on page 221): if a transaction matches a rule (and does not match the not rule), then the transaction is assigned a specific classification automatically. Rule matching is done for each classification group. The first rule with the highest priority that matches the classification group is applied.

For example, a classification rule may be defined based on the portfolio where the transaction is entered. So, if a bond transaction is traded in a specific Trading portfolio, rules can be used to classify it as AFS in the IFRS classification group and as HFT in the Local classification group. Alternatively, if the same bond is traded on a specific Investment portfolio, rules can be used to classify it as HTM in both classification groups.

For information about setting up classification rules, see *3.21 Classification rules* on page 131.

### 19.1.4 Classification of transactions

Classification is done in Transaction Manager at any stage of the transaction flow. Using the earlier example, when a bond is traded in the Trading portfolio, it is possible to execute the classification process. Classification rules provide default classifications, and you may change or complete the classifications as appropriate. The classification can be done for each classification group that has been defined as applicable for the portfolio owner.

Classification of transactions according to the rules is performed when the **Result-Classification** feature is assigned in the instrument setup.

See the guide *TRM Instruments: Processing and Calculations* for more information.

#### 19.1.4.1 Performing manual classification of transactions

When classification is triggered manually (using the **Classification** right-click processing action in Transaction Manager), a dialog displays all the classification groups within which the selected transaction can be classified, and the rule-based default classifications within each group. You can change or complete the classification.

To be able to change the classification process for a transaction manually in Transaction Manager, the **Allow-Manual-Classification** feature needs to be assigned in the instrument setup.

See the guide *TRM Instruments: Processing and Calculations* for more information.

#### 19.1.4.2 Generating reports

The Classification report can be used to view the classification of transactions.

See *B.10 Classification Report* on page 663 for details of the report's parameters.

## 19.2 Realizing and processing results

The following section describes how results are realized and processed in TRM.

### 19.2.1 Realizing profit/loss

To see your true position in Treasury Monitor and in Periodic P/L reports, IR and FX profit or loss needs to be realized daily.

#### 19.2.1.1 IR profit/loss

IR profit/loss may result from an instrument reaching maturity and can also arise from the sale of an instrument.

If required, you can define whether you want to use a specific selling convention when an instrument is sold (such as, the FIFO principle), or whether you want to manually map sales against purchases (see *8.4.6 Matching and unmatching transactions* on page 288).

---

**Note:** The methods you wish to use to realize IR profit/loss or sell instruments are defined in the result treatment definition and applied to the instrument, using a result type: see *3.15 Result types and results* on page 114 and the guide *TRM Instruments: Processing and Calculations* for more information.

---

### 19.2.1.2 FX profit/loss

FX profit/loss occurs as a result of currency fluctuations. For example, if you buy foreign equities, you may make a profit if the equity's value increases, but your ultimate profit/loss is also affected by whether your currency on the settlement date is weaker or stronger than what it was when the deal was made:

- For money market and equity sell (closing) deals, TRM can calculate FX profit/loss either assuming that the FX profit/loss is realized on the value date of the deal only (value-date accounting), or assuming that it is realized on both the value date and the trade date (trade-date accounting).
- For FX deals, FX profit/loss is calculated from the currency fluctuations between the trade date and the value date of a deal.

TRM always calculates FX profit/loss whenever the currency of the portfolio is different from the currency of the transaction, unless the transaction is a payment transfer between two accounts within the same portfolio (counterparty is the same as the portfolio owner).

For some transactions, it is possible to manually fix the Base FX Rate and Base FX Book Rate: see *8.4.7.8 Setting base FX rates* on page 295.

---

**Note:** The method you wish to use to realize FX profit/loss is defined in the result treatment definition and applied to the instrument, using a result type: see *3.15 Result types and results* on page 114 and the guide *TRM Instruments: Processing and Calculations* for more information.

---

## 19.2.2 Processing results

End-of-day and end-of-period processing are executed separately for each result mode. This processing can be set up to occur automatically on a daily basis or on a specific date using activities.

The End-of-Day Processing activity realizes profit/loss, performs automatic selling according to the defined convention, creates accounting events, and can generate payment bookkeeping entries.

- To set up the activity see *A.24 End of Day Processing* on page 636 for details of the activity's parameters.

(See also *19.4 Using TRM with a General Ledger system* on page 542.)

Note that modifying a transaction, which has already gone through the accounting process (see *8.4.5 Correcting transactions* on page 287), may have an impact on the creation of accounting entries when it is processed again.

- If a transaction is reopened, modified, and recommitted to Final, the original accounting entries will be reversed and new correcting accounting entries will be created in their place if the changes impact accounting.
- If the changes made to the transaction do not impact accounting, no new accounting entries will be generated.

The End-of-Period Processing activity saves key-figures and creates accounting events.

- To set up the End-of-Period Processing activity, see *A.25 End of Period Processing* on page 637 for details of the activity's parameters.

---

**Note:** Activities are set up and managed in Activity Manager: see *Chapter 6 Managing activities* on page 227 for more information.

---

## 19.3 Updating the book value of deals

In addition to automatically processing results, you can set up TRM to automatically update the book value of deals in a portfolio, for example, following a decline or increase in the instrument's market value.

Updating the book value of assets is necessary under certain accounting standards, for example, it may be compulsory to account for impairment (downward change in book value) of an asset, whereas an upward change in book value may not be allowed.

In some countries, there are also specific legal requirements relating to the book value of certain IR instruments and equities when a financial organization closes the books. In Finland, for example, insurance companies have to realize the loss between the original book value and the current market value.

Furthermore, there are specific rules when this type of realization must, or can, be done. One example of these rules is that the Balance Sheet value can never exceed the original book value.

### 19.3.1 Defining the book value change method

The values used to update the book value of an instrument are defined in the result treatment definition and applied to the instrument using a result type.

The **Change Method** determines which profit figures (MtoM Profit and FX Profit) are taken into account. For example:

- Write Down methods take each profit figure into account individually before changing the book value of the instrument.

For example, if MtoM Profit is positive but FX Profit is negative, only the FX Profit is realized and nothing is done for the MtoM Profit figure.

- HGB method takes the sum of the figures into account, before an upward or downward change in book value takes place.

For example, if MtoM Profit is positive, but FX Profit is negative and in excess of the MtoM Profit figure, then the system will write down and book the figures separately.

- Manual method allows you to force a change in book value of an individual transaction in Transaction Manager.

Note that a change in book value only occurs for instruments that have a change method selected. If **Change Method** = *Never*, then no change in book value takes place.

---

**Note:** See *19.1.2 Result treatment methods* on page 535, and the guide *TRM Instruments: Processing and Calculations* for more information.

---

### 19.3.2 Making book value changes

Updating the book value of an instrument or transaction fetches the rates from Rate Monitor, based on the scenario defined in the parameters, and calculates the change in book value amounts (MtoM Profit and FX Profit figures).

The change in book value equals the sum of MtoM Profit and Accrued Profit (and FX Profit, if taken into account).

Changing the book value results in the creation of two new cashflows (for each type of profit figure) in the transaction. The first cashflow books (realizes) the change, and the second cashflow increases or decreases the book value for valuation purposes.

When book value is adjusted, the difference between Market Value adjusted to spot and Accrued Book Value is equal to MtoM Profit plus FX Profit (not allowing for discounting).

You can set up TRM to automatically update the book value of deals in a portfolio using the Book Value Change activity. You can also force a change in book value manually on an individual transaction. It is possible to undo the most recent book value adjustment made on a transaction.

### 19.3.2.1 Changing the book value automatically

- To set up the activity, see *A.5 Book Value Change* on page 628 for details of the activity's parameters.

Note that if you run the Closing the Books Valuation activity (see *19.4.4 Calculating bookkeeping entries* on page 546) after running the Book Value Change activity, due to the adjusted book value of a transaction, the MtoM Profit on the date of the Book Value Change will be equal to Accrued Profit (expressed as a negative figure).

---

**Note:** Activities are set up and managed in Activity Manager: see *Chapter 6 Managing activities* on page 227 for more information.

---

### 19.3.2.2 Changing the book value manually

If an instrument's book value **Change Method** = `Manual`, it is possible to force a Book Value Change on an individual transaction at transaction level using a right-click processing action.

To force a book value change:

- In Transaction Manager, select the transaction for which you want to update the book value.
- Right-click the transaction and select **Book Value Change**.
- In the **Book Value Change** dialog, if necessary, modify the following parameters:

Information	Description
Date	Date of the book value change. By default, this is today's date.
Scenario	Scenario you want to use for the calculations. This should be the same rate scenario that is used for calculating results: see <i>19.4.2.1 Defining rate scenarios for result calculations</i> on page 543.
Valuation Mode	Valuation mode you want to use: Default, Benchmark, or Theoretical. This should be the same valuation mode that is used for closing the books: see <i>19.4.4 Calculating bookkeeping entries</i> on page 546.

- Click **Next**.
- In the resulting dialog, select the **Change Method** you want to use.  
The remaining fields are computed automatically according to the specified parameters.
- Click **Finish**.

### 19.3.3 Making book value adjustments

The **Book Value Adjustment** right-click action is available on transactions made using instruments that have the **Allow Adjustment** switch activated in the Book Value settings of their result treatment definition: see *3.15.3.6 Defining book value methods* on page 121.

This action allows you to adjust the book value by adding additional amounts to the transaction and can be used, for example, to capture additional fees during the life of a bond, that are charged after its issuance date.

To adjust the book value of a transaction:

1. In Transaction Manager, select the transaction to which you want to modify.
2. Right-click the transaction and select **Book Value Adjustment**.
3. In the **Book Value Adjustment** dialog, if necessary, modify the following parameters:

Information	Description
Date	Date of the book value adjustment. By default, this is today's date.
Scenario	Scenario you want to use for the calculations. This should be the same rate scenario that is used for calculating results: see <i>19.4.2.1 Defining rate scenarios for result calculations</i> on page 543.
Valuation Mode	Valuation mode you want to use: Default, Benchmark, or Theoretical. This should be the same valuation mode that is used for closing the books: see <i>19.4.4 Calculating bookkeeping entries</i> on page 546.

4. Click **Next**.
5. In the resulting dialog, enter the amount of the adjustment.  
The remaining fields are computed automatically according to the specified parameters.
6. Use the **Treat as Cost** switch, as follows:
  - Switch on **Treat as Cost** if the adjustment is expected to target costs.  
If the switch is on, the adjustment creates a Book Value cashflow of type Cost Adjustment.
  - Switch off **Treat as Cost** if the adjustment is expected to target fair value change.  
If the switch is off, the adjustment creates a Book Value cashflow of type BVC Adjustment.
7. Click **Finish**.

### 19.3.4 Undoing book value changes and adjustments

You can undo the most recent book value changes and adjustments made on a transaction either manually on an individual transaction or automatically by using the **Undo Book Value Change** activity.

---

**Note:** If a transaction contains book value changes as well as adjustments for a certain date, you cannot undo them separately; only all of them together.

---



---

**Important:** Each time you perform the undo action, you need to re-run any daily and closing-the-books accounting that have taken place between the book value change and its reversal.

---

#### 19.3.4.1 Undoing book value changes manually

To manually undo (remove) the last book value changes and adjustments:

1. In Transaction Manager, select the transaction for which you want to undo any changes/adjustments.

2. Right-click the book value change/adjustment cashflow for the last book value change date and select **Undo Book Value Change**.

---

**Note:** Any earlier book value changes cannot be undone until the last book value change has been reversed.

---

### 19.3.4.2 Undoing book value changes automatically

To automatically undo (remove) the book value changes and adjustments, use the **Undo Book Value Change** activity. See *A.68 Undo Book Value Change* on page 656.

### 19.3.5 Generating a book value change report

You can generate a report to view the book value change history for an instrument or transaction during a specific period.

The report displays details of the two cashflows generated by a change in book value, as well as the yield associated with the book value change.

See *B.4 Book Value Change History Report* on page 660 for details of the report's parameters.

### 19.3.6 Posting book value changes

The following are key rules for accounting of book value changes:

- You must not run the selling process on the BVC date after the BVC processing.
- You should run CTB and/or daily delta events generation activities just after making the book value changes (since results in accounting should reflect changed figures affected by book value changes and adjustments).
- If you need to enter a backdated deal before the already processed BVC date, you must first run the **Undo Book Value Change** activity for the portfolio on which you want to capture the deal. Then you can enter the deal and repeat all accounting activities.
- Each time you perform the undo action, you need to re-run any daily and closing-the-books accounting that have taken place between the book value change and its reversal

The following steps describe a possible accounting processing for the BVC date, typically done at year-end:

1. **TRM Daily Events Generation** activity including the selling process (**Process Selling** activity starting field is empty or is set to **Yes**)
2. Book value change and/or adjustment (manually or via the activity)
3. **TRM Daily Events Generation** activity without the selling process (Process Selling = **No**)
4. Accounting Processing
5. CTB/Daily Delta accounting
6. Accounting Processing
7. Other ACM closing activities, e.g. Time to Maturity, Account Balance Revaluation, Accounting End of Year, Period Closing, and so on.

## 19.4 Using TRM with a General Ledger system

It is possible to set up TRM so that it can be used with a General Ledger system, such as Wallstreet Suite Accounting Module (ACM).

The General Ledger system can then convert the accounting events generated by the capture and processing of transactions in TRM into posted accounting entries.

Before TRM can be used with such a system, the following configuration is required:

1. Ensure that the portfolio owner for whom you want to configure accounting is defined.  
See *19.4.1 Setting up the portfolio owner for accounting* on page 543.
2. Configure the accounting setup (per result mode) for the portfolio owner:
  - Assign the rate scenarios you want to use to calculate realized and unrealized results for the portfolio owner (see *19.4.2.1 Defining rate scenarios for result calculations* on page 543).
  - Set up off-balance sheet (OBS) accounting treatment, if required (see *19.4.2.2 Configuring OBS accounting treatment* on page 544).
 See *19.4.2 Configuring accounting for the portfolio owner* on page 543.
3. Define the rules to establish which transactions TRM must include in the closing-the-books unrealized results calculation and define the expected unrealized results (key-figures).  
See *19.4.3 Defining bookkeeping entries* on page 545.
4. Calculate and save the results for the closing-the-books key-figures.  
See *19.4.4 Calculating bookkeeping entries* on page 546.

### 19.4.1 Setting up the portfolio owner for accounting

The first step in configuring TRM for use with a General Ledger system is to ensure that the portfolio owner for whom you want to configure accounting is defined.

A portfolio owner is defined in Client Editor (**Roles** = Portfolio Owner).

If you intend to perform parallel accounting, you also need to ensure that a classification group is assigned to the portfolio owner: see *3.13.1.10 Applying classification groups to a portfolio owner* on page 98.

### 19.4.2 Configuring accounting for the portfolio owner

You configure the accounting setup for the portfolio owner in Accounting Configuration Editor.

Note that this editor layout is based on the application Static Data Editor (see *3.2 Static Data Editor* on page 41 for more information).

#### 19.4.2.1 Defining rate scenarios for result calculations

For the portfolio owner, you need to assign the rate scenarios you want to use to calculate realized and unrealized results.

The rate scenario used to calculate realized results is the same for all result modes. However, the rate scenario used to calculate unrealized results can differ according to the result mode.

Scenarios are defined in Scenario Editor: see *Chapter 4 Managing market data* on page 161 for more information.

You assign the rate scenarios you want to use for the portfolio owner in Accounting Configuration Editor.

To define a rate scenario for the portfolio owner:

1. In Accounting Configuration Editor, select the main attributes in the upper part of the editor.

Information	Description
Owner	ID of the client that is defined as the portfolio owner.
Scenario Realized	Scenario used to calculate realized results for the portfolio owner. This scenario is also used to convert daily bookkeeping amounts into the booking currency.

2. In the **Result Mode Configuration** page, select and add the scenario you want to use to calculate unrealized results for each of the portfolio owner's result modes.

Information	Description
Result Mode	Result mode (accounting standard) for which you want to define the scenario.
Client Group	Client main group used for accounting. Groups of the counterparty and/or issuer can then be used in account mapping (for example, in ACM).
Scenario Unrealized	Scenario used to calculate unrealized results for the result mode.

3. Save the accounting configuration using **File - Save As New**.
4. Complete the accounting configuration for the portfolio owner, if you need to set up off-balance sheet accounting treatment, using the information in the following section.

### 19.4.2.2 Configuring OBS accounting treatment

In TRM, it is possible to handle off-balance sheet (OBS) accounting.

OBS accounting generates opening and closing entries to account for the "notional" amounts arising from IR, EQ, and FX derivatives.

In the system, an instrument is identified automatically as requiring OBS accounting treatment by its instrument class.

For example, FRA contracts are automatically classified as off-balance sheet instruments: they are not reflected on the balance sheet since the transaction will be carried out at some future date. The principal cashflows are marked as pseudo.

The way in which accounting entries for these transactions are treated for off-balance sheet accounting is configured for the portfolio owner per result mode.

Within the configuration, you need to use standard rules (defined in Rule Editor) to capture the transactions for which you want to generate OBS accounting entries, select the appropriate handler (for the instrument class) to book the entries, and determine on which date or dates they need to be booked.

---

**Note:** For information about defining rules, see *Chapter 5 Managing rules* on page 221.

---

To configure OBS accounting for the portfolio owner:

1. In Accounting Configuration Editor, select the portfolio owner from the **Owner** field in the upper part of the editor.
2. In the **Off-Balance Sheet** page, fill in the fields using the information in the following table:

Information	Description
Result Mode	Result mode (accounting standard) for which you want to define the OBS accounting treatment.
Rule Not Rule	Rule that captures the transactions for which you want to generate OBS accounting entries and, if necessary, the <b>Not Rule</b> that defines the transactions that you do not want to include (include all transactions matching <b>Rule</b> , except those matching <b>Not Rule</b> ). Rules are defined in Rule Editor: see <i>Chapter 5 Managing rules</i> on page 221.
Priority	Priority of this rule, in relation to other OBS accounting rules for this result mode/portfolio owner.



Information	Description
Handler	Type of handler used to generate the OBS accounting entries. For example, to generate the appropriate entries for a swap transaction, select OBS-SWAP.
Opening Date Signature Date Settlement Date Maturity/Expiry Date	Date or dates on which you want the OBS accounting entries to be booked for the transactions captured by the rule according to the selected result mode. Choose from: <ul style="list-style-type: none"> <li>• Opening Date</li> <li>• Signature Date</li> <li>• Settlement Date (if prior to Expiry Date)</li> <li>• Maturity/Expiry Date.</li> </ul>

3. Save the OBS accounting configuration using **File - Save**.

### 19.4.3 Defining bookkeeping entries

The next step involves the definition of rules to establish which transactions TRM must include in the closing-the-books unrealized results calculation. You also need to define the list of expected unrealized results (key-figures).

You define the bookkeeping entries in Accounting Closing Book Editor. Note that this editor layout is based on the application Static Data Editor (see 3.2 *Static Data Editor* on page 41 for more information).

To define the bookkeeping entries:

1. In Accounting Closing Book Editor, enter the main attributes for the rule.

Information	Description
Owner	ID of the client that has been defined as the portfolio owner to which this rule applies.
Priority	Priority of this rule, in relation to other closing-the-books rules for this owner.
Rule Not Rule	Rule that selects the transactions for which you want to generate closing-the-books entries and, if necessary, the <b>Not Rule</b> that defines the transactions that you do not want to include (include all transactions matching <b>Rule</b> , except those matching <b>Not Rule</b> ). Rules are defined in Rule Editor: see <i>Chapter 5 Managing rules</i> on page 221.
Key Figure	Key-figure for which you want to generate bookkeeping entries.
Currency	Currency of the items to be booked. For example, specify USD if you want a rule that only selects the book value figure of bonds that are denominated in USD.
Result Mode	Result mode (accounting standard) for which the closing the book rule applies. Note that each accounting standard may have different key-figures booked for the same transaction.
Classification	Classification for which the closing the book rule applies. If classification is specified, it is possible to generate different figures for different classifications under the same <b>Result Mode</b> .
Tag	Name that can be used for the grouping of key-figures (for example, in ACM). For example, you can use a tag to calculate and assign several key-figures together (such as FX and IR profit/loss) so reducing the number of entries.

Information	Description
Switches Not Switches	<p>When key-figures are saved for closing-the-books, they are flagged as <b>Pre-Settlement</b> if the transaction's valuation date is before the settlement date.</p> <ul style="list-style-type: none"> <li>• If Pre-Settlement is selected in the <b>Switches</b> field, then the pre-settlement key-figures are included in closing the books calculations.</li> <li>• If Pre-Settlement is selected in the <b>Not Switches</b> field, then the pre-settlement key-figures are excluded from closing the books calculations.</li> </ul>

2. Save the rule using **File - Save As New**.
3. Repeat the procedure for any other bookkeeping entries you want to define for the portfolio owner.

### 19.4.4 Calculating bookkeeping entries

In *19.4.3 Defining bookkeeping entries* on page 545, you selected the key-figures for which you want to generate bookkeeping entries.

You now need to set up the activity or activities to calculate and save the results for those key-figures, based on the rule/not rule and grouping that you defined for each key-figure.

- To set up the Closing the Books Valuation activity to save the key-figures, see *A.12 Closing the Books Valuation* on page 631 for details of the activity's parameters.
- If you want to book the key-figures, you then need to run the End of Day Processing activity: see *A.24 End of Day Processing* on page 636 for details of the activity's parameters, and *19.2.2 Processing results* on page 538.
- To calculate and book the key-figures in one step, you use the End of Period Processing activity: see *A.25 End of Period Processing* on page 637 for details of the activity's parameters.

---

**Note:** Activities are set up and managed in Activity Manager: see *Chapter 6 Managing activities* on page 227 for more information.

---

## 19.5 Hedge accounting in Wallstreet Suite

You can set up Wallstreet Suite for the Financial Accounting Standards Board (FASB) hedge accounting and reporting requirements needed to comply with FAS 133/138 US GAAP standard and IAS 139 (part of the International Financial Reporting Standards (IFRS), which applies to all EU listed companies).

Hedge accounting requires some configuration across Wallstreet Suite modules; that is, in both TRM and ACM. Together, these Wallstreet Suite modules provide a set of tools to aid compliance in hedge accounting core plain vanilla and base scenarios.

---

**Note:** Hedge accounting configuration across the Wallstreet Suite is described in the *ACM User Guide*.

---

Value-at-Risk is a measure of the largest likely loss for a portfolio or a position that can occur during a given period (for example, during one month or one year) and for a given confidence level (for example, 95% or 99%).

---

**Note:** Volatility and correlation data need to be imported from RiskMetrics™ or other similar data provider into TRM for the VaR calculation. This is set up by the system administrator: see the *TRM System Administration Guide*.

---

## 20.1 Setting up Value-at-Risk

This section explains how to set up TRM to use RiskMetrics™ Value-at-Risk data. The process is similar for other volatility and correlation data providers.

Setting up Value-at-Risk information in TRM consists of the following steps:

1. Map RiskMetrics™ market data to TRM market data. The information you need to map includes market variable mapping information.

See *20.1.1 Mapping RM volatilities and correlations to TRM market data* on page 547.

2. Define the time horizons for each VaR mapping.

See *20.1.2 Defining VaR scenarios* on page 549.

3. Assign a confidence level and risk horizon to each portfolio.

See *20.1.3 Assigning VaR properties to portfolios* on page 550.

The section *20.2 Managing VaR data* on page 550 describes how to view and modify VaR data in an application called VaR Data Board.

### 20.1.1 Mapping RM volatilities and correlations to TRM market data

You need to map the volatility and correlation data for certain market variables provided by RiskMetrics™ (or other data provider) to market variables recognized by TRM (currency rates, yield curves, and instrument quotes). This is because there is not a perfect match between the RiskMetrics™ market variables and the TRM market variables.

The mapping of RM volatilities and correlations to TRM market data is done using an application called VaR Mapping Editor. This editor layout is based on the application Static Data Editor (see *3.2 Static Data Editor* on page 41 for more information).

To map RM volatilities to TRM market data:

1. In VaR Mapping Editor, enter the main attributes for the mapping in the upper part of the editor.

Information	Description
Name	Name for the VaR mapping.
Gap Set	Gap set used for supplying the available periods.
Currency Postfix	Suffix of the external currency data, for example, ".XS".
Index Postfix	Suffix of the external index data, for example, ".I".
Equity Postfix	Suffix of the external equity data, for example, ".SE".

2. In the **Currency Mapping** page, map each TRM currency ID to the corresponding external VaR variable.

Information	Description
Currency	The TRM currency ID, for example, EUR.
External Tag	The corresponding external currency ID. The RiskMetrics™ standard for currency mapping is AAA.XS, where AAA is the currency code, for example, EUR.XS. Note that since FX quotes used by RM are denominated against the USD, you do not have to map the USD.

3. In the **Interest Rate Mapping** page, create the mappings between interest rate periods and the external VaR variables. You can create several different mappings for each currency/period combination.

Information	Description
Currency	The TRM currency ID, for example, EUR.
Type	Two standard VaR mapping types are provided at implementation: GOVT and SWAP. It is possible to add or modify these mapping types during the implementation of the system (see <i>TRM System Admin Guide</i> ). <ul style="list-style-type: none"> <li>• To use only one mapping per currency (default mapping), leave this field empty.</li> <li>• To use multiple mappings per currency, select a type (for example, GOVT) for the periods that belong to the new mapping. To use this mapping with an instrument, add the feature <i>VaR Mapping Type</i> to the instrument, and specify which mapping is to be used with that instrument. See <i>TRM Instruments: Processing and Calculations Guide</i> for more information.</li> </ul> <p>Note: If an instrument is not set up with <i>VaR Mapping Type</i> feature, the default mapping is used (i.e. one mapping per currency).</p>
Gap Set	Gap set used for supplying the available periods.
Period	One of the gap periods, from the above-specified gap set, that you want to specifically use, for example, T/N.
External Tag	The corresponding VaR variable, for example, EUR.TN. <ul style="list-style-type: none"> <li>• Money market rates are for the periods (vertices) 1, 3, 6, and 12 months. The symbols for these rates are of the form R030, R090, R180 and so on (for example, EUR.R030, EUR.R060).</li> <li>• Swap zero rates for different currencies are provided for the periods (vertices) 2, 3, 4, 5, 7, 9, and 10 years. The symbols for these rates are of the form S02, S03 and so on (for example, USD.S02, USD.S03).</li> <li>• Government Bonds zero rates are for the periods 2, 3, 4, 5, 7, 9, 10, 15, 20 and 30 years for a subset of the group of currencies previously defined.</li> </ul>

4. In the **Instrument Mapping** page, map each TRM instrument ID to the corresponding external instrument ID.

Information	Description
Instrument	The TRM instrument ID.
External Tag	<p>The corresponding VaR variable.</p> <p>If you have created your own data set including volatilities and correlations for the instrument's quotes, you can directly map each instrument you selected to the corresponding instrument in the data set.</p> <p>An equity may be handled in VaR calculations either directly or via an index depending on the information available to you:</p> <ul style="list-style-type: none"> <li>• If the volatility and correlation data are available for the equity in question, map the equity to the external tag corresponding to this data, for example, map the equity ATT (in TRM) to ATT.XS (in your data set).</li> <li>• If an index is available for the equity, assign the index to the equity using the <b>Price-Exposure-Setup</b> feature in Instrument Editor (see <i>TRM Instruments: Processing and Calculations Guide</i> for more information about this feature).</li> </ul> <p>If you choose mapping via an index, you need to map only the index to an external data tag, not individual equities. In this case you may also use either fixed (see next) or variable (given in Rate Monitor) beta with respect to the chosen index.</p>
Factor	<p>The beta of the equity (<b>Fixed Beta</b> column) is used to obtain the equity's volatility from the volatility of the index.</p> <ul style="list-style-type: none"> <li>• If you want to use a fixed beta, you can enter it in this field.</li> <li>• If you enter 0, the system uses the beta entered in Rate Monitor.</li> </ul>

5. Save the mapping using **File - Save As New**.

## 20.1.2 Defining VaR scenarios

You create VaR scenarios by defining the time horizons for each VaR mapping. The time horizon represents the number of days of the risk period.

VaR scenarios are defined in VaR Scenario Editor. This editor layout is based on the application Static Data Editor (see 3.2 *Static Data Editor* on page 41 for more information).

To define a VaR scenario:

1. In VaR Scenario Editor, enter the main attributes of the scenario in the upper part of the editor.

Information	Description
ID & Name	ID and name for the VaR scenario.
Mapping	ID of the VaR mapping that you defined in VaR Mapping Editor (see 20.1.1 <i>Mapping RM volatilities and correlations to TRM market data</i> on page 547).
Domain	Domain in which this VaR scenario is available.

2. In the **Horizons** page, define the time horizons for the scenario.

Information	Description
Name	Descriptive name for the time horizon, for example, 1 week.
Days	Length of the time horizon in days: for example, enter 7 if the horizon is 1 week (see previous).
Calculation Method	<p>Select the method used to retrieve the data from RiskMetrics or other similar data provider: Import, Interpolation, or Scaling.</p> <p>This field works with the <b>Source Horizon 1</b> and <b>Source Horizon 2</b> fields (see next).</p>

Information	Description
Source Horizon 1	The horizon or horizons from which the data is interpolated or scaled.
Source Horizon 2	
	This field works with the <b>Calculation Method</b> field (see previous):
	<ul style="list-style-type: none"> <li>• Import: an imported horizon does not use source horizons.</li> <li>• Interpolation: an interpolated horizon requires two horizons (one horizon must be shorter than the interpolated horizon, and the other horizon must be longer than the interpolated horizon).</li> <li>• Scaling: a scaled horizon requires one horizon.</li> </ul>

3. Add the definition to the scenario and repeat the procedure for each of the scenario's time horizons.
4. Save the scenario using **File - Save As New**.

### 20.1.3 Assigning VaR properties to portfolios

You define the confidence level and the risk horizon individually for each portfolio.

The risk horizon is the number of days of the risk period, and the confidence level is a percentage of certainty.

For example, if a portfolio is defined with a risk horizon of 30 and a confidence level of 95% and the Value-at-Risk is \$1m, this means that you assume that, for the next 30 days, there is a 5% risk of losing more than \$1m.

In Treasury Monitor, the Value-at-Risk figures are always calculated with the attributes of the portfolio that is entered in the Treasury Monitor **Position Parameters** dialog (see *12.1.4.1 Defining position parameters* on page 366), regardless of the corresponding attributes of the subportfolios. If nothing is defined, the VaR engine uses default values:

- Confidence level: 95%
- Time horizon: 1 day

To define the confidence level and the risk horizon:

1. In Portfolio Editor, select the portfolio to which you want to assign the VaR properties.
2. In Portfolio Editor's **Properties** page, define and add the properties and values you want using the information in the following table:

Property	Value
VAR-CONFIDENCE-LEVEL	Any number from 51 to 99. This value, used in Value-at-Risk calculations, defines the probability of not making a loss.
VAR-HORIZON-ID	Length (in whole days) of the risk horizon used in VaR calculations. The available risk horizon depends on how the system is set up.

3. Save the portfolio definition using **File - Save**.

## 20.2 Managing VaR data

Value-at-Risk is a measure of the largest likely loss for a portfolio or a position that can occur during a given period (for example, overnight or during one month) and for a given confidence level (for example, 95% or 99%).

This section displays how you can view the volatility and correlation data for FX rates, IR rates and equities. It also describes how you can change the correlation and volatility data for purposes such as stress-testing.

## 20.2.1 VaR Data Board

VaR data is managed in an application called VaR Data Board.

VaR Data Board is split into three parts:

- In the upper part of the board, you select the scenario, date and horizon you want to view.
- In the middle of the board, you specify the confidence level information.
- In the lower part of the board, you can view the volatilities and correlations that correspond to the scenario you have selected in a page. It is possible to add more pages and also to customize their appearance.

### 20.2.1.1 VaR Data Board menus

The following tables describe the menu items which are specific to VaR Data Board.

Other menu items which are common to all applications are described in *2.2.6 Using application menus* on page 34.

#### 20.2.1.1.1 File

Menu item	Description
Save Data	Saves any changes made to the data in the current scenario.

#### 20.2.1.1.2 Edit

Menu item	Description
Set Zero Set One Set Minus One	Allows you to set the selected rates to the same value. <ul style="list-style-type: none"> <li>• Set Zero resets all selected cells to zero (0)</li> <li>• Set One resets all selected cells to one (1)</li> <li>• Set Minus One resets all selected cells to minus one (-1).</li> </ul>
Multiply by Factor	Allows you to scale rates by a factor. See <i>20.2.1.6.1 Scaling rates</i> on page 553 for more information.
Add Factor	Allows you to add an offset to the rates.
Fetch	Retrieves the volatilities and correlations into VaR Data Board. See <i>20.2.1.3 Retrieving volatilities and correlations</i> on page 552.

#### 20.2.1.1.3 View

Menu item	Description
Select Columns Select Rows	Opens a multi-selection list so you can select the axis values for the following rates to be displayed: FX rates, IR reference rates, and Equities.
Swap Columns and Rows	Changes the display of the columns and rows: the columns become rows and the rows become columns.
Show Symmetric Matrix Show X/Y Matrix	Allows you to display the same rates on both axes. <ul style="list-style-type: none"> <li>• To select symmetrical axes, select <b>View - Show Symmetrical Axes</b>. Any rates displayed on the Y axis are replaced by the rates on the X axis.</li> <li>• To revert to a matrix with different values on the X and Y axes, select <b>View - Show X/Y Matrix</b>.</li> </ul>

Menu item	Description
Zoom In Zoom Out Zoom Default	Allows you to zoom into the display (to enlarge the figures), zoom out (to see more of the grid), or revert to the default setting.
Hide/Show Top Volatilities Hide/Show Left Volatilities	Allows you to change the values displayed on each axis. <ul style="list-style-type: none"> <li>To hide volatility rates, and only display the correlation rates, select <b>View - Hide Top Volatilities</b> or <b>View - Hide Left Volatilities</b>.</li> <li>To redisplay the volatility rates, select <b>View - Show Top Volatilities</b> or <b>View - Show Left Volatilities</b>.</li> </ul>
Show VaR Variable Name Show VaR Mapped Name	Allows you to change between variable names and mapped names. The names of the rates can be displayed using the RiskMetrics™ variable names, or the names to which they are mapped in TRM.
Show Correlations Show Covariances	Allows you to switch between covariance and correlation.

#### 20.2.1.1.4 Page

Menu item	Description
New Page	Inserts a new page into the lower part of the board.
Save Page	Saves the current page.
Save All Pages	Saves all pages in the display.
Delete Page	Deletes the current page.

#### 20.2.1.1.5 Select

Menu item	Description
Scenario Date Horizon	Opens a selection list so you can select the scenario, date, and horizon values. To activate these menu items, you must first click in the upper part of the board. See also <i>20.2.1.3 Retrieving volatilities and correlations</i> on page 552.

#### 20.2.1.2 Start-up parameters

It is possible to alter the start-up parameters so that VaR Data Board launches in a different mode. See *C.13 VaR Data Board* on page 687 for information about the options available.

#### 20.2.1.3 Retrieving volatilities and correlations

To retrieve volatilities and correlations:

1. In the upper part of VaR Data Board, specify the scenario, date, and horizon that you want to view.

Information	Description
Scenario	Scenario for which you want to change the VaR data. These are the scenarios you created in VaR Scenario Editor (see <i>20.1.2 Defining VaR scenarios</i> on page 549).
Date	The date of the analysis.



Information	Description
Horizon	Length of the horizon: these correspond to the time horizons you defined in VaR Scenario Editor (see <i>20.1.2 Defining VaR scenarios</i> on page 549).

2. Select **Edit - Fetch** to retrieve and display the scenario's volatilities and correlations into the lower part of the board.

#### 20.2.1.4 Changing the layout of VaR pages

From the **View** menu, you can change the layout of the page on which the VaR data is viewed. You can also change the way in which the rates are displayed or expressed on the page.

To activate the menu items which allow you to make these changes, you must first click in the lower part of the board.

#### 20.2.1.5 Viewing data for different confidence levels

You need to enter the level of confidence used for your value-at-risk analysis. This is done in the middle part of VaR Data Board.

The level of confidence can be expressed as a percentage, or as a multiple of the standard deviation. If you enter one value, the other value is calculated and displayed automatically.

Information	Description
Confidence Level	The level of confidence that you wish to use for your VaR analysis, expressed as a percentage.
Std. Deviation	The level of confidence that you wish to use for your VaR analysis, expressed as a multiple of the standard deviation.
Area Factor	The factor by which you want to scale the values or the amount by which you want the values to be offset (see <i>20.2.1.6 Changing the volatilities and correlations</i> on page 553).

#### 20.2.1.6 Changing the volatilities and correlations

From the **Edit** menu, there are certain operations you can perform for changing the values in the VaR Data Board pages. It is only possible to change values when the view is configured to show VaR variable names (not mapped names), and when the selected Horizon is not showing figures calculated based on other Horizon's figures (Interpolated or Scaled).

For example, it is possible to change all the rates that you select in a page to the same value (such as, **Edit - Set Zero** which resets all cells to zero).

You can also scale all selected rates by a factor, or add an offset to all selected rates.

##### 20.2.1.6.1 Scaling rates

To scale rates by a factor:

1. Select the cells whose values you want to change.
2. Enter the factor by which you want to scale the values in the **Area Factor** field in the middle part of the board.
3. Select **Edit - Multiply by Factor**.

##### 20.2.1.6.2 Adding offsets

To add an offset:

1. Select the cells whose values you want to change.
2. Enter the amount by which you want the values to be offset in the **Area Factor** field in the middle part of the board.

- 3.** Select **Edit - Add Factor**.
- 4.** Select **File - Save Data**.

In TRM, a message request is a record in the system which indicates that a message or a document must be created. It contains all the information to allow the system to create the correct type of message, in the correct message layout, and from the correct event (for example, a transaction).

The creation of the message request involves setting up message groups, message types, and message rules, and applying them to the appropriate contact.

The processing of a message request requires that the actual message is produced. The message may correspond to either a single-record message or a multi-record message. In both cases, the messages are produced using the preconfigured message layouts identified in the message request.

Messages can be managed in TRM in a similar way to transactions. At each stage in the processing of the message requests, they can be viewed, modified, and moved forward (or backwards) in the flow.

The last step in the process is the physical delivery of the message or document to the correct contact or contacts via the appropriate message medium (such as Fax, E-mail, or Telex) as identified in the message request.

---

**Note:** See the *TRM System Administration Guide* for more information about how to set up message management.

---

## 21.1 Setting up message requests

The following sections describe the procedure for setting up message requests.

### 21.1.1 Setting up message groups

A message group can be used as a grouping tool when setting up individual message types.

Also, the selection of the contact can be made dependent on the message group of the message being processed.

Message groups are defined in Message Group Editor. This editor layout is based on the application Static Data Editor (see 3.2 *Static Data Editor* on page 41 for more information).

To set up a message group:

1. In Message Group Editor, enter the main attributes of the group.

Information	Description
ID	Unique ID for this message group.
Description	Descriptive name for this message group.
Domain	Domain in which this message group is available.

2. Select **File - Save As New** to save the group.

## 21.1.2 Setting up message types

A message type defines a specific type of message. A message type may be made up of several message subtypes. Subtypes can define multiple sets of message instructions within one message type.

From a processing point of view, a message type may involve the creation of a single message, or it may involve the creation of multiple messages to be sent to multiple contacts.

For example, within one message request, it is possible to instruct TRM to send the main notification by SWIFT to the counterparty, a second one by E-mail to the portfolio-owner, and a third by fax to the bank.

Message types (and subtypes) are set up in Message Type Editor. This editor layout is based on the application Static Data Editor (see 3.2 *Static Data Editor* on page 41 for more information).

To set up a message type:

1. In Message Type Editor, enter the main attributes of the message type in the upper part of the editor.

Information	Description
ID & Name	Unique ID and descriptive name for the message type.
Group	Message group to which the message type belongs.
Message Object	Underlying object in TRM from which the message is generated, for example, Transaction, Payment, and so on.  This value determines the set of data components that can be used in the message, known as the message content. See 21.1.2.4 <i>Defining the message subtypes</i> on page 557 for more information.
Domain	Domain in which this message type is available.

2. Select **File - Save As New** to save the message type definition.
3. Complete the message type definition using the information in the following sections.

### 21.1.2.1 Defining the recipients of the message

To define one or more contacts to whom message requests generated from this message type can be sent:

1. In Message Type Editor's **Recipient Role** page, select and add the client roles you want from the **Role** field.

The available roles are filtered according to the value defined in the **Message Object** field in the upper part of the editor. For example, if **Message Object** = `Transaction`, the list will include roles such as `Counterparty` and `Bank`. TRM will take the appropriate Client ID from the corresponding field in Transaction Manager when the message is generated.

You may also add an `Ad Hoc` role. This allows you to identify a specific Client ID (that is not available with the message object) when you define the message rules: see 21.1.3 *Setting up message rules* on page 558.

2. Select **File - Save** to save the message type definition.

### 21.1.2.2 Defining the message medium

Message medium identify all possible media via which messages under the message type can be sent (for example, Fax and E-mail).

To define the method by which message requests generated from this message type can be sent:

1. In Message Type Editor's **Medium** page, select and add each medium you want to include.

Information	Description
Medium	Medium used for the physical delivery of the message, such as E-mail, Fax, Telex, or SWIFT. Message media are defined in Settlement Transfer Method Editor.
Switches	Switch on <b>Default</b> to identify the message medium as the default. The default medium is always used if the medium selected for the message request is not one of the eligible media in the message type.

2. Select **File - Save** to save the message type definition.

### 21.1.2.3 Defining the message language

Message languages identify all possible languages in which messages under the message type can be produced. This implies that separate layouts will have to be created for each language.

To define the languages in which messages generated from this message type can be sent:

1. In Message Type Editor's **Language** page, select and add each language you want to include.

Information	Description
Language	ID of the eligible language for the message type, for example, <i>en_US</i> for English (US).
Switches	Switch on <b>Default</b> to identify the language as the default. The default language is always used if the language selected for the message request is not one of the eligible languages in the message type.

2. Select **File - Save** to save the message type definition.

It is also possible to define a preferred language for a specific contact: see *3.13.1.2 Setting up client contact information* on page 92.

### 21.1.2.4 Defining the message subtypes

Message subtypes identify all possible instances of individual messages created under the same message type.

They define a version of the message type which should be used for a specific type of underlying event (for example, for a specific type of transaction). A message subtype links a message object to a set of data properties which represent the content of the message.

These properties correspond to the actual data fields or reports that you would expect to see in the message output. The list of available message properties for a particular message type/subtype combination is filtered according to the message object and the source of the data.

To define the message subtypes and the content to include in the message type:

1. In Message Type Editor's **Subtype** page, enter and add an ID and descriptive name for each subtype.
2. Select **File - Save** to save the message type definition.
3. In Message Type Editor's **Content** page, select and add the details of the properties used to generate the output for the message.

Information	Description
Subtype	ID of the message subtype for which the message content is set up.

Information	Description
Source	Source of the content, for example, Transaction.  This field works with the <b>Message Object</b> field in the upper part of the editor. Only the properties which relate to the defined message object are available for selection.  Once you have selected the main source of content, you can then select attributes of the source from the <b>Item</b> field: the list of available data in the <b>Item</b> field changes according to the source.
Item	Name of the individual source attribute that you want to use to generate the content in the message.  When you add a source, more items become available for selection. You can select as many of the items (and sub-items) associated with the <b>Message Object</b> or <b>Source</b> as necessary.
Property	(Information only) ID of the property name.

4. Select **File - Save** to save the message type definition.

### 21.1.3 Setting up message rules

Message rules are used to identify the message requests that need to be created from a specific underlying event (for example, a new transaction). Message rules also identify the detailed attributes of the message requests.

When message requests are processed for a specific event, a matching message rule must be found for the message processing to take place. If no matching message rule is found, then no message requests can be created or delivered.

Message rules are defined in Message Rule Editor. This editor layout is based on the application Static Data Editor (see 3.2 *Static Data Editor* on page 41 for more information).

To set up a message rule:

1. In Message Rule Editor, define the main attributes of the rule in the upper part of the editor.

The main attributes determine the data against which the underlying event is matched when identifying the message rule under which message requests for a specific message group can be processed.

Information	Description
ID & Name	Unique ID and name of the message rule.
Message Type	Type of message for which the message rule is set up.
Priority	Priority of the message rule. If the underlying event matches more than one rule, TRM uses the rule with the highest priority.
Entity Type	(Commercial Loans only) Type of entity (for example, Facility) if the message rule has been set up for a specific entity type.
Entity	(Commercial Loans only) ID of an entity if the message rule applies only to that individual entity.
Location	Location to which the message rule applies. Locations are set up in Country Editor.
Rule	Rule that the underlying event must match in order for the message rule to apply.
Not Rule	Rule that the underlying event must not match in order for the message rule to apply.

2. In the **Subtype** field, select the specific message subtype for which the message rule is set up.

Note that the available subtypes are dependent on the **Message Type** defined for the message rule in the upper part of the editor.

3. In Message Rule Editor's **Message Rule Instance** page, enter the values to identify which message instances must be included in the message request created from the source record.

Information	Description
Recipient Role	Role of the client for which this message instance applies.
Recipient	<p>ID of the client to whom a message must be sent (that is, the client ID entered in the <b>Recipient</b> field of the message request).</p> <p>This field becomes available when <i>Ad Hoc</i> has been specified as the role in the <b>Recipient Role</b> page: see <i>21.1.2.1 Defining the recipients of the message</i> on page 556.</p> <p>In most cases this field is not used as the Recipient is automatically identified by the system from the source record based on the <b>Recipient Client</b> value of the message instance (that is, Counterparty, Beneficiary, and so on).</p> <p>However, in facility-specific message rules for example, it may be necessary to send an additional copy of the message instance to a specific legal entity (such as, a parent company of the Counterparty) that is not named in the source record. In this case, the client ID of the legal entity can be entered here and the message rule set up as follows: "every time a notification is created in this facility, this client ID "CP-ABC" must also be notified".</p>
Medium	<p>Medium (for example, E-mail or Fax) used in the message request for this message instance.</p> <p>If a message medium is defined in this field, this medium is always used regardless of whether a <b>Preferred Medium</b> is defined for the recipient client contact.</p>
Language	<p>Language used in the message request for this message instance.</p> <p>If a language is defined in this field, this language is always used regardless of whether a <b>Preferred Language</b> is defined for the recipient client contact.</p>
Template	<p>Template to be used for the message instance for the specified medium.</p> <p>If no template is specified, the system uses the default template. Templates are set up at implementation.</p>
Switches	<ul style="list-style-type: none"> <li>Switch on <b>Primary Recipient</b> to identify the message instance as the primary (first) message of the message type. A primary message is always the first message in any message request generated for the message type.</li> <li>(Commercial Loans only) Switch on <b>Optional Message</b> to use in conjunction with the role <b>Facility / Tranche Adhoc</b> when there are no Adhoc Clients defined on the Facility, but you still want to process the Message Request for any other roles, such as Counterparty.</li> </ul>

4. Repeat this procedure until you have defined all message instances for the message rule.  
5. Save the message rule definition using **File - Save**.

### 21.1.4 Assigning message details to clients

Once the message requests have been defined, they need to be applied to the appropriate client contact.

Contact information for a client is set up in Client Editor's **Contacts** page. Here, you can define the types of message to be sent to each contact or message recipient, and the necessary information (such as the address, or fax number) to ensure that the physical delivery of the message actually takes place.

Any number of client contacts can be attached to a single client and the correct one to be used is selected based on various filter criteria (Rule, Message Object, Message Group, and so on), depending on the business context in which the contact is used.

In message processing, a Client Contact is always used to create a message request. The contact is selected by matching information in the source record (for example, a transaction) with the attributes of the message request being created against the contact entries.

See *3.13.1.2 Setting up client contact information* on page 92 for more information.

## 21.2 Message Manager

Message Manager is an application which is based on the Transaction Manager application layout.

In Message Manager, messages can be managed in a similar way to transactions using similar state and mode concepts as those in Transaction Manager's transaction flow.

Message Manager allows you to track a message's progress, and move it forwards or backwards in the flow.

### 21.2.1 Message Manager menus

The following tables describe the menu items which are specific to Message Manager.

Other menu items which are common to all applications are described in *2.2.6 Using application menus* on page 34.

#### 21.2.1.1 View

Menu item	Description
Message Request Query	Displays the Message Request Query view. This view is used to retrieve message requests that are already in the system for monitoring or further processing: see <i>21.3.1 Retrieving messages</i> on page 561.
Message Request	Displays the Message Request view. The results of the query are displayed in this view.
Message	Displays the Message view. This view displays all message instances generated from the selected message request.

### 21.2.2 Start-up parameters

Message Manager is a special Transaction Manager mode, designed specifically for processing messages in TRM.

The start-up parameter used to open Transaction Manager's Message Manager mode is:

```
FKTransactionManager.exe -c MM.xml
```

See *C.11 Transaction Manager* on page 685 for information about the options available.

### 21.2.3 Message modes

Different modes of Message Manager can be configured to display messages in a particular state in the flow.

At all points in the flow a message has a state (for example, To be validated, To be transmitted, or Transmitted). When a message moves forwards or backwards in the flow, its state changes based on the process flow defined for it.

In a typical TRM implementation, a different Message Manager mode may be configured for each stage in the flow to correspond to each of the message states used: it is possible to set up an unlimited number of verification stages.

For certain message types, the process flow may consist of only one relevant state (those that do not require validation).

Only the messages with the appropriate state are visible in the corresponding mode.

---

**Note:** The message process flow is set up at implementation: see the *TRM System Administration Guide*.

---



## 21.3 Processing messages

### 21.3.1 Retrieving messages

To allow you to process messages, you need to retrieve them into Message Manager.

Retrieving messages is done in the Message Request Query view of Message Manager. Message requests are retrieved from a blank query row. In this row you enter the criteria that you want the retrieved messages to match.

When the messages have been retrieved, you need to move to another of the views as you cannot process the messages in the Message Request Query view. You can only retrieve messages that have the relevant state that corresponds to the Message Manager mode.

### 21.3.2 Previewing messages

In the Message view, you can preview the message that will be transmitted.

- To see a preview, right-click the message and select **Preview**.  
TRM creates and displays an on-screen version of the final message. This preview is for display purposes only.

---

**Note:** The document templates and layouts used to generate the messages are defined at implementation: see the *TRM System Administration Guide*.

---

### 21.3.3 Verifying or modifying messages

When you have checked the message preview, you can approve, modify, or cancel the message as appropriate.

However, it is only possible to modify the message request in one of the **Remark** fields in the Message Request view. The **Save** action (in both the toolbar and the context menu) enables you to save the current message without moving it in the flow.

Note that if you modify or cancel a message request, this applies to the entire message request. You cannot modify or cancel an individual message if the message request contains more than one message.

Once the message has been approved (or rejected), it moves to the next state, which may correspond either to a state consistent with the transmission of the message or another intermediate state of the process flow.

- In Message Manager's **Command** menu, you can select from the commands: **Accept**, **Reject**, **Transmit**, and **In Error**.

The message request is moved to the next (or previous) state in the flow.

If any errors have been encountered in the processing or delivery of a message, these are described in the **Log Message** fields.

### 21.3.4 Retransmitting messages

In the Message view, you can retransmit a message that has already been transmitted.

- To retransmit a message, right-click the message and select **Resend**.  
Resending a message creates a duplicate record of the original message with the new date/time of the retransmission.

---

**Note:** Note that this action is only available when the message request has reached a state that is compatible with the successful transmission of all messages belonging to it.

---

### 21.3.5 Creating personalized warning messages

It is possible to configure the transaction flow to create a message request with personalized text, instead of a default system message, at a particular stage in the flow.

The message request can either be transmitted immediately without further intervention, or it can follow the normal approval process in Message Manager before it is sent to the recipients (see *21.3 Processing messages* on page 561).

For example, when a transaction is moved from the Final state to the Re-Open state (as described in *8.4.5 Correcting transactions* on page 287), a default warning message will be displayed if accounting entries are impacted. The default warning message can be replaced with a personalized message, such as an E-mail. The E-mail can then be sent to the concerned users (for example, in the Accounting department) to inform them of the changes made to the transaction and their impact on accounting.

---

**Note:** The transaction process flow, together with the creation of message requests triggered by a change in transaction state, are set up by the system administrator: see the *TRM System Administration Guide* for more information.

---

This chapter explains how to use RiskManager Interface (RMI) and CreditManager Interface (CMI) in TRM.

## 22.1 Managing RMI

RMI is used to export position information from TRM to RiskManager. RMI supports the XML-based RML position format to describe positions.

RiskManager is a RiskMetrics Group's application for measurement and analysis of market risks that implements the industry-standard methodologies including: Parametric VaR, Monte Carlo simulation, historical simulation, advanced stress testing (simple and predictive), and customizable reports.

All calculations within RiskManager are performed using RiskMetrics historical time series from DataMetrics.

RMI is defined at instrument level using the **RiskManager position template** trading feature. This feature allows you to assign RMI parameters to an instrument, as follows:

1. Select the appropriate RM template according to the instrument type.  
See *22.1.1 Assigning RMI mapping strategies to instruments* on page 564.
2. Specify whether a position should be aggregated at instrument level.  
See *22.1.2 Grouping by instrument* on page 564.
3. Define yield curve risk factor mappings for use with RMI.  
See *22.1.4 Defining yield curves for RMI* on page 564.
4. Define equity risk factor mappings for use with RMI.  
See *22.1.5 Defining equities for RMI* on page 568.
5. Define instrument-specific risk factor mappings for use with RMI.  
See *22.1.6 Defining instruments for RMI* on page 569.

Once you have assigned the mapping strategies, you also need to define the parameters required to export your TRM positions to RiskManager. See *22.1.7 Exporting and importing positions* on page 570.

---

**Note:** See the guide *TRM Instruments: Processing and Calculations* for more information about the **RiskManager position template** feature and about features in general.

---

### 22.1.1 Assigning RMI mapping strategies to instruments

Each TRM position, that is, a transaction or an aggregated position, can be exported using one of the following mapping strategies:

- One-to-one RM template

This is the most straightforward and secure strategy, and it should be used whenever an RiskManager template matches the TRM instrument or transaction.

- Risk-equivalent cashflow approach

This strategy can be considered the default export strategy and can be used for all TRM instruments. However, this approach generates a lot of risk information for optional instruments and should, therefore, be used only for "linear" instruments.

Using this approach, the cashflows of the TRM risk-equivalent position of this transaction are exported (and not the true cashflows of the transaction).

In TRM, the corresponding cashflow key-figures are called **Risk Value** for the cashflow amount and **Risk Date** for the cashflow date. These key-figures are available in Treasury Monitor and Transaction Manager.

- Risk-equivalent portfolio approach

This approach should only be used for optional instruments, either those not covered by RiskManager, or when neither of the first two strategies is possible or acceptable.

See *E.1 RMI mapping strategies* on page 699 for more information about the instruments covered by RMI and the mapping strategy that should be selected for each one.

---

**Note:** It is possible to exclude withholding tax cashflows from the cash section of the bond RM template: see the *TRM Installation Guide* for more information.

---

### 22.1.2 Grouping by instrument

By default, RMI exports individual transactions. This is the case for all openly-defined instruments such as Depo/Loan, Swaps, FX Forwards, and FRNs.

If you want to export a position aggregated at instrument level, this must be specified in the instrument definition (using the **Group by Instrument** switch).

Grouping by instrument is useful for exchange-traded instruments, such as Bond Futures (and Options), Interest Rate Futures (and Options), Equities, and Bonds. It makes position processing much more efficient in RMI and RiskManager.

### 22.1.3 No Pending Cashflows

If there is a cashflow to be settled on the day of exporting, RMI, by default, exports the balance output (e.g. the settlement cashflows). However, this default behavior can be overwritten by setting the switch **No Pending Cashflows** to on in the **RMI** tab of the Instrument Editor, see the *TRM Instruments: Processing and Calculations* guide for more information.

### 22.1.4 Defining yield curves for RMI

All IR asset types have a discount curve that is used for pricing purposes, and some of them, such as floating-rate instruments, also have a reference curve that is used to estimate unknown future coupons.

Most RiskManager asset types have four yield curve-related fields that need to be mapped consistently:

- discountCurve
- discountCurveSpread

- referenceCurve
- resetSpread.

Only the discountCurve and the referenceCurve fields must contain a yield curve name that matches one currently defined in the RiskManager Market Data database. The discountCurveSpread and resetSpread are "flat" or "actuarial" spreads that will be added to the discountCurve and referenceCurve, respectively. Therefore, the spread and the curve should be consistent with each other for both the discount and the reference parts.

For a given IR position, RMI populates the yield curve-related fields for the discount part and the reference part according to a particular priority and logic.

The reference and discount parts can be treated separately: RMI populates the discount and reference parts using different priority logic. However, within each part, the curve and spread should be consistent with each other and, therefore, will be populated using the same priority logic.

This logic is described in *E.1.2 Yield curve mapping logic* on page 702.

The following sections describe the steps you need to take to define yield curve mappings between TRM and RiskManager.

- The TRM-instrument based set-up (priority 1) should be used to override the best practice set-up for a specific instrument.  
See *22.1.4.1 Setting up TRM instrument-based mapping (priority 1)* on page 565.
- The recommended setup is to use TRM-based yield curve mapping (priority 2).  
See *22.1.4.2 Setting up TRM-based mapping (priority 2)* on page 566.
- If no yield curve related set-up has been found in TRM for a given position, then the default logic will then be applied apply (priority 3, then 4).  
See *22.1.4.3 Setting up the RM template-based mapping (priority 3)* on page 566.

The following sections describe how to set up yield curve mapping for priorities 1, 2, and 3.

### 22.1.4.1 Setting up TRM instrument-based mapping (priority 1)

The TRM-instrument based setup should be used to override the best practice setup for a specific instrument. This logic assumes that the curve (either discount or reference) is defined at instrument level.

To set up this type of yield curve mapping, the following parameters need to be specified at instrument level:

Information	Description
RM Discount Curve	Name of the RM yield curve used as the discount curve. You can also enter any yield curve name available in RM such as a corporate yield curve (for example, "US Corp All Industry Ba") provided that the instrument is sufficiently narrowly defined.
RM Reference Curve	Name of the RM yield curve used as the reference curve.
RM Spread Discount Curve	Name of the RM yield curve used for the spread. If you have specified a <b>RM Reference Curve</b> , you also need to specify the <b>RM Spread Discount Curve</b> . If this field is left blank, then Spread is used as the default value.

**Note:** If one of the valuation or forward curves is missing in Instrument Editor for the instrument under consideration, RMI will try to use the TRM instrument-based yield curve mapping logic (see *22.1.4.3 Setting up the RM template-based mapping (priority 3)* on page 566).

### 22.1.4.2 Setting up TRM-based mapping (priority 2)

The TRM-based yield curve mapping simply mimics the way TRM defines the yield curve used for discounting purposes, and the yield curve used for future coupon estimation (defined as the valuation curve in Instrument Editor). The valuation curve refers to yield curves defined in IR Quote and Yield Curve Editor, and assigned the `RM-INTEREST-RATE-ID` property in IR Quote and Yield Curve Editor.

If the curves can be used for discounting purposes, you should also assign the `RM-SPREAD-TO-INTEREST-RATE` property. The way RMI populates the `discountCurveSpread` field depends on the **Value** specified in IR Quote and Yield Curve Editor for this property:

Value	Result in <code>discountCurveSpread</code> field
Zero	No spread is added.
Spread	Spread found in Transaction Manager's <b>Spread</b> column or in Instrument Editor's <b>Spread</b> field is used.
Discount Margin	Value of Transaction Manager's <b>Discount Margin</b> key-figure is used.

---

**Note:** See 3.3.9.2 *Assigning properties* on page 49 for more information about properties and how to assign them to static data entities.

---

### 22.1.4.3 Setting up the RM template-based mapping (priority 3)

If the two steps above have failed due to an incorrect or missing setup, RMI will try to use the RM template-based yield curve mapping.

The logic that RMI uses to populate the `discountCurve` and `referenceCurve` fields depends on specific properties assigned in Client Editor (for the issuer of the bond or underlying bond) and in Country Editor (country of the issuer).

#### 22.1.4.3.1 Bond-related instruments

Bond-related instruments are bonds and bond-based derivative RM templates as defined in RiskManager (such as, `bond`, `bondFuture`, `bondOption`, and `bondFutureOption`).

To define the correct RM yield curve to discount the cashflows of these instruments, the following characteristics must be taken into account:

- Issuer type of the instrument
- Country of the issuer
- Currency of the transaction.

For the first two characteristics, you have to set up some properties in Client Editor and in Country Editor.

---

**Note:** See 3.3.9.2 *Assigning properties* on page 49 for more information about properties and how to assign them to static data entities.

---

The following table describes the algorithm that is used to define the yield curves:

Issuer	Country of issuer	Currency of transaction	RM yield curve	Example
Govt	Euro zone	EUR	<Currency of the Country Govt>	"ITL Govt" for an Italian bond
	Any	< >EUR = the currency of the country	<Currency of the transaction> Swap	"USD Swap" for a Spanish bond issued in USD
	Any	=EUR = the currency of the country	<Currency of the transaction> Govt	"GBP Govt" for a British bond
	Non-Euro zone	EUR	EUR Swap	"EUR Swap" for a Japanese bond
Non-Govt	Any	Any	<Currency of the transaction> Swap	"SEK Swap" for ABB

**Note:** In general, countries with a small economy, a weak currency, or a low credit rating tend to issue bonds in strong foreign currencies of countries with a large economy and a high credit rating.

As a result, from the point of view of a foreign investor, such bonds involve the "same" credit-spread risk as bonds issued by a non-government issuer (for example, a private company) from their own country which have also the "same" credit-spread risk as domestic swaps.

#### 22.1.4.3.2 Setting up the instrument's issuer type

The `RM-GOVT-ISSUER` property is used in RMI to distinguish between a Government and a non-Government issuer (default value). You only need to set up properties for a Government issuer. When the `RM-GOVT-ISSUER` property is not assigned to the issuer client entity, RMI considers that the issuer is not a Government one.

- To identify an issuer as a government issuer, assign the `RM-GOVT-ISSUER` property to the client entity in Client Editor's **Properties** page and select **Yes** in the **Value** field.

#### 22.1.4.3.3 Setting up the issuer's currency

You can define the currency of the issuer's country in Country Editor's **Properties** page. This is done by assigning the `RM-CURRENCY-ID` property to the issuer's country and specifying the issuer's currency in the **Value** field.

#### 22.1.4.3.4 Money Market instruments

For Money Market instruments, the RM yield curves are populated depending on the maturity of the instruments as explained in the following table:

Maturity	RM yield curve	Example
(Maturity Date - Due Date) < 1 Year	<Currency> Money Market	"USD Money Market" for a 3M Depo/Loan in USD
(Maturity Date - Due Date) > 1 Year	<Currency> Swap	"EUR Swap" for a 1.5Y Depo/Loan in Euro

#### 22.1.4.3.5 Swap-related instruments

Swap-related instruments include all other derivative IR instruments covered by RiskManager: Interest Rate Future, Option on Interest Rate Future, FRN, FRA, Cap/Floor/Collar, Swap, and Swaption.

For these instruments, both the discountCurve and the referenceCurve should be:

- `<Currency> "Swap"`  
where `<Currency>` is the currency of the instrument (or the currency of the specific leg for swaps).

## 22.1.5 Defining equities for RMI

RMI offers the possibility to map an equity to an external proxy, for example, DataMetrics used by RiskManager, or to internal data, that is, a TRM equity instrument. This section describes the proxy logic and the way to set up these proxies in TRM.

### 22.1.5.1 Using external market data

Typically, equity proxies are set up in TRM to map equity names to RiskManager equity names. The default treatment is to export equities using the TRM equity ID. However, this would lead to errors at import as RiskManager equity names are seldom used as a TRM equity ID. Therefore, the mapping proxy functionality of RMI should be used in the following ways:

- To map a TRM equity to its counterpart in RiskManager (same equity, different names): only the **RM Equity Name** field in Instrument Editor must be set to the RM equity name.
- To map a TRM equity to another equity in RiskManager (different equities, different names): the **RM Equity Name** field in Instrument Editor must be set to the RM equity name, and the beta factor between the TRM equity and RM proxy must be set (**RM Equity Beta** field in Instrument Editor).
- To map a TRM equity to a RiskManager stock index: a stock exchange must be set up in TRM in Client Editor, and the `RM-PROXY-ID` property in Client Editor must be set to the RM stock index name (see 3.3.9.2 *Assigning properties* on page 49) for more information about properties and how to assign them to static data entities).

The beta factor between the equity and the index is taken from the **RM Equity Beta** field in Instrument Editor or from Rate Monitor.

The proxy mapping logic used by RMI is summarized in *E.1.3 Equity mapping* on page 703.

### 22.1.5.2 Using internal market data

If you specify a value (an equity instrument) in the **Native Equity Proxy** field in Instrument Editor's **RMI** page to indicate that internal market data should be used, you also need to select a value in the **RM TRM Equity Beta** field.

### 22.1.5.3 Equity mapping for equity derivatives

The **RM Equity Name** and **RM Equity Beta** logic involves three main fields of the RiskManager Import file, namely: `equityName`, `beta`, and `equityPrice`.

The first two fields are populated using the equity mapping setup as explained in the previous sections.

The last field, `equityPrice`, refers to the underlying equity. For normal equity positions, the proxy logic can be applied to the equity instrument. However, for equity derivatives (equity futures and equity options), the mapping logic is applied to the underlying equity.

RMI fetches the underlying equity id from the **Underlying** field of the equity option instrument definition and then applies the proxy logic to that underlying equity.

---

**Note:** If the **Underlying** field is not defined, the mapping proxy is applied to the derivative instrument. This could lead to an incorrect statement of risk in RiskManager.

---



## 22.1.6 Defining instruments for RMI

Some RM templates contain a specific reference to the RiskManager database. These are: Inflation Index bonds, Mortgage-Backed Securities, and Overnight Index Swaps.

The TRM instruments based on these RM templates must have an instrument-specific mapping defined. This is a mandatory setup.

### 22.1.6.1 Index-linked bonds

Index-linked bonds are exported using the RiskManager inflationIndexedBond RM template. This RM template supports Capital Inflation Index Bonds, where both the capital and interest are linked to an inflation index. The specific entries required by the RM import specifications are described in the table below:

RM field	Mapping
realYieldCurve	Yield curve used for discounting future coupons as found in the Market Data database; typically an inflation-based yield curve (for example, "Swedish Inflation linked bond 3.5 due Dec 2015"). This information must be set at instrument level in TRM. The <b>RM Specific Mapping</b> field in Instrument Editor's <b>RMI</b> page should be used.
refIndex	Unique identifying name of an inflation index (for example, "FRCPI"). Use the <b>RM Index</b> field in Instrument Editor's <b>RMI</b> page to specify the index.
Lag	Reference index read lag time in months (the lag between the publication of the reference index and its valuation date). Use the <b>RM Index Lag</b> field in Instrument Editor's <b>RMI</b> page to specify the index.

### 22.1.6.2 Mortgage-backed securities

Mortgage-backed securities (MBS) are exported using the RiskManager mortgageBackedSecurity template. Indeed, when it is known that the ABS/MBS is in the RM Market Data database, the position is exported as RM MBS. Otherwise, you can always export the underlying risk-equivalent stream of cashflows. The specific entry required by the RM import specifications is described in the table below:

RM field	Mapping
mbsName	MBS name is bond specific, and therefore this information must be set at instrument level in TRM (assuming MBS are narrowly defined). The <b>RM Specific Mapping</b> field in Instrument Editor's <b>RMI</b> page should be used.

---

**Note:** RiskManager covers MBS issued by the US agencies (Fannie Mae, Ginnie Mae, and Freddie Mac) only.

---

### 22.1.6.3 Overnight index swaps

Overnight index swaps (OIS) should be exported with the RM template OvernightIndexSwap. The specific entries required by the RM import specifications are described in the table below:

RM field	Mapping
overnightIndex	Overnight index on which floating coupon payments are based. This must be a yield curve name that matches one currently defined in the RiskMetrics Market Data database. The <b>RM Specific Mapping</b> field in Instrument Editor's <b>RMI</b> page should be used.

---

**Note:** RiskManager covers standard overnight index swaps and the pricing method it uses is similar to that of TRM. In terms of risk, TRM estimates the risk of the floating leg like a

deposit (calculated from the known fixing up to today) with a term of 1 day for O/N OIS or 2 days for T/N OIS. The OIS RM template does not cover OIS based on the T/N rate.

If desired, you can approximate T/N OIS by exporting T/N OIS transactions with the normal OIS RM template. The risk generated by the floating leg will be smaller than it should be, and will be attributed to the O/N instead of the T/N period.

If this approximation is not satisfactory, then T/N OIS can be exported as Risk Cashflows. This will replicate the exact risk structure of the instrument, although the position will be less tractable in RiskManager.

---

## 22.1.7 Exporting and importing positions

This section explains how to export and import positions between RiskManager and TRM.

### 22.1.7.1 Exporting positions

You use the *Risk Manager Export* activity to export positions in the position file from TRM into RiskManager.

The extension of the position file is always "rml", which stands for risk markup language. RML is the RiskMetrics format used in RiskManager 3.x to describe a position (risk-based XML).

Once this file has been created, you can run RiskManager and import the data in the RiskManager database.

Before importing the position file within RiskManager, it is important to check for warnings and errors in the activity notification mail and make the necessary fixes within TRM (or directly in the position file).

- To set up the activity see *A.59 Risk Manager Export* on page 652 for details of the activity's parameters.

If you want to use TRM market data for some portfolios and RiskManager market data for others, you have to set up more than one activity. You will also need to define a portfolio hierarchy. You must split your portfolio tree into as many branches as you have activities (see *3.14.2.2 Creating portfolio hierarchies* on page 113).

---

**Note:** Activities are set up and managed in Activity Manager: see *Chapter 6 Managing activities* on page 227 for more information.

---

### 22.1.7.2 Importing position files into RiskManager

Refer to your RiskManager documentation to find out how to import your position from TRM into RiskManager.

## 22.2 Managing CMI

CMI is used to export obligors and exposures (transactions or positions) information from TRM to CreditManager.

CreditManager enables firms to measure and manage their credit risks using a Credit VaR framework (CreditMetrics). The CreditMetrics methodology was introduced in 1997 by J.P. Morgan to enable financial institutions to quantify credit risk of traditional credit products, fixed income instruments, and market-driven instruments, subject to counterparty default.

CMI is defined at instrument level using the **CreditManager position template** trading feature. This feature is used to define whether all transactions based on a specific instrument should be exported, as follows:

1. Select the appropriate CM template according to the instrument type.  
See *22.2.1 Assigning CMI mapping strategies to instruments* on page 571.
2. Set up the static data for use with CMI:
  - See *22.2.2 Defining obligors* on page 571.
  - See *22.2.3 Defining obligor credit ratings* on page 572.

Once you have assigned the mapping strategies, you also need to define the parameters required to export your TRM exposures and obligors to CreditManager: see *22.2.5 Exporting and importing exposures and obligors* on page 573.

---

**Note:** See the guide *TRM Instruments: Processing and Calculations* for more information about the **CreditManager position template** feature and about features in general.

---

### 22.2.1 Assigning CMI mapping strategies to instruments

You need to specify the appropriate CM mapping template in the instrument setup.

The instruments covered by CMI and the recommended CM template for each instrument are listed in *E.2 CMI mapping strategies* on page 704.

Once you have selected the appropriate template for the instrument, there are some additional parameters you also need to define. These are explained in the following sections.

### 22.2.2 Defining obligors

An obligor is an entity to which you have credit exposure, such as an issuer (for example, corporate bonds), a borrower (for example, participants in the interbank market), a customer on credit (for example, retail banking), or a counterparty (for example, an OTC derivative transaction).

From a credit risk perspective, the true obligor is the parent entity of the entity holding the exposure. In TRM, the purpose of the **Parent** field in Client Editor is to link all subsidiaries and branches to their parent companies. Therefore, the parent obligor is identified as the ultimate ancestor of the client family tree, based on the Parent.

The obligor, as defined in CreditManager, depends on the TRM instrument's definition as well as related transaction parameters (such as, transaction type, issuer, owner, or counterparty).

In Transaction Manager, the CM Obligor transaction parameter field will default to the parent-counterparty of the transaction in the following cases:

- Transaction where the underlying instrument is an off-balance instrument
- Transaction with transaction type equal to Option or Call or Put
- Transaction where the Issuer and Owner fields are the same.

In all other cases, the CM Obligor will default to the parent-issuer of the transaction. In these cases, you can overwrite the default value.

Obligors are defined in Client Editor by assigning properties and enhanced properties.

Property	Value
CM-OBLIGORS-WEIGHTS (Enhanced Properties page)	<p>Each obligor is assigned a credit rating. Correlations of credit rating migrations between individual obligors are derived using the country/industry profile of each obligor.</p> <ol style="list-style-type: none"> <li>In the <b>Object(2)</b> field, enter a value using the following syntax: &lt;Country&gt;^&lt;Industry&gt;</li> <li>In the <b>Value</b> field, enter a value using the following syntax: &lt;Number&gt; where <i>Number</i> represents the dependency of the obligor with respect to the related Equity Indices.</li> </ol>
CM-TOTAL-ASSETS	Enter a value.
CM-COUNTERPARTY-TYPE	The possible values are: Corporate, Banks, and Sovereign.
CM-EXPORT	<p>To prevent the export of obligors that do not have any related exposures, and to allow the export of those that do, you add the CM-EXPORT property to the entity. This property has two possible values:</p> <ul style="list-style-type: none"> <li>Yes - export the obligor</li> <li>No - do not export the obligor.</li> </ul> <p>Note: The default value is Yes. If the property is missing, the obligor will be exported.</p>
CM-SHORT-EXPOSURE	<p>For netting and collateralization, you add the CM-SHORT-EXPOSURE property to the entity to define whether short positions against a specific obligor should be either of the following:</p> <ul style="list-style-type: none"> <li>Not exported (Do not Export)</li> <li>Exported as such (Export as such).</li> </ul>

---

**Note:** See 3.3.9.2 *Assigning properties* on page 49 for more information about properties and how to assign them to static data entities.

---

### 22.2.3 Defining obligor credit ratings

CMI supports standard credit rating systems from Standard & Poor's or Moody's investors service. For instance, the "S&P 8-state" rating system contains 8 different rating states from AAA (the best) to CCC (the worst) plus the default state D. Custom rating systems can be added to the CMI database.

Defining obligor credit ratings is done in two stages. First, you must define the credit rating systems for CMI. You then need to map the CMI credit ratings to the obligor entity.

To define credit rating systems for CMI:

- In Credit Rating Editor, select the relevant entity.

See also 3.31 *Credit ratings (optional)* on page 142 for more information about setting up this type of static data.

- In the **Credit Rating Map** page, enter the relevant rating code.
- In the **Properties** page, select `CM-RATING-ID` from the **Property** field.
- In the **Value** field, enter a value using the following syntax:

<RATING AGENCY>

where <RATING AGENCY> is one of the possible credit systems available in CreditManager.

To map the CMI credit ratings to the obligor client entity:

- In Client Editor, fill in the fields in the **Credit Ratings** page using the information in the following table:

Information	Description
Rating	Rating for the obligor. The choices available are the credit ratings that you defined in Credit Rating Editor.
Rating Code	Credit rating that corresponds to the obligor.

## 22.2.4 Defining exposures

In Instrument Editor, you can define the following exposures for CMI:

Information	Description
CM Debt Issuer Type	The possible values are Libor or Government (Govt).
CM Seniority Level	To add a seniority class to an instrument enter a value using the following syntax: <Code (Recovery rate, Standard Deviation)> where: Code is defined by the table found in the appendix: see <i>E.2.2 CM Seniority Level</i> on page 707. CMI can also send its own recovery rates and standard deviation. In this case, specify the <b>CM Seniority Level</b> as <code>USER(&lt;rate&gt;,&lt;std_dev&gt;)</code> .
CM Spread Curve	CMI uses spread curves (and yield curves) for future valuations of exposures. Standard spread curves, supplied in CMI, are corporate spreads to government zero yields by industry and credit ratings. Enter a value using the following syntax: <Industry^CM-RATING-SYSSYSTEM^CurrencyCode> where: RATING-SYSTEM is one of the credit rating systems available in CreditManager, Industry is one of the CreditManager industries, and CurrencyCode represents the currency.

## 22.2.5 Exporting and importing exposures and obligors

This section describes how to export and import exposures and obligors between CreditManager and TRM.

### 22.2.5.1 Exporting exposures and obligors

CMI exports individual transactions. This is the case for all openly-defined instruments such as Depo/Loan, Swaps, FX Forward, and FRN.

Note that settlement cashflows are not exported.

You use the *CreditManager Exposure Export* activity to export positions from TRM into CreditManager.

- To set up the activity, see *A.73 CreditManager Exposure Export* on page 657 for details of the activity's parameters.

You use the *CreditManager Obligor Export* activity to export obligors from TRM into CreditManager.

- To set up the activity, see *A.74 CreditManager Obligor Export* on page 658 for details of the activity's parameters.

---

**Note:** Activities are set up and managed in Activity Manager: see *Chapter 6 Managing activities* on page 227 for more information.

---

### **22.2.5.2 Importing exposure and obligor files into CreditManager**

Refer to the CreditManager documentation to find out how to import your exposures and obligors into CreditManager.

TRM provides pricing tools for IR and FX trades: IR Pricing and FX Pricing. You can use IR Pricing to simulate the pricing of Vanilla swaps and swaptions (see *23.1 Pricing IR trades* on page 575), and FX Pricing to simulate different types of pay-off, such as, Digital/Vanilla options, Barriers, and so on (see *23.2 Pricing FX trades* on page 593).

Both tools use TRM static data, market feed, valuation methods, and other entities to provide real-time pricing simulations from which you can generate transactions in TRM.

As in TRM, trades and transactions created in these tools go through TRM's transaction flow to control the static data at various stages of the trade or transaction definition. For both tools, it is possible to disable/enable the **Commit** and **Re-Open** actions using the Configuration Table Editor (see the *TRM System Administration Guide* for more information).

The main difference between these tools and existing TRM pricing tools is that IR Pricing and FX Pricing tools are designed to allow you to do the pricing in a single application. That is, you can create a trade with all relevant information in one place before generating the transaction in TRM.

For more information about existing TRM Pricing tools, see *4.6 Pricing tools* on page 186.

---

**Note:** In this chapter, the term *trade* refers to the pricing simulation; the term *transaction* refers to the deal booked to TRM.

---

## 23.1 Pricing IR trades

This section describes how to use the IR Pricing tool to capture and store pricing simulations. The IR Pricing tool makes it easy for traders to capture and store pricing simulations using dedicated instruments with IR Pricing features. These features define the characterization of the instruments and the pricing valuation and calibration. Calibration is done through NumeriX features attached to the instrument.

See *TRM Instruments: Processing and Calculations Guide* for more information about IR Pricing instruments.

Additionally, IR Pricing uses payoff types which are defined in a specific editor called IRP Payoff Types Editor. This editor functions in a similar way to other TRM editors.

### 23.1.1 Defining IRP payoff types

Payoff types are defined in the IRP Payoff Type Editor. This editor is specific to IR Pricing. Payoff Types are predefined expressions that are used in floating leg trades in IR Pricing. When you retrieve an existing trade, IR Pricing matches the expression that was saved with the trade with one of the predefined payoff types. The matching process includes both active and inactive payoff types. When a match is found, the payoff type is automatically populated. When a match is not found, and there is an active and modifiable payoff type with an empty expression, then this type is displayed and the expression remains modifiable. Otherwise, a special Unknown type is displayed. This type is modifiable, if and only if, there is at least one active and modifiable payoff type.

---

**Note:** If the payoff type matched with the expression in the retrieved trade has since been disabled, it will still be recognized, but will not be modifiable.

---

TRM provides the following predefined payoff types:

Payoff Type	Expression
Capped / Floored CMS	max (floor %, min (cap%, cms +spread %))
Capped / Floored Libor	max (floor %, min (cap%, ir +spread%)
CMS	cms+spread%
Leverage CMS	factor*cms + spread %
Leverage CMS Cap / Floor	max (floor %, min (cap%, factor*ir +spread%)
Leverage Libor	factor*ir + spread %
Leverage Libor Cap / Floor	max (floor %, min (cap%, factor*ir +spread%)
Libor	ir +spread%
Overnight Compound	compound(@,@,@,@,[ir+spread%],@)
Undefined	This expression is modifiable so that you can enter the expression when you create a trade.
Unweighted Average	average_q(@,@,@,@,[ir+spread%])
Weighted Average	average(@,@,@,@,[ir+spread%])

To define a payoff type:

1. In IRP Payoff Type Editor, click **New** to create a new payoff type and complete the following information:

Information	Description
ID & Name	Unique ID and name for the payoff type.
Expression	Unique expression used to calculate the trade. If the payoff type is modifiable and you modify the expression, then the original payoff type definition is also updated.  Note: Only the expression part of the payoff type definition is saved with the trade.
Inactive	Switch on to exclude the payoff type from the list of available payoff types. Payoff types set to inactive cannot be selected in IR Pricing. Existing trades that use inactive payoff types are not effected by the inactive switch. In this case, the expression cannot be modified.
Modifiable	Switch on if you want to be able to modify the expression in the IR Pricing.

2. Click **Save As** to save the definition.

## 23.1.2 IR Pricing tool

The IR Pricing tool enables you to capture trades, run pricing simulations, view and adjust quotes and key figures, and then to generate the trade as a standard TRM transaction. In fact, the IR Pricing tool enables you to perform deal entry, pricing, and monitoring functions in one application. The IR Pricing tool functions in the same way as any other TRM manager, monitor, and so on.

### 23.1.2.1 Perspectives

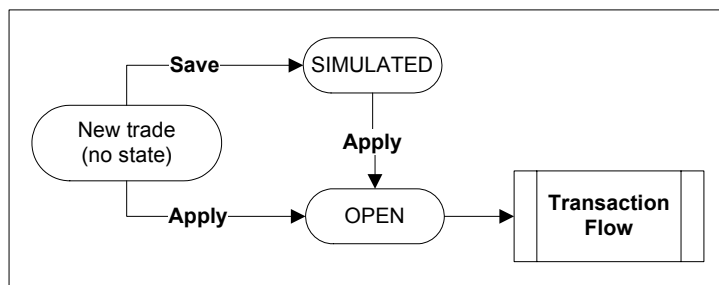
IR Pricing provides two perspectives in which to perform pricing, one is dedicated to providing a global vision of the trade; the other perspective is dedicated to the calibration aspect of the trade. You access these perspectives through two buttons (**Trade perspective** and **Calibration perspective**) located on the upper right-hand side of the screen.



- *Trade perspective*, provides a layout containing all the views you will need to perform pricing, for example, **Enter Board**, **Trade Setup**, **Key Figures**, **Blotter**, **Query**, **Quotes Graph** and **Quotes**. The **Trade perspective** is the default perspective.
- *Calibration perspective*, only shows the **Calibration** view where you can select and run the calibration and view the calibration output. Calibration is mainly needed for NumeriX.

### 23.1.2.2 IR Pricing trade processing

IR Pricing uses similar commands as TRM to move the trades through the transaction flow to different states. The transaction flow after the **Open** state is identical to the one in TRM, except for the *Simulated* state, which is specific to IR Pricing trades, as shown in the following flow:



The **Save** command moves the trade to the **Simulated** state, i.e. draft trade. Unlike trades in the **Open** state, trades in the **Simulated** state are not yet booked.

The **Apply** command moves the trade to the **Open** state; a trade in this state is booked. A booked trade means that it is considered by the system as any deal captured in TRM. Trades in **Simulated** and **Open** states can be re-priced or canceled. In both cases, trades are assigned a transaction number (TX Number) and can be queried in the **Query** view or in IRP Transaction Lookup (**Ctrl+L**).

---

**Note:** When you have booked the trade, you can continue to process the generated transaction in Transaction Manager like you would any other TRM transaction.

---

### 23.1.2.3 IR Pricing menus

This section describes the menus that you use to create pricing simulations, and then generate them in TRM.

#### 23.1.2.3.1 File

Menu Item/Shortcut	Description
Properties... <b>Ctrl+P</b>	Opens the <b>Properties</b> dialog where you set up your pricing properties. This dialog is used only when there are no pricing properties specified at the trade level, i.e. default only, and when the trade is not saved.  Typically, you define the pricing properties at the trade level in the <b>Pricing</b> section.

#### 23.1.2.3.2 View

All IR Pricing views are available from the **View** menu. IR Pricing views function in a similar way to TRM views in that they are dockable and you can arrange them on the screen in a manner that best suits your purposes. You can use the icons in the view's toolbar to customize the width of the views, or minimize and maximize views. Another way to minimize and maximize views is to double-click the view's tab. This minimizes the other views, and maximizes the view to use the freed space. Double-clicking the maximized view tab restores the view to its initial size and position, and restores the other views.

The information in the views dedicated to capturing trades is organized into one or more *sections*. Each section contains specific information about the selected trade. This information can be

customized to your needs. For more information about sections, see *23.1.2.4 IR Pricing sections* on page 581.

---

**Hint:** Some columns may be hidden. To show or hide columns, click the **Select Properties** icon in the toolbar of the section.

---

## Blotter

Shows the information (trade and legs) of all trades (new and queried). This view is useful when pricing multiple trades at the same time, as you can use it to navigate from one trade to the other. It is similar to the Transaction view in TRM. The results of queries made in the Query view are displayed in the blotter.

## Calibration

Shows the models and calibration parameters used for the pricing of transactions. It shows the same information as the Calibration perspective. It functions in a similar way to TRMs Calibration Monitor. You can calibrate, view, and modify the outputs of the calibration. When you modify the outputs, all pricing figures are updated to reflect the changes. Outputs are displayed in the right side of the view. There can be more than one output for a calibration depending on the trade.

Calibration is needed only when using NumeriX valuation. When estimation curves and NumeriX valuation are defined at the instrument level, IR Pricing defaults to these settings for the calibration. If NumeriX valuation is not defined at the instrument level, the calibration model defaults to the Hull and White model.

These defaults are explained in more detail in the TRM Instruments: Processing and Calculations guide.

You can also modify and save calibration sets and baskets in the Calibration view. The calibration sets and baskets are saved to the relevant editor.

## Cashflows

Mainly used to display the output of transactions, similar to the Transaction Manager's **Cashflow** view.

## Enter Board [Ctrl+Home]

Displays all of the information relative to the transaction definition. By default, both legs are visible side by side with the fields that must be set up for the pricing. Once you have selected the currency, any information that you select or enter in this view is taken into account in the **Quote** view.

## \*Key Figures

This view enables you to view the relevant key figures for the selected trade. For a swaption, you can view the following key figures among others: Strike Price, Forward Price, Delta, Gamma, Theta, and Vega.

---

**Hint:** To refresh key figures press **Ctrl+K**.

---

The key figures you can see in this view are identical to the ones you can see in TRM, except for the following:

- **Weighted Average Life (WAL):** Weighted average life is computed by leg and corresponds to the weighted average of the principal repayments.

Equation 23-1 Weighted Average Life calculation

$$WAL = \sum_{i=1}^n \frac{p_i}{P} t_i$$

where

- $P$  is the Principal
- $P_i$  is the principal repayment on the coupon  $i$  and  $t_i$  at the time from the valuation date to the coupon  $i$

If applicable, you can use the Solver to set a target value for the market value and adjust either the fixed rate of the fixed leg, the spread of the floating leg; or for swaptions, the premium price.

To use the Solver to set a target market value, click the **Solver** icon (or press **Ctrl+S**), enter the target market value, and either select the leg to adjust the rate or spread according to the leg type; or select **Premium** to adjust the premium price.

## Query

Enables you to fetch existing trades and transactions previously entered in IR Pricing. You can only fetch trades and transactions entered in IR Pricing. The result of the query is displayed in the **Blotter** view.

Similar to the TRM **Query** view, you can enter criteria in multiple rows and/or columns combined with the operator OR to fetch specific trades and transactions. Empty cells mean that the column is not relevant to the query, and is ignored. You can also hide or show query columns by right-clicking anywhere in the column header and selecting **Select Columns**.

The following columns are available for querying: **Tx Number, Tx State, Portfolio, Counterparty, Trader, Instrument, Instrument group, Trade Type** (Swap or Swaption), **Currency, Secondary Instrument** (underlying swap instrument for swaptions, not used for swaps), **Opening Date, Value Date, Maturity Date, Expiry Date** (for swaptions only).

### Hint:

You can rename the labels of these columns to suit your business purposes in the **Select Properties** dialog (**Select Columns**), by right-clicking the property you want to rename and selecting **Rename**. These new labels are saved with the layout. To reset the name, simply click **Reset Renamed**, the label is reset to its initial value.

## Quotes

Enables you to visualize the market information of the specified currency (or currencies) in the dedicated tab for the trade you are pricing. For each currency, the following pages are displayed: **Yield Curves, Swaption, Cap/Floor, and Caplet/Floorlet**. When you modify any pricing settings that directly impact the calculations, the market information is updated dynamically.

- Bid, Ask quote, Bid discount factor (DF), Ask discount factor, and for IR Quotes defined with the **Bootstrap Yield Curve** feature and yield curves defined as **Single Quote**, yield and discount factor of the yield curve attached to the currency for the scenarios. You can have direct access to the quotes received from the feed for a given date and scenario. See *3.8 IR quotes and yield curves* on page 64.
- PAR value of the currency as well as the Zero Curves.
- Bid, Ask quotes of the volatility surfaces of the Caplets/Floorlets and Swaption attached to the currency for the scenarios.
- Graph showing the bid, ask and average quotes of the yield curves at a given time.

You can modify the market values, for example, if you estimate that the market value will attain a certain rate, and you want to simulate the trade based on that estimate. Modified values appear in bold and are saved with the trade.

You can also use the underlying curve switches to filter one or more of the underlying curves in the **Yield Curves** page, for example, if you want to focus on the market information for a given underlying curve.

When the yield curve is calculated from the MM Future Chain instrument, the underlying money market quotes are also displayed. These quotes can be modified to check their impact on the transaction key figures. MM future quotes are saved with the trade.

---

**Note:** For more information, see *Chapter 4 Managing market data* on page 161.

---

### Trade Setup [Ctrl+End]

Shows the same information as the **Enter Board** view, except that it is arranged differently. The **Trade Setup** view is split into two main sections, **Trade Structure** (which cannot be customized) and a section that shows the selected component's details. You can display the Trade Structure as a standalone view.

This view is typically used to perform more advanced pricing on the trade, for example, to define schedule structures, callable swaps, valuation setup, irregular values and irregular amortizations, and so on.

### Trade Structure

Shows the main components of the trade in a tree-like hierarchy, e.g. for swaps, per leg, schedule (Interest, Compounding, Amortizing), and Call (for a callable swap) . You can navigate these components by using the **Expand (+)** and **Collapse (-)** buttons located on the left of each component.

### Administration Views

View	Description
Log View	Enables you to check the log file while you are working in IR Pricing. Log files are stored on your local drive in the following folder:  <code>\Application Data\Wall Street Suite</code>
Progress View	Alternatively, you can also access this view by clicking the show progress icon in the right-hand corner of the status bar. This view shows recently performed actions. You can remove all completed operations from the view or set up preferences by clicking the menu and selecting <b>Preferences...</b>
Service Statistics	Shows information about the connections and failure reasons. You can refresh statistics, keep them synchronized or clear them.
System Messages	Shows system messages organized by severity, time and message. When available a hint is displayed. You can clear all messages when you have finished checking them.

#### 23.1.2.3.3 Application

Menu Item/Shortcut	Description
Pricing Tools	Opens IR Pricing or FX Pricing.

#### 23.1.2.3.4 Command

Menu Item/Shortcut	Description
New Trade... Ctrl+N	<p>Opens the <b>New Trade...</b> dialog where you select the instrument type (trade type), such as <b>Swap</b>, <b>Swaption</b> or <b>Any</b> and then the instrument itself.</p> <p>This dialog is split into two main parts: the upper part shows a list of instruments (with IR Pricer feature); the lower part shows characteristics of the selected instrument, for example:</p> <ul style="list-style-type: none"> <li>For swaps: Leg types (fix or Floating), whether the swap is callable (or not), the instruments assigned to the legs, and swap type (single or cross currency).</li> <li>For swaptions: Trade type, type, amortization type, underlying swap and underlying swap type, and leg types.</li> </ul> <p>You can navigate the list of instruments by using the Up and Down arrow keys.</p> <p>See <i>TRM Instruments: Processing and Calculations Guide</i> for more information about swap instruments.</p>
Duplicate Trade Ctrl+D	<p>Creates a new trade with the same characteristics as the initial trade, apart from the transaction number and the state. After the trade has been duplicated, it is possible to change some of the characteristics of the new trade. This is a useful function when you need to create many deals with similar characteristics using the same instrument.</p> <p>To duplicate a trade, select the trade or transaction and press <b>Ctrl-D</b>.</p>
Execute Query Ctrl+E	Fetches the transactions that match the query you have entered in the <b>Query</b> view. (This command works in the same way as it does in TRM.)
Refresh Key Figures Ctrl+K	Refreshes the market feed and re-calculates figures for the pricing.
Toggle Solver Ctrl+S	Toggles the solver on or off. The Solver is located in the <b>Key Figures</b> view; it enables you to change key figures and to apply these new figures to the trade.
Transaction Lookup Ctrl+L	<p>Opens <b>IRP Transaction Lookup</b>. <b>IRP Transaction Lookup</b> is a mode of the Transaction Manager dedicated to IR Pricing transactions. You can use it to perform TRM-like actions on the transactions you generated in IR Pricing.</p> <p>Note: Only transactions captured in IR Pricing are displayed.</p>
Refresh Static Data Ctrl+R	<p>Refreshes the static data and re-calculates figures.</p> <p>For general information about static data, see <i>Chapter 3 Managing static data</i> on page 41.</p>

#### 23.1.2.3.5 Screen

Menu Item/Shortcut	Description
<application name>	Shows all open sessions and enables you to toggle between these sessions.
Close Screen	Closes the active Pricing session.

#### 23.1.2.3.6 Window

Menu Item/Shortcut	Description
New Window	Opens another session of the active pricing application in a new window.

#### 23.1.2.4 IR Pricing sections

The views are organized in sections. Each section contains all relevant information to specific settings of the trade. You can use the default display, or you can customize the display by using the

icons located in the toolbar in each section. Use the following icons to customize what information is displayed in the sections:

- The **Select Properties...** icon enables you to show or hide fields in a section to display only those that are relevant to your needs. In some cases, you will find that some of these fields are used in other parts of IR Pricing.

For example, if you change the **Maturity Code** in the **Enter Board** view - main characteristics, the corresponding field is updated in the **Trade Setup** view. It is a means to organize the information according to a specific purpose.

- The **Select Sections...** icon enables you to add or remove sections from a view.

The following table describes the main sections at the top component level:

Section	Description
Pricing	Enables you to modify or define the pricing settings for the selected trade.
NumeriX	Enables you to configure NumeriX valuation settings for trades using NumeriX.
Transaction	Enables you to select the information required to save or apply the trade. You can also see the transaction number when the trade has already been saved or applied.

The following table describes the main sections at the leg component level:

Section	Description
Conventions	Available for both types of legs: Contains the fields you can use to set up business and payments conventions.
Irregular Values	(For Swaps only.) Available for the <b>Interest</b> component, for both types of legs: Enables you to add, remove, duplicate, import or export irregular values. You use irregular values to modify schedule data with validity ranges when a given field needs to take several values into account depending on the date: <ul style="list-style-type: none"> <li>• Fixed: From When and Rate</li> <li>• Floating: From When, Factor, Spread, Divider, Cap, Floor.</li> </ul> Use the <b>+</b> or <b>X</b> icons to respectively add or remove values to or from the view.
Irregular Amortizations	(For Swaps only.) Available for the <b>Amortizing</b> component, for both types of legs: Enables you to specify irregular amortization schedules. The grid shows two columns: Date and Value. The dates are generated automatically according to start and end dates and frequency of the trade. The value corresponds to the selected amortization type: Percent, Amount or Outstanding Amount. By default, the principal is repaid at maturity date. You can synchronize the amortization values of both legs by selecting the leg you want to copy and clicking <b>Copy to Other Leg</b> . You can also import and export irregular amortizations by clicking the <b>Import Irregulars</b> or <b>Export Irregulars</b> . Note: Select <b>Irregular</b> as the calculation method to activate this section.
Reset	Available for the <b>Interest</b> component, for floating legs only: Enables you to change certain settings of the trade. You can use the information in this section to capture, as part of the transaction, details of the interpolation period to be used for the first or last cashflow, For example, to specify the periods between which the first stub will be interpolated by using the <b>Initial Fixing period</b> and <b>Initial Fixing period 2nd</b> fields.

You use most of these sections to enter a trade. The fields in these sections are described in more detail further on in this chapter.

### 23.1.2.5 Pricing IR trades

This section describes how to capture a trade, simulate pricing, perform calibration, view market information, and then generate a TRM transaction based on the simulation.

---

**Note:** All default values appear between parentheses.

---

#### 23.1.2.5.1 Entering a new trade

This step describes how to enter a trade specific to IR Pricing. IR Pricing trades use swap instruments with a special feature IR Pricer attached. The IR Pricer feature defines the characterization or characteristics of the swap instrument, which includes whether the swap is callable (Yes or No), leg types (Fixed or Floating) and swap type (Single or Cross Currency). These characteristics cannot be modified at the trade level. For more information about setting up instruments for IR Pricing see *TRM Instruments: Processing and Calculations Guide*.

Most of the fields used to enter a trade are similar to the ones used to capture deals in TRM. See TRM documentation for more information about these fields.

When you have entered all mandatory fields, you can save the trade at any time by using the **Save** command. Mandatory fields are indicated as such in the following tables.

---

**Note:** New or changed data always appears in bold in the views.

---

To enter a new trade:

---

**Note:** The displayed fields may differ according to your user defined settings. To show or hide properties in sections, click **Select Properties** icon in the toolbar of the section.

---

1. In the IR Pricing window, **Trade perspective**, press **Ctrl+N** or click the **New Trade...** icon to create a new trade.
2. In the **New Trade...** dialog, select the instrument type, i.e. swap or swaption. The available instruments are displayed.
3. Select the instrument with the characterization that best meets your needs. You can view the characteristics of the selected instrument in the Instrument details area of the dialog.
4. Click **Select**.
5. In the **Enter Board** view, use the following table to complete the main characteristics of the swap or swaption trade:
  - If you are entering a swaption trade, complete the Swaption and Premium fields as follows:

Field	Description
Instrument	Read-only. Shows the swap instrument used for this trade.
Exercise Type	Read-only. Defaults from the characterization.
Sign	Buy or Sell.
Opening Date	(Mandatory) The opening date of the trade. Defaults to the current date. This date is also the default pricing date.
Expiry Code	If the <i>Expiry Date Setup</i> feature is applied at instrument level, you can enter the expiry date period you want to use to calculate the expiry date for the transaction.
Expiry Date	Last date when the option can be exercised.

Premium fields:

Field	Description
Type Currency	Type and currency of the premium. If these values are defined at the instrument level using the <i>Option Premium</i> feature at instrument setup, then these values are used as the default in the transaction and cannot be modified.
Price	Depends on the premium type: this could be specified in amount, percent, or points.
Amount	(Read-only). Computed from the premium type/price.
Date	Settlement date of the premium.

- If you are entering a swap or a swaption trade, complete the IR Swap fields according to the swap type:

Field	Description
Instrument	Read-only. Shows the swap instrument used for this trade.
Opening Date	(Mandatory) The opening date of the trade. Defaults to the current date. This date is also the default pricing date.
Value Date	(Mandatory) This date corresponds to the Spot date which is also the trade date. This date depends on the convention used.
Maturity Code	The code of the maturity period of the Swap, which can be in months or years, for example, 1M, 5M, 3Y, 6Y, and so on. The systems automatically calculates the maturity date.
Maturity Date	(Mandatory) The maturity date of the Swap. The maturity date is calculated according to the selected maturity code.
Maturity Adjusted	Choices are <b>Yes</b> or <b>No</b> : <ul style="list-style-type: none"> <li>• Select <b>Yes</b>, if the maturity date is calculated based on the selected Days Convention defined in <b>Amortizing</b>.</li> <li>• Select <b>No</b>, if the maturity date is calculated based on the Days Convention defined in <b>Interest</b>.</li> </ul>
Pricing Mode	The valuation mode used for the pricing. For example, <b>Default</b> (default), <b>Theoretical</b> , <b>Benchmark</b> or <b>All</b> .
Callable	Read-only. Shows whether the swap is callable ( <b>Yes</b> ) or not ( <b>No</b> ). Note: This information is defined at instrument level as part of the characterization and cannot be modified.
No Common Maturity	<b>Yes</b> or <b>No</b> : <ul style="list-style-type: none"> <li>• <b>No</b> (default) means that the same maturity date is used for both legs.</li> <li>• Select <b>Yes</b>, if you want each leg to have a different maturity date.</li> </ul>
FX Rate	(For cross currency instruments only.) FX Rate that you want to set for the transaction.

6. Use the following table to complete the main characteristics of the legs:

Field	Description
Instrument	Read-only. Shows the instrument used for this trade.



Field	Description
Currency	(Mandatory) The currency of the leg of the Swap. If you are defining a single currency swap, the currency of the second (right) leg is automatically populated when you select the currency of the first (left) leg. Note: When you select a currency, the <b>Quotes</b> view displays the market information based on the entered parameters.
Amount	(Mandatory) The amount of the Swap's leg. The <b>Sign</b> field is populated.
Sign	This field is automatically populated when you enter the amount. By default, the first leg is always <b>Receive</b> , the second <b>Pay</b> .
Estimate Rate	(For floating legs only.) Defaults to the estimation curve defined at the instrument level, or if not defined, uses the setup defined at the currency level instead. You can overwrite the default curves (in which case, defaulting should be done according to the mode and currency).
Valuation Rate	Defaults to the valuation curve defined at the instrument level, or if not defined, uses the setup defined at the currency level instead. You can overwrite the default curves (in which case, defaulting should be done according to the mode and currency).

7. Use the following table to complete the **Interest** fields of the legs:

---

**Note:** You can also choose to complete the interest fields in the **Trade Setup** view - **Interest** component.

---

Field	Description
Generation Method	The method used for cashflow generation. The choices are: Bullet, Times/Year (default), IMM dates, ISDA dates, weeks, year and so on.
Frequency	The number of coupons per year.
Days Convention	The convention used to generate the cashflows. The choices are: <ul style="list-style-type: none"> <li>• <b>Backward:</b> The previous business day is used.</li> <li>• <b>Following:</b> The next business day is used.</li> <li>• <b>Modified Backward:</b> The previous business day is used except if not in the same month, in which case the next business day is used.</li> <li>• <b>Modified Following:</b> The next business day is used, unless this falls in the following month, in which case the previous business day is chosen.</li> <li>• <b>None:</b> No adjustment.</li> </ul>
Calendar	The calendar of the currency used to generate cashflows.
Day Count Fraction	The day count fraction used in the coupon calculations. You can use the filter field to shorten the list of available options. Corresponds to TRM's standard date bases. See <i>TRM Instruments: Processing and Calculations Guide</i> for detailed descriptions of date bases.
Start Date	The start date used for the generation of coupons.
End Date	The end date used for the generation of coupons.
Period End Dates	Yes or No: If you want the value dates of the coupons to be adjusted according to the conventions, select <b>Yes</b> , otherwise keep the default, <b>No</b> .

8. For both swaps and swaptions, use the following tables to complete the **Interest** fields according to the type of leg:

**Hint:** You can also choose to complete the interest fields in the **Trade Setup - Interest** component.

- If you are defining a fixed leg:

Field	Description
Rate	The fixed rate of the fixed leg of the Swap.
Rate Type	The rate type of the rate, for example, monthly, quarterly, semiannual compounded, periodic, or coupon rates.

- If you are defining a floating leg:

Field	Description
Payoff Type	Select the payoff type according to the trade you are entering: <ul style="list-style-type: none"> <li>For swaps: select the payoff type that you want to apply to this trade. Each type contains a unique expression which is displayed in the <b>Expression</b> field. Payoff types are defined in the IRP Payoff Type Editor, see <i>23.1.1 Defining IRP payoff types</i> on page 575.</li> <li>For swaptions, the payoff type defaults to LIBOR (i.e. ir+spread%) and is not editable.</li> </ul> <p>Note: If you select <b>Undefined</b>, the <b>Expression</b> field is editable and you can enter an expression, if and only if you have defined a modifiable expression.</p>
Expression	Shows the expression corresponding to the selected Payoff Type. You can only modify the expression if you select the <b>Undefined</b> payoff type or the selected payoff type is set to modifiable.  If you retrieve an existing trade, IR Pricing matches the expression in the trade with one of the expressions in the predefined payoff types. When a match is found, the Payoff Type field is populated. When a match is not found, and there is an active and modifiable payoff type with an empty expression, then this type is displayed and the expression remains modifiable. Otherwise, a special Unknown type is displayed. This type is modifiable, if and only if, there is at least one active and modifiable payoff type.
Initial Rate	The initial rate of the first coupon of the floating leg.
Reference Rate	The identifier of the fixing curve. Defaults from the instrument. <i>See TRM Instruments: Processing and Calculations Guide.</i>
Reference Period	The fixing period. Defaults from the instrument. <i>See TRM Instruments: Processing and Calculations Guide.</i>
Spread	The additive factor to be added to the <code>factor*ir</code> or <code>factor *cms</code> .
Business Days	The fixing offset. Number of days' offset allowed, that is, the difference in days between the fixing date and the due date (default = 0).

9. Use the following table to complete the **Amortizing** fields for both fixed and floating legs:

**Hint:** You can also choose to complete the amortizing fields in the **Trade Setup - Amortizing** component.

Field	Description
Rate	The fixed rate of the fixed leg of the Swap.
Calculation Method	Amortizing calculation methods are identical to the ones used in TRM. The choices are: Annuity, Capitalization Dates, Capitalization In, Capitalization Out, Compound Interest, Delaying, Discounted Interest, Irregular, and so on. See <i>Chapter 3 Managing static data</i> on page 41 for more information.
Frequency	The amortizing frequency.
Generation Method	Amortizing generation method used for cashflow generation. The choices are: Bullet, Business Days, Days, IMM Dates (M), ISDA Dates (Q), Last of Month, Months, Months (Sticky), and so on.  For swaptions, the generation method depends on the characterization. If the selected amortization type is Bullet, then the generation method defaults to Bullet and is not editable.
Roll Date	Specific date to be used in the schedule each year, without reference to the year: for example, 15 March annually.
First Date	First date generated from a schedule. Required value if it does not follow the standard rolling dates.
Day Count Fraction	The day count fraction used in the coupon calculations. You can use the filter field to shorten the list of available options.  Corresponds to TRM's standard date bases. See <i>TRM Instruments: Processing and Calculations Guide</i> for detailed descriptions of date bases.
Days Convention	The Convention used to generate the cashflows. The choices are: <ul style="list-style-type: none"> <li>• <b>Backward:</b> The previous business day is used.</li> <li>• <b>Following:</b> The next business day is used.</li> <li>• <b>Modified Backward:</b> The previous business day is used except if not in the same month, in which case the next business day is used.</li> <li>• <b>Modified Following:</b> The next business day is used, unless this falls in the following month, in which case the previous business day is chosen.</li> <li>• <b>None:</b> No adjustment.</li> </ul>

**Note:** See *TRM Instruments: Processing and Calculations Guide* for more information about schedule parameters.

10. Click **Save** to save the trade and continue the setup (*23.1.2.5.2 Setting up pricing properties* on page 587). The trade is assigned a transaction number and set to **Simulated** state.

**Note:** When you do a save or apply, you are required to enter the portfolio and counterparty information.

### 23.1.2.5.2 Setting up pricing properties

When you have defined the trade and legs, and you are not using NumeriX, you need to set up the pricing properties for the trade. (If you are using NumeriX, see *23.1.2.5.5 Selecting calibration* on page 591.) Pricing properties are located in the **Pricing** section of **Trade Setup** view.

To define the pricing properties:

1. In the **Trade Setup** view, **Trade Structure**, select the top component that corresponds to the instrument you have entered.
2. In the right-hand side of screen, expand the **Pricing** section, and complete the pricing information:

Field	Description
Figure Date	The date at which the pricing was performed. Defaults to the current date.
Figure Currency	The currency in which the figures are calculated. Defaults to the currency of the trade.
Figure Scenario	The scenario used to store the market data. The default is Freeze.
Risk Offset (%)	Expressed as a percentage. Indicates how much to add or subtract for the period.
Estimate Rate	The yield curve used to overwrite the estimate on both legs.
Valuation Rate	The yield curve used to overwrite the discounting on both legs.
Pricing Mode	The valuation mode used for the pricing: <b>Default</b> (default), <b>Theoretical</b> , <b>Benchmark</b> or <b>All</b> .
Volatility Surface	For swaptions: The volatility surfaces defaults from the instrument or if not defined at the instrument level, defaults to the one defined at the currency level.

3. You can view the result of the pricing in the **Key Figures** view. (The market information updates dynamically as you change the parameters.)
4. Click **Save** to save any changes to your trade (unsaved changes are outlined in bold), and then continue to the next step (23.1.2.5.3 *Defining trade structures* on page 588).

### 23.1.2.5.3 Defining trade structures

This step describes how to define compounding and capitalizing structures of the swap in the **Trade Setup** view. The components of the active trade are displayed in a tree-like hierarchy. The top component corresponds to the main characteristics of the trade; the others correspond to the leg components, and optionally, to the call component. For more information about configuring schedule and cashflow structures, see *TRM Instruments: Processing and Calculations Guide*.

Use the **Expand (+)** and **Collapse (-)** buttons to navigate and configure the information in these components. The details of the selected component are displayed in the section on the right of the **Trade Structure**.

To define Compounding and Capitalizing structures:

1. In the **Enter Board** view, press **Ctrl+End** to switch to the **Trade Setup** view.
2. In the **Trade Setup** view, **Trade Structure**, select the leg component you want to define.

---

**Note:** You can move to the previous or next components by clicking the up and down arrows in the **Trade Setup** toolbar.

---

3. In the **Payment Adjust** field, select one of the following options:
  - No Postponing (default)
  - Postponing: Attaches Payment dates schedules to postpone payments.
  - Postponing & Capitalizing: Attaches the corresponding schedule(s) to the selected leg.

- Postponing & Compounding: Attaches the corresponding schedule(s) to the selected leg.

---

**Note:** For swaptions: The payment adjust field defaults to **No Postponing** and is not editable.

---

4. If you kept the default setting in the previous step, check that the **Interest** settings are complete and move to the next step. Otherwise, use the following tables to complete the structures according to the leg type (fixed or floating):

- For both fixed and floating legs:

Field	Description
Roll Date	Specific date to be used in the schedule each year, without reference to the year: for example, 15 March annually.
First Date	First date generated from a schedule. Required value if it does not follow the standard rolling dates.

- For floating legs only:

Field	Description
Floor	The minimum value that the expression can take.
Cap	The maximum value that the expression can take.
Factor	The multiplicative factor of the expression which can be positive or negative.
Divider	Expression parameter.
Fixing Offset	Minimum number of days' offset is allowed for fixing (default is 0).
Roll from Start	Yes or No. When set to Yes, dates are calculated from Start Date rather than End Date.
Holiday Calendar	The selection list of all calendars.
Initial First Period	First interpolation period used to calculate the first fixing rate .
Initial Second Period	Second interpolation period used to calculate the first fixing rate.

5. When you are satisfied with the pricing, and you are not using pricing a callable swap or NumeriX valuation, you can generate the transaction, see *23.1.2.5.7 Generating the transaction* on page 593.

#### 23.1.2.5.4 Setting up a callable Swap

The *callability* of a swap is defined at the instrument level as part of the characterization. The characterization cannot be changed. If the swap is callable, the **Trade Structure** shows a **Call** component.

To set up a callable swap:

1. In the **Trade Structure**, select the **Call** component, and use the following table to define the call schedule.

---

**Note:** The following fields are found in **Notification** and **Convention** sections.

---

– Main

Field	Description
From Leg	1st or 2nd Defaults dates and frequency from the selected leg.
Sign	For optional events, determines who has the right to do the action: Asset or Liability.

– Notification

Field	Description
In Arrears	The choices are: <ul style="list-style-type: none"> <li>• No</li> <li>• Yes</li> <li>• Yes, Fixing From</li> <li>• Yes, Fixing To</li> </ul>
Fixing Convention	The fixing convention to be followed if the fixing date is a business holiday. The choices are: <b>Backward, Following, Modified Backward, Modified Following, and None</b> (default).
Fixing Calendar	Calendar used for fixing.
Offset Calendar Days Offset Business Days Offset Months	The upper limit of the Call period. Define the number of calendar days, business days, and months.
Max Offset Calendar Days Max Offset Business Days Max Offset Months	The lower limit of the Call period. Define the number of calendar days, business days, and months.

– Conventions (Business)

Field	Description
Days Convention	The convention used to generate the cashflows.
Calendar	Calendar used for adjustment purposes.
Holiday Calendar	Additional calendar to supplement the calendar specified in calendar field.
Long Stub	To change the first coupon period to a long first coupon. By default, it is a short first coupon when the period is broken. If you select <b>Yes</b> the coupon will be a long last coupon.
Min Stub Length	Minimum stub length in calendar days. If a short stub is less than the minimum length, a time step is added to create a long stub.
Penultimate Date	Last-but-one date for a schedule used for adjusting irregular periods, for example, in an Annuity situation.
Roll from Start	Yes or No. When set to <b>Yes</b> , dates are calculated from Start Date rather than End Date.

– Conventions (Payment)

Field	Description
In Advance	Yes or No. When set to <b>Yes</b> , payment is made at the beginning of the period rather than at the end.
Min. Length	Minimum stub length in calendar days. If a short stub is less than the minimum length, its value date is kept, but its payment date is moved to the next one creating a long stub.
Days Business Days Months	Number of business days, calendar days, or months after which a convention is to be applied.

### 23.1.2.5.5 Selecting calibration

The calibration is done in the **Calibration perspective** or in the **Calibration** view. Calibration is only required if you are using NumeriX. The calibration defaults to the estimation curves and NumeriX valuation setup (calibration set, calibration model, quality and analytic quality) defined at the instrument level. When the NumeriX valuation is not defined at the instrument level, the Hull and White model is used.

When the default valuation is not defined at the instrument level, you can select other calibration sets that you have previously defined in TRM's Calibration Single Editor or Calibration Cross Editor. Calibration sets contain baskets and models. Baskets can be defined in TRM Calibration Basket Editor; models are predefined in the system and cannot be modified. For more information about these editors, see *4.7 Pricing complex derivatives* on page 190.

To calibrate the new trade

1. Click **Calibration** in the top right side of the view.
2. In the **Calibration Set** tab (left side of the view), complete the following information:

Information	Description
FX Calibration IR Calibration	Defaults to the calibration set defined at the instrument level when this is available. If the calibration set is not defined, select a model from the list of pre-defined models.  Note: You can create a new calibration set or you can save changes to an existing one, by modifying the ID and/or changing the settings and then clicking <b>Save Calibration</b> .
Calibration Model	Calibration model to apply to this trade. Defaults to the calibration model defined at the instrument level. If the calibration model is not defined, select a model from the predefined list: <ul style="list-style-type: none"> <li>• Black Derman Toy</li> <li>• Black Karasinsky</li> <li>• Deterministic</li> <li>• Hull and White One Factor</li> <li>• Hull and White Two Factors</li> <li>• Hull and White Three Factors</li> <li>• Spot Skew</li> </ul> For more information about which models can be used with which methods, see <i>TRM Instruments: Processing and Calculations Guide</i> .
Max Date	Only available when the calibration model is Spot Skew or Black Karasinsky.
Quality	Only available when the calibration model is Spot Skew, Black Derman Toy, or Black Karasinsky.

3. Additionally, when you have selected the calibration information, you can perform the following tasks:
  - If you are calibrating a cross currency trade, you can add a currency yield curve by clicking **Add/Currency Curve**.
  - If you want to use another calibration set with this trade, click **Add Calibration Set (+)** to add a new calibration set tab.
  - If you want to save your changes or create a new calibration set (i.e. you have changed the ID), click **Save Calibration**.
4. In the **Basket** tab (lower left side of the view), select the basket and volatility surface you want to use in the calibration process:
  - For single and cross currency trades (all tabs):

Information	Description
Basket ID	Defaults to the basket defined at the instrument level. If no basket is defined, select a basket from the list.  Note: For Cross Currency trades, you need to check or select the basket for each tab: Domestic, Foreign and FX Basket.
Volatility Surface	Volatilities are defined in the IR Volatility Reference Editor. See 3.47 <i>Volatilities (optional)</i> on page 158.

- For cross currency (**Domestic** and **Foreign** tabs only):

Information	Description
IR Set	Defaults to the calibration set defined at the instrument level. If no calibration set is defined, select the calibration set.
Model	Defaults to the model defined at the instrument level. if

5. Optionally, when you have selected the basket and volatility surface, you can perform additional actions:
  - If you want to add more rows to the structures, click **Add Item (+)**. Complete all relevant fields.
  - When a trade is callable and you want calibration instruments that have expiry dates to match the call dates, click **Fetch Date**. Complete the information.
  - If you want to simulate pricing using another basket, click **Add Basket (+)** to add a new basket tab, and repeat step 4. on page 592.
  - If you want to save your changes or create a new basket (i.e. you have changed the ID), click **Save Calibration Basket**.
6. When you are satisfied with the settings, click **Calibrate**.

The outputs of the calibration are displayed in the right side of the view, you can modify the **Mean Reversion** and **Volatility** outputs according to your needs.

---

**Note:** Depending on the trade you are pricing you can have one or more outputs, for example, for a single currency: **IR Output**; for a cross currency: one output per tab.

---

7. If you are using NumeriX valuation, complete the step 23.1.2.5.6 *Entering NumeriX settings* on page 593.



#### 23.1.2.5.6 Entering NumeriX settings

1. In the **Trade Setup** view, **Trade Structure**, select the top component.
2. In the **NumeriX** section, complete the Pricing Rates and Valuations settings. These settings default from the NumeriX valuation defined at the instrument level.

---

**Note:** Default settings appear between parenthesis.

---

#### 23.1.2.5.7 Generating the transaction

When you are satisfied with the pricing, you can generate the transaction based on pricing figures in TRM.

To generate a trade:

1. Select the trade in the **Blotter** view.
2. Click **Apply** to move the trade to the Open state.  
See *23.1.2.2 IR Pricing trade processing* on page 577 for more information about states.
3. In the **Applying Transaction** dialog, complete the trade with the following information:
  - Portfolio
  - CounterpartyA transaction number is assigned to the trade, and the state set accordingly.
4. You can continue to work on the pricing in both Simulated and Open states, or move the transaction forward to the other states.

## 23.2 Pricing FX trades

This section describes how to use the FX Pricing tool to capture and store pricing simulations. FX Pricing enables you to enter standalone FX trades (basic forwards and spot transactions, and Vanilla and Digital options with or without compound and barrier features) or use some predefined strategies (such as Call Spread, Put Spread, Risk Reversal, Straddle, Seagull and so on).

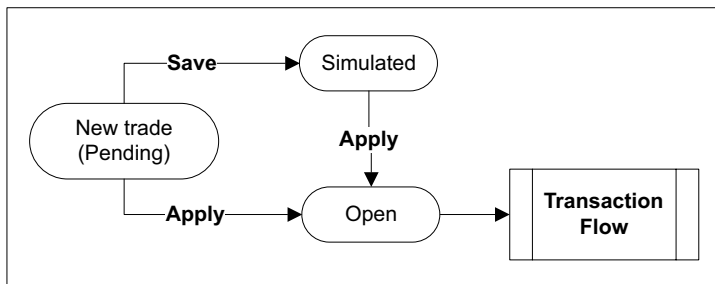
### 23.2.1 FX Pricing tool

The FX Pricing tool is designed to be used by users, for example, traders who may move in to the market as book runners or price takers, and who need to be able to carry out pricing simulations on specific trades. Like IR Pricing, it is used to capture, price, and value FX transactions. FX Pricing also uses a similar design and pricing flow as IR Pricing. Like IR Pricing it also uses the static data and similar functionality as TRM. For more information about the specific pricing flow, see *23.1.2.2 IR Pricing trade processing* on page 577.

From a mode perspective, FX Pricing mode corresponds to the TRM ADMIN mode. For more general information about TRM, see *Chapter 1 Overview* on page 23.

You use FX Pricing to simulate and apply trades in order to generate the transaction in TRM (i.e the trade is booked). A pending trade is not booked to TRM. For strategies, the same flow applies to the underlying transactions at the strategy-ID level in FX Pricing, but not in Transaction Manager where the flow only applies at the individual transaction level.

The following diagram illustrates the flow:



Trades are created with the valuation and market quotes at the time of the pricing. For strategies, risk analysis and events are performed on the package as a whole instead of on each separate component.

After you have created the transaction in TRM, you can retrieve it later on in either FX Pricing or Transaction Manager by running a query on the transaction number or on any other available query criteria similar as you would do in TRM. You cannot cancel these generated transactions in TRM, but you can perform standard FX actions, such as, Early Expiration.

You can also view market quotes, derived market quotes and key figures for the selected transaction. Market value and basic Greeks key figures are shown in both the base and quote currencies.

### 23.2.1.1 Menus

This section describes the menus and commands that you use to create FX trades, and generate TRM transactions based on these trades.

#### 23.2.1.1.1 View

Menu Item/Shortcut	Description
Chart	Displays the <b>Chart</b> view or makes the view active if it is already displayed. This view provides a graphic representation of the key figures according to the selected variable. See <i>23.2.1.5.8 Charting</i> on page 608. To customize the chart settings, click <b>Visual Settings</b> and select the key figures you want to display on the chart and the color in which you want them to be rendered.
Pricing Setup	Displays the <b>Pricing Setup</b> view. This view is used to display and modify the different scenario and valuation mode to be used for the premium calculations. See <i>23.2.1.5.1 Defining the default pricing settings</i> on page 605.
Query	Displays the <b>Query</b> view. This view is used to retrieve trades and transactions that are already in the system for further processing. The retrieved trades and transactions are displayed in the <b>Transaction</b> view. The <b>Query</b> view is very similar to the <b>Query</b> view in TRM. You can retrieve trades and transactions stored in the FX Pricing tool in the same way as you would in TRM. You can use it to retrieve one particular transaction or a number of transactions that use the same instrument or strategy ID or package ID, and so on. When you query transactions by strategy ID, and at least one transaction is matched, then all transactions in the strategy are retrieved.
Quotes	Displays the <b>Quotes</b> view. This view shows all market quotes (FX Swap Points, Yield Curves, and Volatility Surfaces). You can view and modify the underlying quotes, and simulate the behavior of the key figures. See <i>23.2.1.5.3 Modifying market quotes</i> on page 606.

Menu Item/Shortcut	Description
Trade Setup <b>Ctrl+End</b>	<p>Displays the <b>Trade Setup</b> view.</p> <p>This view is used to view and modify the trade parameters of the selected trade or strategy. These parameters are organized in sections, each section grouping common parameters: basic, digital and vanilla, option, and optionally, premium (options) and exotic features (compound and barrier). Two additional sections are dedicated to derived market information and key figures. For more information about sections, see <i>23.2.1.2 Sections</i> on page 597.</p> <p>When you change any trade parameters. all impacted values are updated accordingly in the other sections and views.</p>
Transaction	<p>Displays the <b>Transaction</b> view.</p> <p>Similar in functionality to TRM's <b>Transaction</b> view, this view shows a summary of all trades. This view is useful when pricing multiple trades at the same time, as you can use it to switch from one trade to another; or to create a new trade from an existing trade with different strategies by pressing <b>Ctrl+D</b>. You can also edit the fields directly as an alternative to the <b>Trade Setup</b> view.</p> <p>To customize the view, show or hide columns, right-click the column header and click <b>Select Columns</b>.</p>
Transaction Figures	<p>Displays the <b>Transaction Figures</b> view.</p> <p>Similar in functionality to TRM's <b>Transaction Figure</b> view. This view shows the key figures for the selected strategy or transaction. You can also modify the trade parameters in this view. In which case, the modified values appear in bold and the aggregated totals appear in bold and in a different color according to your configuration.</p> <p>To customize the view, show or hide columns, right-click the column header and click <b>Select Columns</b>.</p>
Administration Views	<ul style="list-style-type: none"> <li>• <b>Log View:</b> Enables you to check the log file while you are working in FX Pricing. Log files are stored on your local drive in the following folder:  <code style="padding-left: 20px;">\Application Data\Wall Street Suite</code></li> <li>• <b>Progress View:</b> Alternatively, you can also access this view by clicking the show progress icon in the right-hand corner of the status bar. This view shows recently performed actions. You can remove all completed operations from the view or set up preferences by clicking the menu and selecting <b>Preferences...</b></li> <li>• <b>Service Statistics:</b> Shows information about the connections and failure reasons. You can refresh statistics, keep them synchronized or clear them.</li> <li>• <b>System Messages:</b> Shows system messages organized by severity, time and message. When available a hint is displayed. You can clear all messages when you have finished checking them.</li> </ul>

### 23.2.1.1.2 Command

Menu Item/Shortcut	Description
New Trade... <b>Ctrl+N</b>	Opens the <b>New Trade...</b> dialog to select the type of trade you want to price.
Execute Query <b>Ctrl+E</b>	Fetches the transactions that match the query you have entered in the <b>Query</b> view. (This command works in the same way as it does in TRM.)
Refresh Key Figures <b>Ctrl+K</b>	Refreshes the market feed and re-calculates the figures. Key figures are summarized in the <b>Key Figures</b> section of the <b>Trade Setup</b> view.
Toggle Solver <b>Ctrl+S</b>	Toggles the solver on or off. The <b>Solver</b> icon is located in the <b>Key Figures</b> section.
Transaction Lookup <b>Ctrl+L</b>	Opens <b>FXP Transaction Lookup</b> and displays the selected FX pricing transaction. FXP Transaction Lookup is a mode of Transaction Manager that is dedicated to FXP displaying transactions.
Refresh Static Data <b>Ctrl+F5</b>	Refreshes the static data and re-calculates the figures.

### 23.2.1.1.3 Action

This section describes the actions that you can perform at the transaction level (in either the **Transaction** view or the **Transaction Figures** view). As well as these actions, you can also perform the standard TRM actions for the particular instrument in Transaction Manager.

For more information about the actions that you can perform on FX transactions, refer to the relevant instrument in *TRM Instruments: Calculations and Processing Guide*.

Menu Item/Shortcut	Description
Duplicate Trade <b>Ctrl+D</b>	<p>Enables you to create other transactions from existing ones. This is useful when you need to create many transactions with similar characteristics using the same instrument or strategy.</p> <p>To duplicate a transaction or strategy, select the transaction or strategy and press <b>Ctrl-D</b>.</p> <ul style="list-style-type: none"> <li>• If you are duplicating a transaction, this action creates a new trade with the same characteristics as the selected transaction, except for the transaction number and state.</li> <li>• If you are duplicating a strategy, this action creates a new strategy based on the same strategy as the selected strategy, but assigns a different strategy ID.</li> </ul>
Split Strategy	<p>(Strategies only) Enables you to remove the strategy and/or packaging type and strategy ID and/or package ID from the transactions, making each transaction independent. See 23.2.1.6.3 <i>Split Strategy</i> on page 609.</p> <p>Note: You can only split strategies in FX Pricing, not in TRM.</p>
Early Expiration	<p>Enables you to early expire a transaction or strategy. This action generates duplicate reverse strategy transactions. See 23.2.1.6.1 <i>Early expiration</i> on page 608.</p> <p>Note: You can only do a full early expiration, not a partial.</p>

#### 23.2.1.1.4 Layout

As well as standard TRM layout functionality, FX Pricing also provides following layout options.

Menu Item/Shortcut	Description
Set to Default	Define the active layout as the default layout.
Lock Customization	Lock the current layout for modification by other concurrent users using the same layout.

#### 23.2.1.2 Sections

The views in FX Pricing are organized in sections. Each section is dedicated to a particular aspect of the trade and contains all relevant information. You can use the default display, or you can customize the display by using the icons located in the toolbar in each section. The sections may vary according to the selected trade.

The following table describes the main sections:

Section	Description
Premium	(For options) Displays the settings used to calculate the premium of options. Premium figures can be calculated as percentage, basis points, or amount. See <i>23.2.1.5.6 Changing the preferred premium</i> on page 607. You can view premium figures in base and quote currencies and in different types in the <b>Transaction Figures</b> view.
Transaction	Enables you to select the information required to save or apply the trade. You can also see the transaction number when the trade has already been saved or applied. If you are saving or applying a strategy, the strategy ID and strategy type are also displayed.
Option	(For strategies only) Enables you to select the main characteristics of the underlying option (Vanilla option, Digital option).
Compound or Barrier	(For compound or barrier features only). Enables you to select the compounding or barrier features of the underlying option (Vanilla option, Digital option).
Derived Market Info	Displays the derived market quotes, see <i>23.2.1.5.3 Modifying market quotes</i> on page 606.
Key Figures	Enables you to view most of the key figures that are visible in TRM including Greeks (delta, gamma, vega, theta, and so on). Greek key figures can be expressed as a percentage of the nominal amount. See <i>23.2.1.5.5 Monitoring key figures</i> on page 607.
Solver Output	Displays the results of the last modification using the Solver in the <b>Key Figures</b> section. See <i>23.2.1.5.5 Monitoring key figures</i> on page 607.

#### 23.2.1.3 Setting Up FX Pricing instruments

Before you can start creating trades in FX Pricing, you need to set up the FX instruments that you want to use in FX Pricing with one of the FX Pricer features. You will need to define instruments for each of the standalone instruments (i.e. Forwards and Vanilla and Digital options) and for the strategies that you want to use in FX Pricing.

**Hint:**

If the instrument does not have the FX Pricer feature, the instrument will not be available in FX Pricer.

Feature	Feature ID	Class	Instrument
FX Pricer (Option)	FX-PRICER-FORWARD	FX	FX Forward.

Feature	Feature ID	Class	Instrument
FX Pricer (Option)	FX-PRICER-OPTION	FX-OPTION	Vanilla Option, Vanilla Compound Option, Vanilla Barrier Option Digital Option, Digital Compound Option, Digital Barrier Option

For more information about these features, see *TRM Instruments: Processing and Calculations Guide*.

### 23.2.1.4 Capturing transactions and strategies

This section describes how to capture a trade; create different scenarios using various strategies available; and then generate a transaction in TRM. You will use existing TRM static data, key figures, and valuation models and methods.

Entering a trade in FX Pricing is similar to entering a transaction in one of TRM's transaction boards, you will use the same data as you would to enter a standard Forward, Digital option or Vanilla option, except that you will be able to simulate pricing and valuation before booking the transaction to TRM.

---

**Note:** The following sections do not describe all of the fields that you can populate when capturing a transaction, only those that are specific to or have a specific behavior to FX Pricing. For more information, see *TRM Instruments: Processing and Calculations Guide*.

---

#### 23.2.1.4.1 Entering a standalone trade

This section describes how to enter a standalone trade (forwards and spot transactions, and Vanilla and Digital options). Before starting, you must know which trade type you are going to enter to have the relevant information available.

To enter a standalone trade:

1. In FX Pricing, press **Ctrl+N**.
2. In the **New Trade...** dialog, click the standalone instrument type, i.e. Forward, or Digital Option or Vanilla Option, you want to use. The available instruments are displayed.

**Hint:** Only instruments with the features **FX Pricer (Forward)** or **FX Pricer (Option)** are available in FX Pricing. If your instrument does not appear in the list, check that it is properly set up with one of the FX Pricer features.

---

3. Select the instrument with the characterization that best meets your needs. You can preview the characteristics of the selected instrument in the **Instrument details** area of the dialog.
4. Click **Select** to select the instrument without entering the basic trade parameters or **Next** to enter the basic trade parameters (these are the same for all trade types):

---

**Note:** For Forwards and Options, you do not have to populate all basic trade fields, you can click **Select** to create the trade, and then complete the trade in the **Trade Setup** view. On the other hand, for predefined strategies, you must populate all basic trade fields before you can click **Select**. See 23.2.1.4.2 *Entering predefined strategies* on page 601.

---

Field	Description
Opening Date	The opening date of the pending trade. This is also the pricing date by default.
Base Currency	The base currency of the trade.
Quote Currency	The quote currency of the trade.

Field	Description
Deal/Strike Rate	The deal rate used for Forwards or the strike rate used for Options.
Expiry Date	The date when the trade will expire. You can either type it in or select a date from the calendar.

5. If you chose to enter the basic trade parameters, click **Select**.

A new row is added to the appropriate views and the **Trade Setup** view is populated with the default parameters from the selected instrument.

6. In the **Transaction** view, select the trade you just created and complete it with the relevant parameters in the **Trade Setup** view:

- Forward (**Forward** section):

Field	Description
Sign	Choices are <b>Sell</b> or <b>Buy</b> . The default is <b>Buy</b> .
Base Amount	The base amount of the transaction.
Quote Amount	The opposite value of the base amount multiplied by the deal rate. For example, if the sign is <b>Sell</b> and the <b>Base Amount</b> is negative, then the <b>Quote Amount</b> is positive. On the other hand, if the sign is <b>Buy</b> and the <b>Base Amount</b> is positive, then the <b>Quote Amount</b> is negative.
Value Date	The expiry date plus the spot days. Select a Gap to calculate the value date automatically or select a date from the calendar or enter a shortcut using M for month, Y for year, and so on. For example, for one month, enter 1M, for six months enter 6M, for two years enter 2Y, and so on.  When you have populated the value date, the <b>Derived Market Info</b> section and <b>Quotes</b> view are populated.  Note: You must select both Base and Quote Currencies to enable the choice of a Gap as well as a date. Otherwise only the date is available.
Forward Margin	Margin to apply to the forward rate.
Spot Margin	Margin to apply to the spot rate.
Trade Spot Date	(Read only) The opening (trade) date plus the spot days.
Valuation Method Date Method Figure Date Figure Currency Figure Scenario	Default to the pricing settings set up in the <b>Pricing Setup</b> view. See <i>23.2.1.5.1 Defining the default pricing settings</i> on page 605. The default settings appear between parentheses.

- Vanilla Options (**Vanilla** and **Vanilla Option** sections):

Field	Description
Option Smile	Choices are <b>Yes</b> or <b>No</b> . <ul style="list-style-type: none"> <li><b>No</b> (default). The pricing is based on At-The-Money (ATM) volatility.</li> <li><b>Yes</b>. The pricing is based on the Volatility Smile.</li> </ul>
Sign	Choices are <b>Sell</b> or <b>Buy</b> . The default is <b>Buy</b> .
Option Type	The choices are Call and Put. The default is Call.

Field	Description
Value Date	The value date is populated automatically when you select the Quote Currency. It corresponds to the expiry date plus the spot days. By default, the value date is taken from the underlying. If the underlying's value date changes, the option's value date changes. The converse is not true; i.e. if the option's expiry changes, the underlying's value date is not.
Exercise Type	Defines when the option can be exercised. The choices are American and European. The default is European.

- Digital Options (**Digital** and **Digital Option** sections):

Field	Description
Sign	Choices are <b>Sell</b> or <b>Buy</b> . The default is <b>Buy</b> .
Option Type	The choices are Call and Put. The default is Call.
Value Date	The expiry date plus the spot days. The value date is automatically populated when you select the Base or Quote Currency. By default, the value date is taken from the underlying. If the underlying's value date changes, the option's value date changes. The converse is not true; i.e. if the option's expiry changes, the underlying's value date is not.
Payout Amount	Amount to be paid. If the amount is in the base currency, it is an Asset or Nothing. If the Amount is in the quote currency, it is Cash or Nothing.
Payout Currency	Choices are Base or Quote Currency.
Exercise Type	Defines when the option can be exercised. The choices are American and European. The default is European.

- Digital or Vanilla Compound options (**Compound** section): Define the compound feature.

From a pricing perspective, the compound feature is similar to a Vanilla option, except that the underlying is an option on a given underlying.

---

**Note:** You must define some predefined option schedules to be used in the Barrier definition. See *TRM Instruments: Processing and Calculations Guide* for more information about Compound Options.

---

Field	Description
Option Type	The choices are <b>Call</b> and <b>Put</b> . The default is <b>Call</b> .
Expiry Date	The expiry date of the compound option.
Value Date	The value date of the compound option.
Strike Currency	The base or the quote currency of the trade.
Strike Type	The type of strike. Choices are: <b>Amount</b> , <b>Percentage</b> , or <b>Points</b> .
Strike Price	Only editable when you select Percentage or Points as <b>Strike Type</b> . Enter the relevant percentage or number of points. The Strike Amount is calculated automatically from the Base Amount.
Strike Amount	Only editable when you select <b>Amount</b> . Enter the amount.

- Digital or Vanilla Barrier Options (**Barrier** section): Define the following fields to make sure that the Barrier feature is taken into account.



Depending on the type of barrier, the Barrier feature acts as upper or lower boundary conditions for the pricing.

Field	Description
Kind	The choices are: <b>Up-In, Up-Out, Down-In, Down-Out, Knock-In, Knock-Out</b> . See <i>TRM Instruments: Processing and Calculations Guide</i> for more information.
Rebate Currency	The base or quote currency of the trade.
Rebate Type	The type of rebate. Choices are: <b>Amount, Percentage, or Points</b> .
Rebate Price	Only editable when you select <b>Percentage</b> or <b>Points</b> as Rebate Type. Enter the relevant percentage or number of points. The Rebate Amount is calculated automatically from the Base Amount.
Rebate Amount	Only editable when you select <b>Amount</b> as Rebate Type. Enter the amount.
Mon. Period Start	The start of the monitoring period at which the barrier is activated. The default is the opening date of the trade. Note: For a double barrier, both barriers share the same monitoring period.
Mon. Period End	The end of the monitoring period at which the barrier is activated. The default is the value date of the trade. Note: For a double barrier, both barriers share the same monitoring period.
Upper Level	The upper level of the barrier should be entered in the same way as required by the market convention of the currency pair.
Lower Level	The lower level of the barrier should be entered in the same way as required by the market convention of the currency pair.

**7.** When you have entered the trade parameters, you can do the following:

- Valuate and price the trade before saving it to TRM, see 23.2.1.5 *Valuating and pricing* on page 605.
- Save the trade to TRM by clicking **Save** or **Apply**. In the resulting dialog, enter the counterparty and portfolio. A transaction number is assigned to the strategy and the state is set to **Simulated** if you saved or **Open** if you applied.

**Hint:**

You can continue to work on the pricing in both **Simulated** and **Open** states, or move the transaction forward to the other states.

**23.2.1.4.2 Entering predefined strategies**

Depending on the market movements, you may want to apply predefined strategies like Call and Put Spread, Strangles and Straddles, and so on. When you apply a predefined strategy (risk reversal, butterfly, and so on) all underlying transactions of the strategy are assigned the same strategy main type, type, and ID.

**Note:** All strategies in the same package share the same currency pair and the same notional amount.

To enter predefined strategies:

1. Press **Ctrl+N**. You can choose from:

- **Call Spread:** The Bull Spread strategy involves buying an in-the-money call and sell and an out-of-the-money call with the same expiry date. In the case of a Bull Spread Call, the long Call has the lowest strike.

---

**Note:** The same strategy can be replicated with the usage of Puts due to the Call-Put parity.

---

- **Put Spread:** The Bear Spread involves the sell of a put and the purchase of a put with a higher strike. Because of the Call-Put parity, it is possible to build the pay-off by using other contracts.
- **Risk Reversal:** Risk Reversal is a Long Call and Short Put.
- **Straddle:** A call and put with the same strike.
- **Seagull:** The purchase of a call spread (two calls), financed by the sale of one out-of-the-money put (or vice versa), ideally to create a zero-premium structure.
- **Strangle:** Identical to Straddle except that the strike of the call and put are different.
- **Butterfly:** The purchase and sale of options with three different strikes. More concretely, buy one call with a lower strike; sell two calls with a middle strike, and buy one call with a higher strike.

2. Select the predefined strategy and enter the basic setup (these fields are common to all strategies) and the leg parameters (the number of legs varies according to the strategy):

Fields	Description
Opening Date	The opening date of the strategy. This is also the pricing date by default.
Base Currency	The base currency of the strategy.
Quote Currency	The quote currency of the strategy.
Base Amount	Absolute value of the base amount of the strategy
Expiry Date	The expiry date of the strategy.

3. Click **Select**.

A new row is added to the appropriate views and the **Trade Setup** view is populated with the parameters from the selected instrument.

4. In the **Transaction** view, select the strategy you just created and use the following options to complete the strategy in the **Trade Setup** view:

- **Call Spread (Bull Spread):** The following table shows the default settings and dependencies of the two legs.

Field	1st Leg	2nd Leg
Option Type	Call	Call
Sign	Buy	Sell
Base Amount	A	-A
Deal/Strike Rate	K1	K2
Quote Amount	-K1*A	K2*A
Expiry Date	Underlying Expiry Date	Underlying Expiry Date
Value Date	Underlying Value Date	Underlying Value Date

Field	1st Leg	2nd Leg
Exercise Type	European	European

- **Put Spread (Bear Spread):** The following table shows the default settings and dependencies of the two legs.

Field	1st Leg	2nd Leg
Option Type	Put	Put
Sign	Buy	Sell
Base Amount	A	-A
Deal/Strike Rate	K1 greater than K2	K2
Quote Amount	$-K1 * A$	$K2 * A$
Expiry Date	Underlying Expiry Date	Underlying Expiry Date
Value Date	Underlying Value Date	Underlying Value Date
Exercise Type	European	European

- **Risk Reversal:** The following table shows the default settings and dependencies of the two legs.

Field	1st Leg	2nd Leg
Option Type	Call	Put
Sign	Buy	Sell
Base Amount	A	A
Deal/Strike Rate	K1	K2
Quote Amount	$-K1 * A$	$K2 * A$
Expiry Date	Underlying Expiry Date	Underlying Expiry Date
Value Date	Value Date	Value Date
Exercise Type	European	European

- **Straddle:** The following table shows the default settings and dependencies of the two legs.

Field	1st Leg	2nd Leg
Option Type	Call	Put
Sign	Buy	Buy
Base Amount	A	A
Deal/Strike Rate	K1	K1
Quote Amount	$-K1 * A$	$-K1 * A$
Expiry Date	Underlying Expiry Date	Underlying Expiry Date
Value Date	Value Date	Value Date
Exercise Type	European	European

- **Seagull:** The following table shows the default settings and dependencies.

Field	1st Leg	2nd Leg	3rd Leg
Option Type	Call	Call	Put
Sign	Buy	Sell	Sell
Base Amount	A	-A	A
Deal/Strike Rate	K1	K2	K3
Quote Amount	-K1*A	K2*A	K3*A
Expiry Date	Underlying Expiry Date	Underlying Expiry date	Underlying Expiry Date
Value Date	Value Date	Value Date	Value Date
Exercise Type	European	European	European

- **Butterfly:** The following table shows the default settings and dependencies of the three different strikes.

Field	1st Leg	2nd Leg	3rd Leg	4th Leg
Option Type	Call	Call	Call	Call
Sign	Buy	Sell	Sell	Buy
Base Amount	A	A	A	A
Deal/Strike Rate	K1	K2	K2	K3
Quote Amount	-K1*A	-K2*A	-K2*A	-K3*A
Expiry Date	Underlying Expiry Date	Underlying Expiry date	Underlying Expiry Date	Underlying Expiry Date
Value Date	Value Date	Value Date	Value Date	Value Date
Exercise Type	European	European	European	European

- **Strangle:** The following table shows the default settings and dependencies of the two legs

Field	1st Leg	2nd Leg
Option Type	Call	Put
Sign	Buy	Buy
Base Amount	A	A
Deal/Strike Rate	K1	K2
Quote Amount	-K1*A	-K2*A
Expiry Date	Underlying Expiry Date	Underlying Expiry Date
Value Date	Value Date	Value Date
Exercise Type	European	European

**5.** When you have entered the strategy parameters, you can do the following:

- Valuate and price the strategy before saving it to TRM, see 23.2.1.5 *Valuating and pricing* on page 605.

- Save the strategy to TRM by clicking **Save** or **Apply**. In the resulting dialog, enter the counterparty and portfolio. A transaction number is assigned to the strategy and the state is set to **Simulated** if you saved or **Open** if you applied.

**Hint:**

You can continue to work on the pricing in both **Simulated** and **Open** states, or move the transaction forward to the other states.

### 23.2.1.5 Valuating and pricing

FX Pricing enables you to simulate pricing and valuation before booking the transaction to TRM. You can simulate the pricing settings, quotes, premium settings of a particular transaction or strategy.

The following table identifies the default valuation model (Pricer) per instrument type:

Instrument	Default Valuation Model
Vanilla Option European	<b>Symbolic Greek</b> - uses the exact Black Scholes formula to derive the Greeks.
Vanilla Option American Digital Option	<b>Finite Difference</b> - used to solve the Black Scholes partial differential equation numerically, applying barrier and terminal conditions relevant to the option.
Barrier Option	<b>Analytic</b> - uses the exact or approximation Black Scholes formula.

For more information about valuation models, see *TRM Instruments: Processing and Calculations Guide*.

#### 23.2.1.5.1 Defining the default pricing settings

You can define the pricing settings that you want to use by default when creating a new trade in the **Pricing Setup** view. These settings apply to all new trades and to trades that are in the **Pending** state, i.e. not yet booked to TRM.

When creating a new trade, the pricing settings default to the ones defined in the **Pricing Setup** view. In the trade, the default pricing settings appear between parentheses. However, you can overwrite these default settings at the trade/transaction level in the **Trade Setup** view. See 23.2.1.5.2 *Overwriting the default pricing settings* on page 606.

To set up default pricing:

1. In the **View** menu, select **Pricing Setup**, if not already visible.
2. In **Pricing Setup**, enter the following information:

Information	Description
Figure Scenario	The scenario used to store the market data. The default scenario is <b>FREEZE</b> .
Valuation Method	Method used to default/calculate forward figures (forward points) for FX forwards: <ul style="list-style-type: none"> <li>• <b>Quoted:</b> The FX spot rate and the forward points are taken from the market. The base currency interest rate is taken from the market from the yield curve defined for the currency (in Currency Editor's Journals page) on the spot date and the maturity date, and the quote currency interest rate is calculated from the FX forward points and the base currency interest rate. If the FX forward points are changed manually, the IR Rate Quote and Deal/Strike Rate columns are updated.</li> <li>• <b>Theoretical:</b> The FX spot rate, base currency interest rate, and the quote currency interest rate are taken from the market. Forward points are calculated from the FX spot rate of the deal and the discount factors in the base and quote currencies of the transaction. The forward points are updated if one of the following columns is changed: Nominal/Spot Rate, IR Rate Base, and IR Rate Quote.</li> </ul>

Information	Description
Figure Currency	The currency in which the figures are calculated. The default should be the currency of the trade.
Figure Date	The date at which the pricing is performed for the pending transaction.
Date Method	Choices are <b>At Date</b> or <b>At Spot</b> . The valuation discounts until Valuation Date or Spot Date respectively.

3. The changed default pricing settings apply to all non-booked trades, i.e. new trades and trades in state **Pending**.

### 23.2.1.5.2 Overwriting the default pricing settings

You can overwrite the default pricing at the transaction level in the **Trade Setup** view by editing the pricing fields. Default values appear between parentheses.

For information about the default pricing, see *23.2.1.5.1 Defining the default pricing settings* on page 605.

### 23.2.1.5.3 Modifying market quotes

You can view and modify the market quotes. Market quotes are visible in the **Quotes** view and provide a direct access to the same market feed as in Rate Monitor. In some cases, you may need to modify the market quotes. Modified quotes are displayed in bold. You can see the following pages in the **Quotes** view:

- **Swap Points** - FX term structure of the Base/Quote Currency pair
- **Volatility** - FX Volatility surface of the Base/Quote currency pair
- **Yield** - Base and Quote yield curves for each currency.

---

**Note:** Underlying quotes and money market future quotes used to calculate the base yield curve are displayed and can be modified.

---

To modify market quotes:

1. In the **Quotes** view, change the quote you want to simulate. All calculated data are computed.
2. The changed quote appears in **bold**.

**Hint:** To reset the quotes to their original values, click **Reload Quotes**.

---

### 23.2.1.5.4 Modifying derived market quotes

You can view and modify the derived market quotes. Derived quotes are displayed in the **Derived Market Info** section in the **Trade Setup** view. You can see the following figures in the **Derived Market Info** section:

Market Info	Description
Base Interest Rate	The continuous compound interest rate between the figure date and the settlement date interpolated using the base yield curve and the date basis of the base currency.
Quote Interest Rate	The continuous compound interest rate between the figure date and the settlement date interpolated using the quote yield curve and the date basis of the base currency.
FX Spot Rate	The FX spot rate between the base and the quote currency.
Swap Points	The swap points at the settlement date interpolated from the swap curve.

Market Info	Description
Implied Swap Points	The implied swap points calculated from the FX spot rate and adjusted by the interest rate difference.
Volatility	The at-the-money volatility between the figure date and the expiry date interpolated using the date basis of the base currency.

You can modify these quotes manually to simulate pricing using different values. When you modify the quotes manually, an asterisk is inserted in front of the name of the section (for example, **\*Derived Market Info**). You can reset any changes by clicking **Refresh/Reset Market Info**. The values revert back to the original market quotes.

**Important:** If you change the characteristics of the transactions (currencies, dates, and so on), the manually changed derived quotes are not kept, but are recalculated based on the market quotes.

#### 23.2.1.5.5 Monitoring key figures

You can monitor the key figures for a particular transaction in the **Key Figures** section. The key figures displayed in this view are identical to the ones used in TRM, except for the following key figures:

In FX Pricing	In TRM
Market Value	Price
Dual Delta	Strike Delta
Dual Gamma	Strike Gamma
Gamma Rho Asset	Asset Yield Gamma
Cash Rho	Cash Rho
Gamma Rho Cash	Cash Yield Gamma
Volga	Sigma Gamma
Vanna	Vega Speed
Charm	Delta Bleed
Color	Gamma Bleed

The key figures displayed in the **Key Figures** section that are expressed as an amount indicate to which currency the amount refers (base or quote) and the currency is displayed between parentheses. When the figure is expressed in the figure currency, the currency is not displayed between parentheses.

**Hint:**

To display the Greek key figures as a percentage, click **Select Columns...** and select the relevant figures that contain percent in the name for base and quote currencies. For example, Figure Base Percent Volga.

#### 23.2.1.5.6 Changing the preferred premium

You can select your preferred premium, currency, type (percentage, basis points, amount) based on the computed figures:

1. In the **Key Figures** section and select one of the following figures:
  - Market Value
  - Premium Amount Base or Quote

- Premium % Base or Quote
  - Premium bp Base or Quote
2. Click the arrow **Default Transaction premium with computed Transaction Figure** next to the figure you want to update.

The selected figures are updated in the **Premium** section with the computed values.

#### 23.2.1.5.7 Applying new figures to a given target

You can use the pricing solver in the **Key Figures** section to apply new figures to a given target for a single trade; or to define a target for each aggregate value, leg to be modified and trade parameter to be changed in order to reach the target for a strategy.

To apply new figures to a given target:

1. In **Key Figures** section, click **Solver** and enter the value you want to apply, click anywhere outside of the field you have just modified. A popup menu shows the available legs.
2. Select the leg on which you want to apply the new target and then select the variable: **Base Amount, Strike, or Volatility**.

FX Pricing computes the quotes, derived market quotes and displays the results in the **Solver Output** section.

---

**Hint:** To reset the changed values to the original values, click **Refresh Key Figures**.

---

#### 23.2.1.5.8 Charting

This view provides a graphic representation of the selected key figures according to the selected variable (Base Rate, Quote Rate, Spot, Strike/Deal Rate, ATM Volatility). ATM volatility for exotic features and strike rate for options.

---

**Note:** When Option Smile is set to **No** in the trading part and the variable **ATM Volatility** is used then any graph displays meaningful information.

---

To show key figures on the chart for a selected variable:

1. In the **Chart** view, click **Visual Settings**.
2. In the resulting dialog, do the following:
  - Select the key figures you want to show on the chart. The default key figure is Market Value.
  - Click the color box next to the key figure, select a particular color for that key figure, and click **OK**.
3. Click **Apply** to apply the changes without closing the dialog or **OK** to apply and close the dialog. The chart updates with the new settings.

---

**Hint:** The selected variable and key figures are shown immediately below the chart. To deselect key figures, click **Visual Settings** and clear the corresponding checkbox of the key figures you do not want to display in the chart.

---

#### 23.2.1.6 Processing transactions and strategies

This section describes the actions related to FX transactions generated in FX Pricing. For more information about these actions in TRM, see *TRM Instruments: Calculations and Processing Guide*.

##### 23.2.1.6.1 Early expiration

You can fully early expire transactions and strategies in FX Pricing.

- Execution



Right-click the transaction or strategy you want to early expire and select **Early Expiration**. The action is processed immediately.

The early expiration generates offsetting (duplicate reverse) transactions as follows:

- For strategies: These offset transactions are given the same strategy type, but are assigned a new strategy ID. You can perform pricing of the offsetting strategies as you can a new strategy by selecting one of the early expired transaction and by loading the underlying transactions and pricing strategy.
  - For transactions: These offsetting (duplicate reverse) transactions defaults to the counterparty of the parent transaction and the nominal amount of the original transaction.
- Cancellation  
To cancel this action, select the generated offset transactions, and click **Cancel**.

#### 23.2.1.6.2 Exercise/no exercise

- Execution

You can exercise an option either manually in TRM or automatically by using an activity as follows:

- To manually exercise an option in TRM: Open the transaction in Transaction Lookup from FX Pricing, right-click the transaction, and select **Exercise/No Exercise**.
- To automatically exercise an option or no exercise on every underlying transaction of a strategy, run the activity **Activity FX Option Strategy Exercise**. For more information about this activity, see *A.41 FX Option Strategy Exercise* on page 644.

---

**Note:** The default delivery type of the exercise at the strategy level is cash settlement.

---

#### 23.2.1.6.3 Split Strategy

---

**Note:** This action is only available for strategies.

---

You might be required to split strategies in order to process them as individual transactions, i.e. remove the strategy type and ID.

- Execution

Right-click the strategy ID you want to split and select **Split Strategy**. The action is processed immediately.

The strategy/package type or strategy/package ID is removed from the split transactions.

23 Pricing IR and FX trades  
23.2 Pricing FX trades

## 24.1 Overview

The Dashboard application accesses information that comes from the entire Wallstreet Suite and displays a summarized version within a window with multiple views. The Dashboard enables you to view data in a concise and consistent manner and allows you to configure views by providing a wide range of powerful features such as pivot tables, filters, styles, and charts. These features are easily applied using an intuitive drag-and-drop approach.

The Dashboard has two main views; the Data view which displays data in the form of a pivot table, a chart, or both, and the Designer view which contains the functions that are used to configure the data: Styles, aggregates, filters, and so on.

Information presented in Data views can be refreshed manually or automatically at a configurable frequency. You can easily undo and redo your actions, and you can save the Dashboard window (with all its configured views) as a named layout to reuse at a later date.

### 24.1.1 Pivot tables

Pivot tables are displayed in the Data view. You can modify a pivot table by rearranging the underlying fields (e.g. changing a column axis to a row axis, changing a figure to a column or row axis or vice versa) or by adding and dropping fields from the palette in the Designer into the Data view. The pivot table is adjusted and recalculated on-the-fly.

A pivot table can be enhanced with styles, microcharts and aggregates, and the source data can also be filtered:

- **Styles:**

Using the various styles it is possible to:

- Change the font type, font color and background color.
- Highlight specific values within a range of values (such as minimum and maximum values).
- Add a gradient background or bar-chart to values to highlight the relative magnitude of the value.
- Apply rounding and abbreviations to numbers.

Styles are applied by dragging and dropping the style onto the target area.

- **Microcharts:**

Microcharts are cell entities which enable you to graphically represent values in specific rows or columns. Microcharts can be used to highlight trends or exceptions and can be applied by dragging and dropping the microchart onto the relevant row or column.

- **Aggregates:**

Aggregates are used to perform simple operations such as sum and count operations.

Aggregates are applied by drag-and-drop, where the drop is done on the relevant row or column grouping. The result is displayed in a row or column that is appended to the specific grouping.

Aggregates are used in two different places:

- When you remove (or collapse) a detailed axis (row and column) grouping inside the pivot table, the underlying figures are aggregated.

- When you add an aggregated row or column to specific axes (e.g. show sums for all items in the underlying axis).

Both methods offer the same set of mathematical functions: sum, count, minimum, maximum, average, and median.

- Filters:

The Dashboard allows you to construct filters in order to filter the source data. Filters can be marked as favorites and used quickly in the Data view. Filtering can be set up in the following two ways:

- By right-mouse click from the relevant axis value in the pivot table and either including or excluding the value in the filter.
- By entering the filter in the **Filter** section of the Designer.

For simple filters the first option is more efficient. More advanced filtering can be achieved through the second method which is described in more detail below. Active filters are always shown in the Designer's filter section regardless of where they are created. In addition, filters are always shown in the Data view information bar where they are visible even if the Designer is hidden.

## 24.1.2 Charts

In addition to pivot tables, it is also possible to display the data as a chart. Supported chart types include pie, line and bar charts.

## 24.1.3 Data sources

Data sources can be set up before starting the Dashboard or can be configured in the Dashboard using the Wizard. By default, data sources are named according to the selected source. Data sources are displayed in the Data view of the Dashboard.

The following data sources are supported:

- Cash Management Reports - provides data similar to that found in the Cash Position, Cash Transaction and Bank Transaction reports.
- Limits - provides data on limit violations.
- Report Generator - provides data available from any report configured in Report Generator. You first need to create the report to be able to use it as a data source.
- Treasury Position - provides computed figures similar to those found in the Treasury Monitor.

See *24.3 Data source details* on page 624 for specific information about the data sources.

## 24.2 Getting started with the Dashboard

This section describes the Dashboard window and provides some information on how to navigate within the window.

When you first open the Dashboard, you can see two views: a Data view and a Designer view. The Data view displays an icon for each available data source (e.g. Cash Management, Limits, Report Generator, Treasury Position and so on).

Before you select a data source, the Designer contains a single tool for creating new Data views. For more information about creating Data views, see *TRM System Admin Guide*. Once you have selected a data source, the Designer displays a set of configuration tools which you can use to change the properties of the active Data view.

## 24.2.1 Input Parameters

It is possible to configure the data source from within the Dashboard application. Configuring the data source is done using a simple Wizard which allows you to either select an existing configuration or to specify parameters.

---

**Note:** In some cases, you can modify the input parameters of an existing Data view by clicking on the **Open Wizard** icon in the Data view toolbar.

---

To specify input parameters:

1. Open the data source from the Data view.
2. Customize the data source by selecting input parameters from the drop-down selection lists in the Wizard and clicking OK.

For the Treasury Position and Report input parameters, you can enter relative dates in the date fields, such as **t** for today, **sm** for start of month, **em** for end of month, etc. When a relative date is entered, it is immediately translated into the absolute date and both the symbolic expression and the evaluated date are shown. When you save the layout, the relative date gets stored and when you reload the layout in the future the expression gets translated again.

The following symbols are recognized:

- **t** for today
- **sw** for week start
- **ew** for week end
- **sm** for month start
- **em** for month en
- **sq** for quarter start
- **eq** for quarter end
- **se** for year start
- **ey** for year end

Example assuming that the current date is 29-September-2010:

```
sm = 1-September-2010
t = 29-September-2010
ey = 31-December-2010
```

---

**Note:** These symbols are not case sensitive.

---

It is possible to enter basic expressions in all date fields. The following symbols can be used:

- **d** for day
- **m** for month
- **y** for year
- **+** for plus
- **-** for minus.

Example assuming that the current date is 29-September-2010:

```
sm+1m = 1-October-2010
+1d = t+1d = 30-September-2010
```

ey-1y = 31-December-2010

em-1m = 30-August-2010

---

**Note:** These symbols are not case sensitive.

---

---

**Note:** Parameters marked in red with a star are mandatory. The OK button is enabled only if all mandatory fields are specified.

---

### 24.2.1.1 Cash Management Reports

Cash Management reports consist of three separate types of report which you can select from the Dashboard Wizard:

- Cash Position
- Cash Transaction
- Bank Transaction

Once you have selected the report type, you can select a specific report from a list of reports. You can then either use the default settings or configure the report by selecting input parameters from the drop-down selection lists in the Wizard.

---

**Note:** The configuration of Cash Management Data views can be modified by accessing the Wizard from the Data view toolbar.

---

### 24.2.1.2 Limits

When you open the Limits data source, you need to configure the data source by specifying input parameters from the drop-down selection lists in the Wizard. For example, you can specify the **Book** and **Page**, **Client Name**, **Client Parameters** and **Sublimit Output**. For information on limits, see *Chapter 16 Managing limits* on page 447.

### 24.2.1.3 Report Generator

You can open the saved Report Generator reports in the Dashboard using the Wizard in one of two ways: you can either use the default configuration or customize the report by selecting input parameters from the drop-down selection lists. Available parameters depend on the report type.

### 24.2.1.4 Treasury Positions

Treasury Positions are provided in two separate modes: the Wizard allows you to either select pre-computed treasury positions which are taken from a running tmd process or to configure a custom position. Pre-computed treasury positions can be selected from the list of saved Treasury Monitor positions.

---

**Note:** Pre-computed treasury positions can be selected in the Dashboard only if a tmd process has been explicitly started with the underlying position: in order to make the treasury position available in the Dashboard, the treasury position must be saved and a tmd process must first be started for the specific position.

---

Custom treasury positions can be configured using a set of available input parameters that are provided in drop-down selection lists.

For a description of each parameter see *12.1.4 Monitoring positions in Treasury Monitor* on page 366.

---

**Note:** The Data view for pre-computed treasury positions cannot be modified using the Wizard.

---

## 24.2.2 Menus and buttons

Menu / Button	Description
File - Preferences	Configure the Dashboard, for example, the <b>Refresh Interval</b> .
File - Exit	Close the Dashboard.
View - New	Display a new Data view, which contains the available data sources.
View - Designer	Display the Designer. There is always only one Designer in the application at one time. The Designer is used to set up the active Data view.
View - (list of data views)	All available Data views, for example, Cash Position, Treasury Position, and so on. The Data view can display data as a pivot table, chart, or both.
View - Administration View	Log View, Progress View, Service Statistics, and System Messages.
View - Duplicate Dashboard View	Make a copy of the original Dashboard view including all configuration and data. The copy will be positioned alongside the original view.
Command	Refresh static data.
Refresh All (button only)	Refresh data manually.
Toggle Automatic Refresh All (button only)	Switch automatic refresh on or off according to the specified <b>Refresh Interval</b> set in the <b>Preferences</b> dialog.
Layout - Set to Default	Define the active layout as the default layout.
Layout - Save and Save As	It is possible to save a layout of the whole window including all configured views. The layout also contains the setup of configured data sources, fields, styles, filters, and so on.  The menu options/buttons allow you to save changes to the active layout or to create a new layout from an existing one. You can save layouts for a specific user or for a group of users. You can then re-use these layouts whenever you use the Dashboard or even use them as part of the application startup parameter.
Layout - Layout Properties	Display the name, owner, and user of the active layout.
Layout - Delete	Delete the active layout.
Export to Excel	Available from the drop-down menu.  Export all Data views to Microsoft Excel. The generated spreadsheet preserves the style of all cells in the pivot table and displays the chart as a bitmap image. A summary of the underlying source data parameters and any active filters are also exported.  Note: Microcharts and bar charts which overlay table cells are not supported at this time.
Save Excel Workbook	Available from the drop-down menu.  Save all Data views to Microsoft Excel.
Print	Print all Data views to the printer. For best results, multiple views should be printed individually rather than all at once. For better control over the print area of the underlying pivot tables, you can export multiple views to an Excel spreadsheet before printing.
Print Screen	Available from the <b>Print on Printer's</b> drop-down menu.  Print all Data views to the printer.
Save Screen	Available from the <b>Print on Printer's</b> drop-down menu.  Save all Data views as an individual image file (e.g. .bmp, .png, .jpg).
Screen to Clipboard	Available from the <b>Print on Printer's</b> drop-down menu.  Save all Data views (as an individual image) to the clipboard.

### 24.2.3 Shortcuts

You can display a list of shortcuts by pressing **Ctrl+Shift+L**.

To ...	Press ...
Close the active view.	Ctrl+W
Close all views.	Ctrl+Shift+W
Copy selected data.	Ctrl+C
Cut selected data to the clipboard.	Ctrl+X
Delete selected data.	Delete
Maximize the active view.	Ctrl+M
Switch to the next view. Hold down the <b>Ctrl</b> key, press <b>F7</b> as required to select the view from the list.	Ctrl+F7
Switch to the previous view. If more than three Data views are open, then the Shift key allows you to cycle through the views in the opposite direction.	Ctrl+Shift+F7
To paste text in the text fields in the Designer and other dialogs that offer text input (such as the Filter Editor).	Ctrl+V
Refresh static data.	F5
Select all cells in the pivot table.	Ctrl+A

### 24.2.4 Data view

The Data view displays the data from the data source as a pivot table, chart, or both. By default, Data views are named according to the selected data source with an added sequential suffix. You can change the name of the Data view in the **View** section of the Designer or by selecting the appropriate item in the drop-down menu in the Data view toolbar. The active Data view is highlighted with a red border.

There are several intuitive ways to organize the data in the pivot table:

To ...	Then ...
Move a Data view to the right or left side of the Dashboard window	Drag the Data view header to the right/left edge of the window - the Data view is placed on the specific side and the remaining views are pushed in the opposite direction to make space.
Place multiple Data views in tabs	Drag the Data view header into the header of another view - the data views are placed in tabs.
Detach the Data view from the Dashboard window	<ul style="list-style-type: none"> <li>• Drag the Data view header outside of the main window - the data view detaches from the main window.</li> <li>• Right-click on the Data view tab and select <b>Detached</b> or <b>Fully Detached</b>.</li> </ul> <p>The Fully Detached view is completely independent of the parent window whereas the Detached view is still part of the parent suite. For example, when the parent is minimized, the Detached window is also hidden. A Fully Detached window does not get minimized in this case.</p>
Re-attach a detached Data view	Right-click on the Data view tab and deselect Detached or Fully Detached
Hide the Designer	Click on the minimize button in the Designer.



To ...	Then ...
Drag and drop fields from the Designer	Drag and drop fields from the Designer into the configured pivot table at the relevant place. To help you to drop the field in the correct place, a blue line appears to indicate where the field will be placed in the pivot table; a green line indicates that the field will become a figure.
Drag and drop fields within the Data view	Drag axes and figures from the Data view and drop them into another relevant place in the Data view.
Remove fields from the Data view	Drag and drop fields back into the Designer or drop the field into the bin which automatically appears in the bottom right corner of the Data view.
Select figures	Select figures in the pivot table by right-clicking anywhere in the table and selecting <b>Select Figures</b> .
Drag and drop figures	Drag and drop individual figures. To reposition a whole figure axis, hold the control key when dragging (shown as a tooltip in the application).

#### 24.2.4.1 Data View toolbar

The Data view toolbar is located at the same level as the view tabs.

Menu	Description
Undo	Undo an action.
Redo	Redo an action.
Choose Table/Chart Layout	Choose whether to display a pivot table, chart or both in the active view. When both are displayed, the subviews are automatically selected. You can display the subviews horizontally or vertically.  Note: When the Data view contains a pivot table and a chart, the Dashboard restricts the configuration of the X and Z axes to only those axes which are present in the pivot table. This restriction is necessary in order to maintain the integrity of the derived data between the table and the chart. The Dashboard automatically checks for consistency between the data displayed in the pivot table and the chart, and if a mismatch is detected it replaces the chart with a warning message. You can then either add the missing axis to the pivot table or remove the extra axis from the chart.
Reset Table Layout	Reset the table to the original state in which it was presented when the data source was initially opened.
Refresh	Refresh data manually.
Toggle figure aggregation in Pivot Table	Switch on or off figure aggregation. Default is off. When on, row and column groupings are removed from the pivot table and the data is automatically aggregated using the relevant function. When off, figures are expanded by source lines with no aggregation. This toggle is on by default.
Open Wizard	Open the Dashboard Wizard from which you can change the input parameters of the data source.

Menu	Description
Export to Excel	<p>Available from the drop-down menu</p> <p>Export the selected Data view to Microsoft Excel. The generated spreadsheet preserves the style of all cells in the pivot table and displays charts as bitmap images. A summary of the underlying source data parameters and any active filters are also exported.</p> <p>Note: Microcharts and bar charts which overlay table cells are not supported at this time.</p> <p>Note: It is possible to export to Excel using the <b>Dashboard Excel Export</b> activity. In this way, the export is triggered automatically by the activity and you do not need to open the Dashboard. See <i>A.18 Dashboard Excel Export</i> on page 633 for more information.</p>
Save Excel Workbook	<p>Available from the drop-down menu.</p> <p>Save the selected Data view to Microsoft Excel.</p>
Print	Print the selected Data view to the printer.
Print View	<p>Available from the <b>Print on Printer's</b> drop-down menu.</p> <p>Print the selected Data view to the printer.</p>
Save View	<p>Available from the <b>Print on Printer's</b> drop-down menu.</p> <p>Save the selected Data view as an individual image (e.g. .bmp, .png, .jpg).</p>
View to Clipboard	<p>Available from the <b>Print on Printer's</b> drop-down menu.</p> <p>Save the selected Data view (as an individual image) to the clipboard.</p>
Rename Dashboard View	<p>Available from the drop-down menu.</p> <p>Rename the active view.</p> <p>You can also rename the active view in the <b>View</b> section of the Designer.</p>

### 24.2.4.2 Filter toolbar

The filter toolbar is located immediately beneath the Data view toolbar.

Menu	Description
Clear Filter	Remove the applied filter.
Add as Favorite	<p>Add the current filter to the list of favorite filters, which is shown in the Filter bar.</p> <p>Note: Filters are created in the Designer.</p>
Favorite Filters	<p>Apply one of the favorite filters.</p> <p>Filters marked as favorites are shown as icons. When clicked the filter is applied. Filters can be removed the favorites by right-clicking the filter's icon and removing it.</p>
Pin / Unpin	<p>Pin or unpin the Filter toolbar.</p> <p>When you unpin the toolbar, it is displayed as an expandable bar at the top, middle of the view. Click to expand the toolbar and access the options.</p>

### 24.2.4.3 Information bar

The information bar is located at the top of the Data view and shows information related to the data source, such as the name of the data source, time of the latest update, the applied filter, and so on. Information about the data source input parameters is only summarized when the number of underlying parameter settings is large. Detailed information is presented in a floating box when you hover the mouse pointer over the incomplete parameter list.

#### 24.2.4.4 Right-click menu

The following items are available when you right-click in the Data view:

Menu	Description
Sorting	<p>Data is automatically sorted in the pivot table in ascending order according to the rows and columns. Sorting is performed according to the data type. Sorting can be customized from two places:</p> <ul style="list-style-type: none"> <li>• Right mouse-click on the relevant field in the Fields section of the Designer.</li> <li>• Right mouse-click on the relevant field header in the Data view.</li> </ul> <p>A contextual menu with the following options is displayed:</p> <ul style="list-style-type: none"> <li>• <b>Sort Ascending</b> - set to ascending.</li> <li>• <b>Sort Descending</b> - set to descending.</li> <li>• <b>Reset Sorting to Default</b> - remove previous sort customizations.</li> <li>• <b>Advanced Sorting</b> - opens a dialog which allows you to specify another field to be used for sorting. For example, the Treasury position source can contain fields representing different gaps (1W, 1Y, 3M, O/N etc.) for which standard sorting cannot be used. It is however possible to specify another field to provide a basis for temporal sorting. The link between these two fields can be specified in the Advanced Sorting dialog.</li> </ul>
Set filter	Exclude all values other than the selected value from the pivot table.
Filter Out	Exclude the value from the pivot table.
Clear Styles and Formats	Remove all styles and formats.
Set Number Format	<p><b>Decimal Places</b>- allows you to set the number of decimal places for value. By default it displays the precision provided by the data source.</p> <p><b>Abbreviate To</b>- allows you to set the magnitude of the figure - K (thousands), M (millions), B (billions).</p>
Set Aggregate	Aggregate the selected row or column.
Aggregation Criteria	<p>To support more advanced aggregations needed for certain data sources, it is possible to set-up aggregation criteria in a specific dialog which is accessible by a right-mouse click on the figure header. The Aggregation Criteria setup offers the following choices:</p> <ul style="list-style-type: none"> <li>• <b>Don't aggregate</b> - aggregate functionality is not provided if there is more than one value in the group. If there is only one value, the functionality is provided.</li> <li>• <b>Aggregate only within the same values of a certain field</b> - example: select the Currency field if the figure can be expressed in different Local Amounts. The application will provide aggregate amounts only if all values have the same currency units, otherwise the aggregates will be empty. Note that some data sources provide a basic default setup which automates the above configuration.</li> </ul>
Remove	Remove selected row or column.
Drill down value Drill down row Drill down column	<p>If aggregations have been applied within the pivot table, it is possible to drill-down to rows, columns or values to reach the lowest level in the Dashboard source data. This is possible on the row, column or figure via the right mouse-click menu. After selecting this option together with the axis to be expanded, a filter is applied and the selected axis is added to show figures in more detail. The back button restores the original Data view. In addition to drill-down it is also possible to display details for the selected area by applying a <b>Filter Only</b> option from the right click menu.</p>
Select Figures	Specify the fields to add to or remove from the pivot table.
Insert Source Tools	Insert aggregates which are pre-computed at the source. The data provided by certain sources includes aggregates across some groupings. These aggregates cannot be computed by the Dashboard, but the application can display them whenever it is possible.

Menu	Description
Transpose Table	Changes the display of the columns and rows: the columns become rows and the rows become columns.
Reset Table Size	Set the table rows and columns to the default width and height.
Copy Table	Copy table to clipboard.
Copy selected figure	Copy selected figure to clipboard.

### 24.2.4.5 Configuring charts

To display data in the form of a chart:

1. Select Chart Layout from the Data view toolbar. You can select to view a chart on its own, or a chart with a table.
2. Drag and drop the relevant fields into the chart axes that are hidden inside an expandable tab at the bottom of the chart view. There are three axes. The axes become automatically visible when the mouse pointer hovers over the expandable tab. They can also be pinned into place by the pin icon in the upper right hand corner of the axis tab.
3. Use the tools in the Designer to configure your chart. See *24.2.5 The Designer* on page 620 for more information.

## 24.2.5 The Designer

There is always only one Designer in the application. The Designer is used to configure the currently active data view. When you have finished configuring the Data view, you can minimize the Designer to have more space for the Data view.

**Hint:** To restore the Designer, click **Restore** or select the view in the **View** menu.

The Designer is separated into the following sections. Each section is dedicated to a specific configuration:

### 24.2.5.1 Fields

The Designer contains all of the fields coming from the data source. You can drag and drop the fields into the pivot table to change column and row grouping or figures. When you drag and drop fields, a blue line indicates where you will drop the field; likewise, a green line indicates that the field will become a column.

### 24.2.5.2 View

The **View** section of the Designer allows you to assign a name to or rename the active Data view.

### 24.2.5.3 Chart

The **Chart** section of the Designer allows you to assign a title to the chart and choose the type of chart (pie, line and bar charts). The following controls are available for pie charts:

- **Minimum Slice and Percent:** Define the minimum slice as a percentage or an absolute value (default).
- **Number Precision** to adjust the precision of the numeric labels on charts and **Abbreviate** to set the magnitude of the figure to thousands (K), millions (M) or billions (B).
- **Highlighting:** To highlight trends or exceptions.
- **2D with Depth:** Toggle to add depth to the chart's appearance.
- **Shuffle Colors:** With each click a different color is applied to the chart.

The following controls are available for line charts:

- **Number Precision** to adjust the precision of the numeric labels on charts and **Abbreviate** to set the magnitude of the figure to thousands (K), millions (M) or billions (B).
- **X Label Angle**: To rotate the angle of the X-axis label.
- **Line Thickness**: To set the thickness of the chart's line.
- **Smoothing**: To smooth the straight line into a curved one.
- **Highlighting**: Use to highlight trends or exceptions.
- **Flip Axes**: To change around the X and Y axes.

The above controls are available for bar charts, although instead of changing the line's thickness you can change the bar shape.

#### 24.2.5.4 $\mu$ Charts (Microcharts)

The  $\mu$ Charts section of the Designer allows you to highlight trends or exceptions. You can apply the different types of microcharts by dragging-and-dropping in a similar way to aggregation rows and columns.

#### 24.2.5.5 Styles and Formats

The **Styles and Formats** section of the Designer allows you to change and improve visual settings for relevant columns, rows, aggregations or figures. You can use the palette of styles that can be applied by dragging the style from the Designer and dropping it onto the relevant area of the Pivot Table, for example, either to a figure column or an aggregation row.

The available styles are:

- **Text style**: Select bold, italic, underline.
- **Text color**: Select text color.
- **Background color**: Select the background color.
- **Min/Max**: Apply the selected color to a minimum or maximum based on the magnitude figure. It is applied across the whole row or column.
- **Gradient**: Apply gradients of the selected color based on the relative magnitude of the underlying figure. Apply the gradient across the whole row or column and/or separately for positive and negative values.
- **Bars**: Apply bars behind the selected figure based on its relative magnitude. You can apply bars across the whole row or column and/or separately for positive and negative values (different color), or only positive or negatives values.
- **Number precision**: Set the number of decimal places. The default is the precision provided by the data source.
- **Number abbreviation**: Set the magnitude of the figure - K (thousands), M (millions), B (billions).

---

**Note:** To remove styles and formats you need to right-click in the Data view and select **Clear Styles and Formats**.

---

##### 24.2.5.5.1 Custom styles

It is possible to define your own style with the font, foreground color and background color of your choice. To create a custom style:

1. In the **Styles and Formats** section of the Designer, right-click on an existing style or format and select **Duplicate Style**.
2. Enter a name for the new style and then specify the font type, foreground and background color. Click OK. The style will appear at the bottom of the **Styles and Formats** section.
3. You can then drag and drop the style onto the relevant place in the pivot table.

### 24.2.5.5.2 Conditional styles

Styles can be applied conditionally, where the condition is specified using a favorite filter. To apply a conditional style:

- Create the appropriate filter and add it to favorites, see *24.2.5.7 Filter* on page 623 for more information.
- Select the filter from the drop-down list at the top of the **Styles and Formats** section. The filter's presence is indicated by an icon which overlays all applicable styles.
- You can then drag and drop the conditional styles onto the relevant place in the pivot table.

---

**Note:** To remove the filter, click on the **Clear** button next to the drop-down list at the top of the section.

---

### 24.2.5.5.3 Right-click menu

Right-clicking on any style or format in the Designer opens a menu with the following options:

- **Apply Style to All Figures.**
- **Apply Style to All Aggregates.**
- **Duplicate Style.** Used to create your own custom style, see *24.2.5.5.1 Custom styles* on page 621.

In the case where the underlying style or format is not applicable, the menu items are shown in an inactive state.

Custom styles have the following two additional items in the menu:

- **Edit:** Used to edit the custom style, see *24.2.5.5.1 Custom styles* on page 621.
- **Remove:** Used to remove the custom style, see *24.2.5.5.1 Custom styles* on page 621.

### 24.2.5.6 Aggregates

The **Aggregates** section of the Designer allows you to aggregate data in the Data view. Aggregation functions include **Sum**, **Count**, **Min**, **Max**, **Average**, **Median**, and **Source Total**. By default the **Sum** function is used and automatic aggregation is enabled. The function can be changed from within the right-click menu on the underlying field header in the Data view. Automatic aggregation can be switched off in the Data view toolbar. In this case figures are not aggregated and are shown in the detail provided by the data source.

Aggregation rows and columns can be added by dragging and dropping the relevant function from the Designer into the relevant level in the row or column headers. The level for totaling is shown as a blue rectangle that surrounds the relevant grouping, and the place where the new aggregated rows or columns will be inserted is indicated by a green line. At the top level axis, the field label is divided into two sections which determine whether the aggregation will be applied at the underlying level or above. In the latter case the function is applied across the entire pivot table.

When a table axis contains figures and an axis grouping which breaks down the figures into subcategories, the aggregation over the axis grouping can be applied to either figure or to both figures. Dropping the desired aggregation function onto the axis grouping brings up a menu listing all figures to which the aggregation can be applied.

Aggregation rows and columns are removed by dragging and dropping the row or column outside of the pivot table or to the trash can in the bottom-right corner.

The **Source Total** aggregation function allows the Dashboard to display pre-computed aggregates that are taken from the data source. These aggregates provide a summary of the underlying data for a given grouping. The values provided by the Source Total cannot be updated by the Dashboard, and in general the values are valid only if the composition of the grouping does not change. For example, if a filter is applied that affects the composition of the underlying Source Total grouping, the displayed Source Total is no longer correct. The Dashboard does have a built in mechanism to check data validity and will not display potentially erroneous figures.

### 24.2.5.7 Filter

The **Filter** section of the Designer presents a list of active filter conditions, where each entry is characterized by a pair consisting of a **Field** and the **Filter** expression.

To create a filter:

1. Enter the field either by typing its name, by double-clicking the **Field** cell and then selecting the field from the selection list, or by dragging and dropping the field into the entry cell.
2. Enter the filter expression. The filter expression can be typed in manually using a specific syntax or it can be created by a Filter Editor which is accessed by double-clicking the **Filter** cell. A summary of the syntax is provided in the table below:

Function	Syntax	Examples
wildcard	*?	*UK* - filter out rows with string "UK" in the field.
range	[min]:[max]	-1000:1000 - include rows with values between -1000 and +1000 0: - show rows with values greater than or equal to 0.
negation	!expression	! -1000:1000 - exclude rows with values between -1000 and +1000 (interval limits included).
combining	;	:-1000; 1000: - exclude rows with values between -1000 and +1000 (interval limits excluded).
strict inequality	<, >	>0 filters values greater than 0. Note: When defining the filter, the syntax for open ranges is automatically converted into the inequalities syntax. For example, when you type ":0" this will appear as "<=0".
inequality	>=, <=	>=0 filters values greater than or equal to 0. Note: When defining the filter, the syntax for open ranges is automatically converted into the inequalities syntax. For example, when you type ":0" this will appear as "<=0".

You can filter out single or multiple values, patterns and ranges. You can filter the data by percentiles or quantiles which are specified either as percentages or integer rankings (providing the possibility to create a filter that selects or eliminates the minimum/maximum values).

The Filter Editor can offer a range of values in selection lists. For example, if you filter by a specific column such as "Account Name", the Filter Editor presents a list of all valid account names.

3. To create a favorite filter, click on the **Add as Favorite** icon and add a name for the filter. The filter can now be selected in the **Styles and Formats** section.

The filter distinguishes between source data and derived data. The source data are the underlying raw data taken from the specified source. A specific configuration of the pivot table, which is based on user-selected groupings and aggregation functions, leads to the computation of derived data. The derived data are the data that are visible in the pivot table. When using filters it is also important to differentiate between the table axes (labels of what is being presented) and the figures:

- For filters on axes, it is irrelevant whether they are applied to the source data or derived data. By default the Dashboard applies filters on the dimensions at source level.
- For filters on figures, the level at which the filter is applied is important. By default, filters of figures are applied to the derived data, but you can override this behavior. Any modifications to the pivot table automatically reapply the filter to the new derived figures. A checkbox labelled with the letter "S" (which stands for "source"), allows you to set the filtering to the underlying source data.

## 24.3 Data source details

### 24.3.1 Cash management reports

Many of the defined cash management reports with saved criteria can be used as dashboard data sources. Three types of reports are supported: Cash Position, Cash Transaction and Bank Transaction.

#### 24.3.1.1 Cash Position Report

The Cash Position Report offers access to cash position information including forecasts. The following Cash Position specifics should however be taken into account:

- Reports should be configured without the Report Mapping - Report as Component (in Format) option to prevent putting balances and report groups in the same axis.
- Total lines provided by the Cash Position are ignored; the Dashboard processes only the lowest level raw data.
- Since the report returns Opening Balance, Movements (categorized by Report Groups) and Closing Balance, the aggregation of these values and graphing would be distorted. For this reason it is suggested to filter out Closing Balance in the Dashboard (using the built-in filtering feature) and to insert a sum aggregation instead. This ensures that Closing Balance values are shown in the aggregation row and graphing will take into account the correct figures.
- To preserve the sort order of Opening Balance and then that of Movements by Report Group, several additional sorting fields are automatically created and assigned to the relevant fields (Type, Report Group). No user configuration is needed; the Advanced Sorting feature is set automatically. This behavior is applied analogously to the forecast value date in the case of time buckets - the Dashboard will present time bucket names (as July-09) but will automatically link forecast values to the correct date sort order.
- Some figures cannot be aggregated across the board in a simple manner. For example, the Current Available figure in EUR cannot be summed with Current Available in USD. To address this, the Dashboard includes an advanced feature called Aggregation Criteria which allows you to specify another field as the one that will determine the aggregation (in this case Currency). The Dashboard defaults to the relevant Aggregation Criteria for certain cases. The default can also be set manually provided that the other field is part of the data source output.
- In the Cash Position Report it is possible to specify a standard expression for the date type parameters. This feature makes it possible to reuse existing layouts for the most recent day without changing/saving start-up parameters (see the WebSuite documentation for more details).

#### 24.3.1.2 Cash Transaction Report

The Cash Transaction Report provides either detailed or summary information regarding expected or instructed activity.

#### 24.3.1.3 Bank Transaction Report

The Bank Transaction Report provides either detailed or summary information regarding all bank-reported activity.

### 24.3.2 Limits

The Limits data source allows you to monitor pre-defined limits which are available through the standard limitd process. Each Data view can display a single limits page. When the Limits data source is selected, the aggregation feature in the pivot table is automatically enabled, but aggregation across higher-level dimensions is not performed. For groupings without pre-computed aggregates, the Dashboard behaves in the same way as Limit Monitor. The absence of aggregates is indicated by "N/A" in the appropriate cell.



### 24.3.3 Report Generator

The Report Generator layout with saved parameters can be used as dashboard data source. The Report Generator offers access to a very wide range of data which can be further adjusted by defining additional calculated columns.

To make the data available to the Dashboard the following steps should be performed:

1. Create the desired report in the Report Generator, including start-up parameters.
2. Save the report with the option "Save current report query parameters".
3. Put the layout file in the appropriate directory on the relevant server.

See the *TRM System Administration Guide* for more information.

There are certain aspects of the Report Generator data source which should be taken into account:

- Row ID is added as the last grouping axis (it can easily be removed if not desired). This ensures that the Dashboard presents the data with the same granularity as the Report Generator.
- Total lines provided by the Report Generator are ignored; the Dashboard processes only the lowest level raw data.
- The "Hide Details" feature of the Report Generator cannot be used since the total rows are ignored i.e. if the Dashboard does not receive any rows.
- For aggregations and sorting there is a similar requirement as in `tmd` (straight forward sums not always applicable). However, since reports are completely custom made, the relevant set-up should be done in the Dashboard (e.g. linking Currency as Aggregation Criteria to Market Value Local). Similarly, the advanced sorting - sorting field should be defined in Report Generator and then attached to the source field via the Advanced Sorting feature.
- The Report Generator date parameter can be set to "Today" to enable reuse of existing layouts for the most recent day without having to change/save the start-up parameters.

### 24.3.4 Treasury Position

Treasury Position uses `tmd` (Treasury Monitor Daemon) as the data source. `tmd` is a server process that provides output related to the Treasury Monitor. For more information see *TRM System Administration Guide*.

To connect the Dashboard to the `tmd`, the relevant process must be running. One `tmd` process can maintain multiple positions and each of the positions can have multiple pages.

The following specifics of the Treasury Position should be taken into account:

- Total lines provided by `tmd` are ignored; the Dashboard processes only the lowest level raw data.
- Some figures cannot be aggregated across the board in a simple manner. For example - Local Market Value in EUR cannot be summed with Local Market Value in USD. To address this, the Dashboard includes an advanced feature called Aggregation Criteria which allows you to specify another field as the one that will determine the aggregation (in this case Currency). The Dashboard defaults to the relevant Aggregation Criteria for certain cases. The default can be overridden provided that the underlying field is part of the data source output.
- Some figures, such as value at risk or duration cannot be aggregated in a simple manner. To avoid showing incorrect figures in the dashboard aggregations, it is possible to set a "Do not aggregate switch" in the Aggregation Criteria. When this switch is on, "N/A" will appear at the appropriate places to indicate that the aggregation is not applicable.
- Default sorting logic is not meaningful for some fields. In this case additional fields are introduced, such as Risk Period (Sort Order).
- The Dashboard will show the qualification in brackets for axes that are configurable in the Treasury Monitor (such as Client Group, Instrument Group, Periods) Examples: Client Group (Risk Grouping), Instrument Group (Second), Risk Period (MM Gaps).

`tmd` position start-up parameters allow for the date field to be empty (the current day is used as the default). The `tmd` can be restarted every day without having to change the start-up parameters to see the current positions.



## A.1 Bank Account Balances

Parameter	Description
Balance Period in Days	Number of days, prior to the Due Date to be included when calculating the balances. This is used to include backdated transactions in the calculations. For example, if the activity runs daily and the number of days specified here is 3, then the balance is recalculated daily using the transactions from the past three days.
Balance Transaction State	State in which balance transactions are created. If left blank, the transactions are created in the default state, for example BA-BALANCE, or the default state chosen by your organization for bank account balances.
Balance Owner	The client (bank account owner) of the accounts to be processed.
Bank	The bank of the accounts to be processed.
Account	The account to be processed.
Account Group	The account group of the accounts to be processed.

## A.2 Bank Account Interest Realizing

Parameter	Description
Mode	Realize (default) or Undo Realize. Select Undo Realize if you want to undo the realization of interest on accounts.
Portfolio	Portfolio containing the accounts to be processed.
Bank	Bank of the accounts to be processed.
Account	The account to be processed.
Currency	Currency of the accounts to be processed.
Interest Bank	ID of a bank if you want to settle the interest realization in a specific bank, which differs from the default bank.
Interest Account	ID of a bank account if you want to settle the interest realization in a specific account, which differs from the default bank account.
Skip Calendar Check	State if you want to skip the currency calendar check. If you select <b>Yes</b> to skip the check, the value date of the realized interest will be posted on the day the activity runs, even if it falls on a non-business day.

## A.3 Benchmark Cash Processing

Parameter	Description
Portfolio	Benchmark portfolio to be processed to re-investment the cash according to the selected method.

## A.4 Benchmark Rebalancing

Parameter	Description
Benchmark	Benchmark to be processed to perform rebalancing according to the benchmark's rebalancing schedule.

## A.5 Book Value Change

Parameter	Description
Portfolio	Trading portfolio containing the deals that are to be processed (mandatory field).
Minimum Transaction State	Minimum state that transactions must have reached to be included in the processing.
Scenario	Market data scenario to be used in the processing. Should be the same scenario that is used for calculating results: see <i>19.4.2.1 Defining rate scenarios for result calculations</i> on page 543.
Valuation Mode	Market valuation mode to be used: Default, Benchmark, or Theoretical. Should be the same valuation mode that is used for closing the books: see <i>19.4.4 Calculating bookkeeping entries</i> on page 546.
Result Mode	Result calculation mode (accounting standard) to be used.
Classification	Only transactions in this classification group are be processed.
Instrument Group	The instrument group containing the deals that are to be processed.
Instrument	The instrument attached to the deals that are to be processed.
Pending Transactions	Whether to include pending transactions, i.e. transactions whose settlement date is after the BVC date. <ul style="list-style-type: none"> <li>• <b>Yes</b> - revalues pending transactions (default).</li> <li>• <b>No</b> - ignores pending transactions.</li> </ul>

## A.6 Call Money Account Update

Parameter	Description
Minimum Transaction State	Minimum state that transactions must have reached to be included in the processing.

Parameter	Description
Portfolio	Portfolio containing the call money accounts to be processed.
Owner	Owner (client) of the portfolio containing the call money accounts to be processed.
Counterparty	Counterparty of the call money accounts to be processed.
Counterparty Main Group	Counterparty main group of the call money accounts to be processed.
Counterparty Group	Counterparty group of the call money accounts to be processed.
Instrument	The instrument attached to the call money accounts that are to be processed.
Instrument Group	Instrument group that contains the call money accounts that are to be processed.
Currency	Currency of the call money accounts to be processed.
Interest Rate Curve	Yield curve attached to the instrument of the call money accounts to be processed.

## A.7 Call Money Roll Over

Parameter	Description
Minimum Transaction State	Minimum state that transactions must have reached to be included in the processing.
Portfolio	Portfolio containing the call money transactions to be processed.
Owner	Owner (client) of the portfolio containing the call money transactions to be processed.
Counterparty	Counterparty of the call money transactions to be processed.
Counterparty Main Group	Counterparty main group of the call money transactions to be processed.
Counterparty Group	Counterparty group of the call money transactions to be processed.
Instrument	The instrument attached to the call money transactions that are to be processed.
Instrument Group	Instrument group that contains the call money transactions to be processed.
Currency	Currency of the call money transactions to be processed.

## A.8 Cash Pool Leveling

Parameter	Description
Cash Pool Hierarchy	Cash pool hierarchy that contains the accounts to be processed. This can be a single cash pool account, or a parent account with subaccounts.
Transaction State	Transaction state given to the created leveling transactions.
Minimum Transaction State	Minimum state that transactions must have reached to be included in the processing.
Include Sub Hierarchy	Specifies whether to process the subaccount hierarchy: <ul style="list-style-type: none"> <li>• Yes - includes the subaccounts</li> <li>• No - only processes the selected account.</li> </ul>

## A.9 Cash Settlement Reconciliation

Parameter	Description
Owner	Owner (client) of the portfolio containing the statements to be processed (mandatory field).
Bank	Select the holding bank of the securities to be processed. If left blank, all banks are included.
Account	Select the account (held by the custodian) that is to be processed. If left blank, all the accounts held with the custodian are processed.
Period Start Date Period End Date	Specify a period for which the reconciliation is to run. This allows reconciliation of past statements against outstanding settlements.

## A.10 Checking Instruments and Transactions Clients

Parameter	Description
Client	The client that has been modified.

## A.11 Checking Instruments and Transactions Holidays

Parameter	Description
Keep Holidays Changes	Specifies whether to mark the holiday changes as already done. <ul style="list-style-type: none"> <li>• <b>No</b> - (default) marks the holiday changes as already incorporated so if the activity is repeated the new holidays are not considered.</li> <li>• <b>Yes</b> - incorporates the holiday changes.</li> </ul>
Update Instruments and Transactions	Specifies whether to incorporate the calendar changes in the instrument and transactions. <ul style="list-style-type: none"> <li>• <b>No</b> - (default) marks but does not update the instruments and transactions that require cashflows to be regenerated following a change in holidays. This means that at the instrument level, the <b>To be checked</b> switch will be switched on for all instruments potentially impacted and at the transaction level, transactions will be set with the status <b>To be checked</b>. You can then update the instruments and transactions in Transaction Manager.</li> <li>• <b>Yes</b> - the holiday changes are automatically incorporated into instruments and transactions. If <b>Yes</b> is selected, any modifications made to the cash flows prior to this update are saved and reinstated after regeneration.</li> </ul>

## A.12 Closing the Books Valuation

**Note:** This activity type is reserved for use by technical support staff - it is not intended for use by end users.

Parameter	Description
Top Portfolio to Process	The portfolio to be processed (mandatory field). If a parent portfolio is selected, all the subportfolios are also processed.
Minimum State	Minimum state that transactions must have reached to be included in the processing. Note: If left blank, the default state is <b>Open</b> .
Scenario	Market data scenario to be used in the processing. If left blank, the scenario specified in Accounting Configuration Editor is used.
Result Mode	Result calculation mode (accounting standard) to be used.
Valuation Mode	Market valuation mode to be used: Default, Benchmark, or Theoretical
Benchmark Mode	The mode to be used for the calculation of benchmark figures: Default, Benchmark, or Theoretical.
Delta Figures	If set to <b>No</b> (the default), the key figures are stored, to be used by the TRM CTB Events Generation activity, i.e. Realized Period End = 0. If set to <b>Yes</b> , the key figures are stored, to be used by the TRM Daily Delta Events Generation activity, i.e. Unrealized Period End with two sets of figures: beginning of day = -1, end of day = +1.
Next Day Valuation	<b>Yes or No.</b> Shifts the Valuation Date one day forward, while keeping the Figure Date unchanged. This results in determining the position as of due date, using market rates as of due date, and doing the valuation (e.g. calculating accruals) as of due date + 1 day.

## A.13 Copy Market Information

Parameter	Description
MI Group	Market Information Group of market rates to be copied (frozen). Select a group here to copy a subset of the rates from the Source Scenario, for example, European rates, US rates. If left blank, all the rates in the Source Scenario are copied.
Source Scenario	The scenario from which the quotations are copied. If left blank, the default scenario (real-time feed) is used.
Destination Scenario	The scenario to which the quotations are copied. For example, FREEZE.
Source Subscenario	The subscenario from which the quotations are copied.
Destination Subscenario	The subscenario to which the quotations are copied.
Mode	The mode that determines which quotations are copied from the source scenario. <ul style="list-style-type: none"> <li><b>Day</b> - The default mode. Copies quotations entered on the day the activity is run.</li> <li><b>Last</b> - Copies the most recent quotations received before the activity is run.</li> </ul> Note: When copying prices intra-scenario, the Copy Price starts the last date search from the day before the target date.

Parameter	Description
Override Existing Prices	<p><b>Yes or No.</b></p> <ul style="list-style-type: none"> <li><b>Yes</b> - overrides any existing quotations for the specified date.</li> <li><b>No</b> - keeps the existing quotations copied on that day.</li> </ul> <p>This is useful if the activity is running several times in one day. For example, some rates are only available in the afternoon, so the activity will need to run again but without overwriting the rates that were copied in the morning.</p>

## A.14 Cost of Carry

Parameter	Description
Cost-of-Carry Period in Days	<p>Number of days prior to the Due Date that are to be considered when calculating the cost-of-carry.</p> <p>The reason for this is to make sure that backdated transactions are included in the calculation. For example, if the activity runs daily and the number of days specified here is 3, then balances are calculated every day including transactions from the previous three days.</p>
Top Portfolio	<p>The portfolio to be processed.</p> <p>If a parent portfolio is selected, all the subportfolios are also processed.</p>
Cost-of-Carry Transaction State	The state to be given to the cost-of-carry cash flow once calculated.
Minimum Transaction State	Minimum state that transactions must have reached to be included in the processing.

## A.15 Cost of Carry Interest Realizing

Parameter	Description
Mode	Realize (default) or Undo Realize. Select Undo Realize if you want to undo the cost-of-carry interest realization.
Portfolio	Portfolio for which you want to realize the cost-of-carry interest.
Currency	The currency of the cost-of-carry interest to be processed. If left blank, all currencies will be processed.
Zero Balancing	<p><b>Yes or No (default).</b></p> <ul style="list-style-type: none"> <li><b>Yes</b> - the accrued cost-of-carry interest and the cost-of-carry balance are closed out, so that the next day, the starting cost-of-carry balance is zero when the cost-of-carry activity is run.</li> <li><b>No</b> - the accrued cost-of-carry interest is realized today, and the next day, the starting cost-of-carry balance is today's balance.</li> </ul>



## A.16 Cost of Carry Zero Balancing

Parameter	Description
Mode	<b>Zero Balancing</b> (default) or <b>Undo Zero Balancing</b> . Select <b>Undo Zero Balancing</b> if you want to undo the cost-of-carry zero balancing. See the <i>TRM User Guide</i> for information on zero-balancing.
Portfolio	Portfolio for which you want to set the balance to zero.
Currency	The currency of the cost-of-carry interest to be processed. If left blank, all currencies will be processed.

## A.17 Custody Balances

Parameter	Description
Balance Period in Days	Number of days prior to the Due Date that are to be considered when generating the balances.  The reason for this is to make sure that backdated transactions are included in the calculation. For example, if the activity runs daily and the number of days specified here is 3, then balances are calculated every day including transactions from the previous three days.
Instrument	The instrument to be processed.
Client	Custodian (a client with the role of Custody) for which the balances are to be calculated.
Always Store Balance	<b>Yes</b> or <b>No</b> . <ul style="list-style-type: none"> <li><b>Yes</b> - stores all the balances.</li> <li><b>No</b> - only stores the balances when they have changed (default).</li> </ul> Note: Set to <b>Yes</b> , if the activity is running before Custody Reconciliation, to guarantee having balances with the correct dates.
Undo Reconciled Balance	<b>Yes</b> or <b>No</b> . <ul style="list-style-type: none"> <li><b>Yes</b> - to undo reconciled custody balances when generating new ones.</li> <li><b>No</b> - do not undo reconciled custody balances.</li> </ul>

## A.18 Dashboard Excel Export

Parameter	Description
Dashboard Layout	The name of the Dashboard layout to be exported. The user scheduling the activity must be entitled to access this layout. This is a mandatory parameter.
Output File Name	The name of the generated Excel file. These files are generated to the location specified by the <code>DASHBOARD_EXPORT_HOME</code> environment variable. By default it is <code>%WSS_HOME%/var/export/dashboard</code> .  This parameter is optional and if not specified the filename is derived from the activity parameters in the form <code>_\${Dashboard Layout}_\${Due Date in yyyyMMdd format}_\${ activity_number}.xlsx</code> .  Unless it is already present, the <code>.xlsx</code> extension of the filename will get added automatically.

Parameter	Description
Suppress File Name Suffix	Select <b>Yes</b> if you want to remove the <code>_{Due Date in yyyyMMdd format}_{activity_number}</code> ending from the file name.
Merge Cells	<p><b>Yes, No</b> or empty.</p> <ul style="list-style-type: none"> <li><b>Yes:</b> The cells in the pivot tables are merged as in the Dashboard user interface. This is useful for printing.</li> <li><b>No</b> or empty: The cells in the pivot tables are not merged. This is useful if the output is used for further processing in Excel.</li> </ul>
Timeout in Minutes	If the default timeout of 300000 ms (5 minutes) is insufficient then it can be extended here.

## A.19 Data License Prices

Parameter	Description
Default Ask Tag	The default identifier for the <b>Ask</b> field if it has not been set in the Market Info Source Editor. If left blank, defaults to <code>PX_ASK</code> . For a list of possible field identifiers, see the Bloomberg documentation.
Default Bid Tag	The default identifier for the <b>Bid</b> field if it has not been set in the Market Info Source Editor. If left blank, defaults to <code>PX_BID</code> . For a list of possible field identifiers, see the Bloomberg documentation.
Default Date Tag	The default identifier for the <b>Date</b> field if it has not been set in the Market Info Source Editor. For a list of possible field identifiers, see Bloomberg documentation.
Source	Source from which market info is searched in the Market Info Source Editor and for which quotations are requested. If left blank, defaults to <code>BLOOMBERG</code> .
Type	Type for which market info is searched in the Market Info Source Editor and for which quotations are requested. If left blank, all market info types are requested.
MI Group	MI Group from which the market info is searched in the Market Info Source Editor and for which quotations are requested. If left blank, then no filter is applied to the MI Group field.
Name	Name for which the market info is searched in the Market Info Source Editor and for which quotations are requested.
Destination Scenario	Destination scenario into which prices are imported. If specified, the specified scenario will override the scenario defined in the Market Info Source Editor.
Destination Subscenario	Destination subscenario, where prices are to be imported. If specified, the specified subscenario will override the subscenario defined in the Market Info Source Editor.
Pricing Source	A user can request quotes for a specific market source only. In the header of the request file, the following command is added: <code>PRICING_SOURCE = parameter of activity</code> .
Historical End Date Historical Start Date	<ul style="list-style-type: none"> <li>If you specify a start date without an end date, then the historical prices are imported up to the current date.</li> <li>If you specify both start and end dates, then the historical prices are imported for the selected period.</li> <li>If no dates are specified, then the current prices are imported.</li> </ul>

Parameter	Description
Processing Type	<p>Select the processing type:</p> <ul style="list-style-type: none"> <li>• <b>All</b> - The request file is created and uploaded via the FTP connection to the appropriate site, the response is fetched and processed.</li> <li>• <b>Generate Request</b> - Only the request file is created. The request file is stored in the folder defined by environment variable FK_BLOOMBERG_FTP_LOCAL_DIR.</li> <li>• <b>Process Output</b> - The output file is processed. Output files are stored in the folder defined by the environment variable FK_BLOOMBERG_FTP_LOCAL_DIR. All files with the following extensions are processed: .out, .out.gz., and out.enc.gz</li> </ul> <hr/> <p>Note: The FTP communication must be properly configured.</p>
Work Station (WS)	<p>Select the Bloomberg workstation that you want to be used for requesting prices instead of the one set up by the environment variable FK_BLOOMBERG_FTP_WORKSTATION.</p> <p>For more information about Bloomberg specific environment variables, refer to the <i>TRM System Admin Guide</i>.</p>

## A.20 Data License Output Processing

Parameter	Description
Source Subdirectory	<p>The subdirectory containing the files to be imported. The list of import files is based on the contents of the Source Subdirectory field and the environment variables FK_MDI_FILE_IMPORT_DIR and FK_MDI_IMPORT_FILE_PATTERN.</p> <p>The final path is constructed as follows: [FK_IMPORT_PRICES_DIR] <b>Source Subdirectory</b> [FK_MDI_IMPORT_FILE_PATTERN]</p> <ul style="list-style-type: none"> <li>• If the Source Subdirectory field contains the full path from the root, then FK_MDI_FILE_IMPORT_DIR is ignored.</li> <li>• If the path ends with name of a file (with or without wildcards), then FK_MDI_IMPORT_FILE_PATTERN is ignored.</li> </ul> <p>Note: Do not include the extension in the pathname as the system only searches and processes files with extensions .out, .out.gz, .out.enc.gz. from Bloomberg. For example, a file with extension .out.enc.gz is decompressed (.gz) then decrypted (.enc), and finally, the text file (.out) is processed</p> <ul style="list-style-type: none"> <li>• If the <b>Source Subdirectory</b> field is empty then the default value '*' is used, i.e. all files in the source subdirectory.</li> </ul>

## A.21 Delete Instrument

Parameter	Description
Import Request	(Mandatory) Select the previously imported request for which you want to delete the instruments.
Import Batch ID	Select the corresponding batch ID of the import request for which you want to delete the instruments.

## A.22 Detachment

Parameter	Description
Portfolio	The portfolio to be processed (mandatory field). If a parent portfolio is selected, all the subportfolios are also processed.
Minimum Transaction State	Minimum state that transactions must have reached to be included in the processing.
Commercial Lending Context	To be used in the commercial lending context. <b>Yes</b> or <b>No</b> .
Facility	Only include transactions in this facility. Only applies when <b>Commercial Lending Context</b> = Yes
Instrument	The equity instrument to be processed (optional).

## A.23 Dividend

Parameter	Description
Portfolio	The portfolio to be processed (mandatory field).
Minimum Transaction State	Minimum state that transactions must have reached to be included in the processing.
Commercial Lending Context	To be used in the commercial lending context. <b>Yes</b> or <b>No</b> .
Facility	Only include transactions in this facility. Only applies when <b>Commercial Lending Context</b> = Yes
Instrument	The equity instrument to be processed (optional).

## A.24 End of Day Processing

**Note:** This activity type is reserved for use by technical support staff - it is not intended for use by end users. See the **TRM Daily Events Generation** activity type in the *ACM User Guide*.

Parameter	Description
Processing Period in Days	Process transactions from the Due Date and this number of days relative to the Due Date. For example, -5 means that data is processed for the due date and the five days prior to that date.
Portfolio	The portfolio to be processed (mandatory field). If a parent portfolio is selected, all the subportfolios are also processed.
Type	Type of processing: Closing, Off-balance, or Running.
Result Mode	Result calculation mode (accounting standard) to be used.
Do Payment Bookkeeping	Specify whether to include payment bookkeeping in the processing.

Parameter	Description
Payment Owner	Owner of the payments to be included in the processing.
Process Selling	If you want to disable the processing of average balances and selling, select <b>No</b> . For example, when you want to run this activity after the Book Value Change and there are some sell transactions on the BVC date and you are using <b>Average</b> selling method.
Logging Mode	Select the level of logged messages ( <b>None, Normal, Extensive</b> ) that you want to receive during the processing.

## A.25 End of Period Processing

**Note:** This activity type is reserved for use by technical support staff - it is not intended for use by end users. See the TRM CTB Events Generation activity type in the *ACM User Guide*.

Parameter	Description
Top Portfolio to Process	The portfolio to be processed (mandatory field). If a parent portfolio is selected, all the subportfolios are also processed.
Minimum State	Minimum state that transactions must have reached to be included in the processing. Note: If left blank, the default state is <i>Open</i> .
Scenario	Market data scenario to be used in the processing. If left blank, the scenario specified in Accounting Configuration Editor is used.
Result Mode	Result calculation mode (accounting standard) to be used.
Valuation Mode	Market valuation mode to be used: <b>Default, Benchmark, or Theoretical</b> .
Benchmark Mode	The mode to be used for the calculation of benchmark figures: <b>Default, Benchmark, or Theoretical</b> .
Next Day Valuation	<b>Yes or No</b> . Shifts the Valuation Date one day forward, while keeping the Figure Date unchanged. This results in determining the position as of due date, using market rates as of due date, and doing valuation (e.g. calculating accruals) as of due date + 1 day.

## A.26 Equity Conversion

Parameter	Description
Portfolio	The portfolio to be processed (mandatory field). If a parent portfolio is selected, all the subportfolios are also processed (mandatory field).
Minimum Transaction State	Minimum state that transactions must have reached to be included in the processing.
Commercial Lending Context	To be used in the commercial lending context. <b>Yes or No</b> .
Facility	Only include transactions in this facility. Only applies when <b>Commercial Lending Context</b> = Yes

Parameter	Description
Instrument	The equity instrument to be processed (optional).

## A.27 Fixing ABS Repayment

Parameter	Description
Instrument Group	Instrument group to be processed.
Instrument	Instrument to be processed.
Use % Below	Triggers the use of the <b>Repayment %</b> parameter for the repayment fixing.
Repayment %	The fixing rate for the cash flow. If <b>Use % Below</b> is set to <code>Yes</code> , and this field is blank, then the fixing rate is 0.

## A.28 Fixing ABS Repayment (Full Repayment)

Parameter	Description
Instrument Group	Instrument group to be processed.
Instrument	Instrument to be processed.

## A.29 Fixing Bond Cashflow

Parameter	Description
Instrument Group	Instrument group containing the bond instrument to be processed.
Instrument	The bond instrument to be processed.
Currency	Currency for the fixing.
Fixing Rate	Yield curve used in the fixing.
Fixing Period	Interest period from which the quotation is retrieved when fixing the floating leg of the transaction, for example 1M, 3M, 1Y.
Fixing Subscenario	Subscenario from which the quotation is retrieved.

## A.30 Fixing Bond Cashflow - Undo

Parameter	Description
Instrument Group	Instrument group containing the bond instrument to be processed.

Parameter	Description
Instrument	The bond instrument to be processed.
Currency	Currency of the fixing.
Fixing Rate	Yield curve used in the fixing.
Fixing Period	Interest period from which the quotation is retrieved.
Fixing Subscenario	Subscenario from which the quotation is retrieved.

## A.31 Fixing Transaction Cashflow

Parameter	Description
Processing Period in days	Process transactions from the Due Date and this number of days relative to the Due Date. For example, -5 means that data is processed for the due date and the five days prior to that date.
Portfolio	The portfolio to be processed.
Minimum Transaction State	Minimum state that transactions must have reached to be included in the processing.
Instrument Group	Instrument group to be processed.
Instrument	The instrument to be processed.
Currency	Currency for the fixing.
Fixing Rate	Yield curve to be used to fix a floating cash flow.
Fixing Period	Interest period from which the quotation is retrieved when fixing the floating leg of the transaction, for example 1M, 3M, 1Y.
Fixing Subscenario	Subscenario from which the quotation is retrieved.
Re-fixing Included	<p><b>Yes</b> or <b>No</b>.</p> <ul style="list-style-type: none"> <li><b>Yes</b> - re-fixing is done using the last fixing price.</li> <li><b>No</b> - fixing already done and remains unchanged.</li> </ul>

## A.32 Fixing Transaction Cashflow - Undo

Parameter	Description
Processing Period in days	Process transactions from the Due Date and this number of days relative to the Due Date. For example, -5 means that data is processed for the due date and the five days prior to that date.
Portfolio	The portfolio to be processed.
Minimum Transaction State	Minimum state that transactions must have reached to be included in the processing.
Instrument Group	Instrument group to be processed.
Instrument	The instrument to be processed.

Parameter	Description
Currency	Currency of the fixing.
Fixing Rate	Yield curve used in the fixing.
Fixing Period	Interest period from which the quotation was retrieved.
Fixing Subscenario	Subscenario from which the quotation was retrieved.

## A.33 Fixing Transaction Trigger

Parameter	Description
Portfolio	The portfolio to be processed.
Minimum Transaction State	Minimum state that transactions must have reached to be included in the processing.
Instrument Group	Instrument group to be processed.
Instrument	The instrument to be processed.
Currency	Currency for the fixing.
Fixing Rate	Yield curve used in the fixing.
Fixing Period	Interest period from which the quotation is retrieved when fixing the floating leg of the transaction, for example 1M, 3M, 1Y.
Fixing Subscenario	Subscenario from which the quotation is retrieved.
Re-fixing Included	<p><b>Yes or No.</b></p> <ul style="list-style-type: none"> <li><b>Yes</b> - re-fixing is done using the last fixing price.</li> <li><b>No</b> - fixing already done and remains unchanged.</li> </ul>

## A.34 Fixing Transaction Trigger - Undo

Parameter	Description
Portfolio	The portfolio to be processed.
Minimum Transaction State	Minimum state that transactions must have reached to be included in the processing.
Instrument Group	Instrument group to be processed.
Instrument	The instrument to be processed.
Currency	Currency of the fixing.
Fixing Rate	Yield curve used in the fixing.
Fixing Period	Interest period from which the quotation was retrieved.
Fixing Subscenario	Subscenario from which the quotation was retrieved.



## A.35 Forecast Exposures from CMM

Parameter	Description
Portfolio	The portfolio to be processed. If a parent portfolio is selected, all the subportfolios are also processed
Minimum Transaction State	Minimum state that transactions must have reached to be included in the processing.
Value Date From	First date that the forecasts from CMM are considered. This parameter corresponds to the <b>Report From</b> field in the Cashflow Forecast Selection parameters.
Value Date To	Last date that the forecasts from CMM are considered. This parameter corresponds to the <b>Report To</b> field in the Cashflow Forecast Selection parameters.
Scenario	Market data scenario to be used in the processing.

## A.36 Forward Fixing

Parameter	Description
Portfolio	The portfolio to be processed. If a parent portfolio is selected, all the subportfolios are also processed
Minimum Transaction State	Minimum state that transactions must have reached to be included in the processing.
Scenario	Market data scenario to be used in the processing.
Valuation Mode	Market valuation mode to be used: Default, Benchmark, or Theoretical.
Result Mode	Result calculation mode (accounting standard) to be used.
Classification	Only transactions in this classification group are be processed.
Instrument Group	Instrument group to be processed.
Instrument	The instrument to be processed.

## A.37 Fund Data Calculation/Reporting

Information	Description
Fund Portfolio	ID of the relevant top fund or individual fund.
Transaction State (mandatory)	Minimum state that the fund assets and fees transactions must have reached in order to be included in the activity.
Time Zone	Mandatory. Time zone as defined in Time Zone Editor.
Cut-Off Time (mandatory)	Time, up until which, transactions are included in the analysis.

Information	Description
Currency	The currency in which you want to display the results. Note: By default this is the currency of the fund portfolio.
Rate Scenario (mandatory)	The Market Information Scenario in which the fund's assets and fees are calculated. Note: If left empty, the default scenario is used.
Result Context	Accounting standard for which you want to define the scenario.
State Context	Value specifying whether certain transaction types are to be included in the position: <ul style="list-style-type: none"> <li>• <b>Default</b> - no cost-of-carry or collateral transactions.</li> <li>• <b>w/Cost-of-Carry</b> - cost-of-carry transactions.</li> <li>• <b>w/Collateral</b> - collateral transactions. These transactions are generated from repo transactions.</li> <li>• <b>w/Cost-of-Carry/Collateral</b> - both cost-of-carry and collateral transactions.</li> <li>• <b>w/Cost-of-Carry/Order</b> - both cost-of-carry and order transactions.</li> <li>• <b>w/Order</b> - order transactions.</li> </ul> Note: <b>w/Cost-of-Carry</b> can only be selected for portfolios which have the <b>Cost-of-Carry</b> switch turned on: see <i>12.1.7 Monitoring cost-of-carry positions</i> on page 390 for more information.
Fund Report Comment	Written comment to be displayed in NAV Report Manager.
Fund Report State	State of the report (for example <b>Final</b> ) Note: If the Fund Report State = <b>Final</b> , the activity can also save the NAV (on top of running a NAV report).
Fund Report Status	Status of the report (for example, <b>Set Published</b> ) <b>Note:</b> <ul style="list-style-type: none"> <li>• If the Fund Report State = <b>Final</b> and Fund Report Status = <b>Set Published</b> <ul style="list-style-type: none"> <li>- The activity runs the report and saves the NAV by default in the NAV output scenario defined in the Portfolio Editor/NAV Calculation Setup page.</li> </ul> </li> <li>• If the Fund Report State = <b>Final</b> and Fund Report Status = <b>End of Day</b> or empty <ul style="list-style-type: none"> <li>- The activity runs the report and saves the NAV in the NAV output scenario defined in NAV Scenario field (below).</li> </ul> </li> </ul>
NAV Scenario	The Market Information Scenario in which the calculated NAV is saved. Note: This field only applies if the Fund Report State = <b>Final</b> .
Clear published	<b>Yes</b> or <b>No</b> (default). <b>Yes</b> - the activity undoes the processing of the <b>Final</b> and <b>Published</b> NAV; it undoes the generation of the accrued management fees and the saving of the NAV.

## A.38 Fund Fee Realizing

Information	Description
Mode	<b>Realize</b> (default) or <b>Undo Realize</b> . Select <b>Undo Realize</b> if you want to undo the realization of fund fees. This removes all the paid flags on the accrued fund fee cashflows and removes the generated fund fee and principal cashflows.
Portfolio	Portfolio for which you want to realize the accrued fund fees.
Counterparty	Counterparty to whom you pay the accrued fund fee.
Instrument	ID of a fee instrument, but only if you want to realize specific fees for this instrument. Otherwise, leave this field blank, and the system will realize all the accrued fund fees defined in the portfolio.
Currency	The currency of the fee, but only if you want to realize the accrued fund fees in that one currency. Otherwise, leave this field blank, and the system will default to the portfolio currency.

## A.39 FX Fixing Transaction Cashflow

Parameter	Description
Processing Period in days	Process transactions from the Due Date and this number of days relative to the Due Date. For example, -5 means that data is processed for the due date and the five days prior to that date.
Portfolio	The portfolio to be processed.
Minimum Transaction State	Minimum state that transactions must have reached to be included in the processing.
Instrument Group	Instrument group to be processed.
Instrument	The instrument to be processed.
Currency	Currency for the FX fixing.
Fixing Subscenario	Subscenario from which the FX rate is retrieved.
Re-fixing Included	<b>Yes</b> or <b>No</b> . <ul style="list-style-type: none"> <li><b>Yes</b> - re-fixing is done using the last FX rate.</li> <li><b>No</b> - fixing already done and remains unchanged.</li> </ul>

## A.40 FX Fixing Transaction Cashflow - Undo

Parameter	Description
Processing Period in days	Process transactions from the Due Date and this number of days relative to the Due Date. For example, -5 means that data is processed for the due date and the five days prior to that date.
Portfolio	The portfolio to be processed.
Minimum Transaction State	Minimum state that transactions must have reached to be included in the processing.

Parameter	Description
Instrument Group	Instrument group to be processed.
Instrument	The instrument to be processed.
Currency	Currency of the FX fixing.
Fixing Subscenario	Subscenario from which the FX rate was retrieved.

## A.41 FX Option Strategy Exercise

Parameter	Description
Portfolio	The portfolio to be processed (mandatory field). If a parent portfolio is selected, all the subportfolios are also processed (mandatory field).
Minimum Transaction State	Minimum state that transactions must have reached to be included in the processing.
Strategy Type	The strategy type of the selected transaction (for example, Risk Reversal).
Strategy	The strategy ID of the selected transaction.
Fixing Scenario	The scenario used to retrieve the relevant FX spot rate for the <b>Exercise</b> action for fixing.

## A.42 FX Position Roll-Over

Parameter	Description
Top Portfolio	The portfolio to be processed. If a parent portfolio is selected, all the subportfolios are also processed Note: If the portfolio is not visible, check that it has the <b>FX Position Roll-Over</b> switch set to on.
Minimum Transaction State	Minimum state that transactions must have reached to be included in the processing.
Currency Currency 2nd	Only include this currency pair in the processing. Note: The system always combines currency pairs to roll-over the position. The base currency of the roll-over transaction (the 'position' currency) is determined according to market conventions defined in the Currency Editor. For example, for a standard EUR customer, both USD/CHF and CHF/USD deals are rolled over as a USD/CHF position.
Roll-Over Spot Rate	Method to be used to determine Spot Rate of the Roll-Over Transaction: <ul style="list-style-type: none"> <li>DEAL-BE-RATE - Roll-over closes previous spot position (no result with this method)</li> <li>CLOSING-RATE - Use closing spot rate of the previous day.</li> </ul>
Use Forward Points	<b>Yes</b> or <b>No</b> . <ul style="list-style-type: none"> <li><b>Yes</b> - to include cost of carry for rolling position over by adding forward points to the Spot Rate.</li> <li><b>No</b> - do not include cost of carry.</li> </ul>

Parameter	Description
Scenario	Market data scenario to be used in the processing to retrieve Closing Rate and Forward Points, if needed. Usually, <b>FREEZE</b> (Frozen Rates).
Minimum Home Amount	Minimum amount required to roll-over a position, expressed in portfolio's home currency.  This is to avoid rolling forward and generating extra transactions if the position is empty or contains a very small amount.
Mirror Portfolio	Portfolio where the internal swap transaction is mirrored.  Usually a short-term liquidity management or funding portfolio since the activity transfers the required funding from spot portfolios to the mirror portfolio.
Counterparty Client	Counterparty to use to create the internal Roll-Over transactions.
Ignore Back Dated Changes	<b>Yes or No.</b>  Avoids recalculating the position of back dated changes, such as new back-dated spot deals, or changes and cancellations of deals already calculated.  The system automatically detects if back-dated changes that affect the spot position have occurred. If they have, any changes are taken into account automatically, and the positions are recalculated (for the selected currency pair and portfolio only).  Note: Once the activity has run with this option for a given day, the back-dated changes present on that day are taken into account but are marked as processed. It means that they are never taken into account except by re-running the activity day by day from the date when the back dated changes start impacting the position and using Force Full Recalculation For Due Date option (see below).
Force Full Recalculation For Due Date	The system automatically detects which positions are out of date, and recalculates them without changing the previously calculated position. For example, if position roll-over is run for a given due date on a given portfolio, and later re-run for all portfolios (including that one), and provided there are no new deals in that portfolio, the previously calculated position is not recalculated.  Nevertheless, it may sometimes be useful to force recalculation of the full position. For example, when FX Rates are not correct after the activity has completed, or when back dated changes were inadvertently set to be ignored (see <b>Ignore Back Dated Change</b> ).  When this option is selected the system recalculates positions for the due date, regardless of whether they have already been calculated.

## A.43 FX Realizing

**Important:** **Do not use if you run daily accounting (TRM Daily Event Generation).** This activity calculates realized FX Profit and should be run with activity Selling (FIFO and Avg Balances), see A.62 *Selling (FIFO and Avg Balances)* on page 653.

Parameter	Description
Processing Period in Days	Process transactions from the Due Date and this number of days relative to the Due Date. For example, -5 means that data is processed for the due date and the five days prior to that date.
Portfolio (Mandatory field)	The portfolio to be processed.  If a parent portfolio is selected, all the subportfolios are also processed.
Instrument	Instrument to be processed.

Parameter	Description
Facility ID	Facility to be processed. Transactions only traded under the specified facility will be processed.  Note: For a proper handling of selling results you must configure your selling method with <b>Matching by Facility</b> switch in the <b>Selling</b> page of the Result Editor.
Result Mode (Mandatory field)	Result calculation mode (accounting standard) to be used.

## A.44 Import Instrument

Parameter	Description
Import Request	(Mandatory) Select the request to be imported.
Processing Type	Select the processing type: <ul style="list-style-type: none"> <li><b>All</b> - The request file is created and uploaded via the FTP connection to the appropriate site, the response is fetched and processed.</li> <li><b>Generate Request</b> - Only the request file is created. The request file is stored in the folder defined by environment variable <code>FK_BLOOMBERG_FTP_LOCAL_DIR</code>.</li> <li><b>Process Output</b> - The output file is processed. Output files are stored in the folder defined by the environment variable <code>FK_BLOOMBERG_FTP_LOCAL_DIR</code>. All files with the following extensions are processed: <code>.out</code>, <code>.out.gz</code>, and <code>out.enc.gz</code></li> </ul> Note: The FTP communication must be properly configured.

## A.45 Import Market Information

Parameter	Description
Source Subdirectory	The subdirectory containing the files to be imported (mandatory field).  The list of import files is based on the contents of the Source Subdirectory field and the environment variables <code>FK_IMPORT_PRICES_DIR</code> and <code>FK_IMPORT_PRICES_PATTERN</code> . The final path is constructed as follows: <code>[FK_IMPORT_PRICES_DIR] Source Subdirectory [FK_IMPORT_PRICES_PATTERN]</code> <ul style="list-style-type: none"> <li>If the Source Subdirectory field contains the full path from the root, then <code>FK_IMPORT_PRICES_DIR</code> is ignored.</li> <li>If the path ends with name of a file (with or without wildcards), then <code>FK_IMPORT_PRICES_PATTERN</code> is ignored.</li> </ul> The import process treats one file at a time. After successful completion of the import, the file is renamed/moved to a new subdirectory under the import directory. The name of the subdirectory is derived from the <code>batch_id</code> of the activity.
Destination Scenario	The destination FX scenario.  This overrides the scenario specified in the Market Info Source Editor and the import file. If left blank, the prices are stored in the scenario selected in the Market Info Source Editor which may not necessarily be the DEFAULT scenario.  If prices are to be stored in the DEFAULT scenario, then explicitly select that scenario here.

Parameter	Description
Destination Subscenario	The destination FX subscenario. This overrides the subscenario defined in the Market Info Source Editor and the import file. If left blank, the prices are stored in the subscenario selected in the Market Info Source Editor, which may not necessarily be the DEFAULT subscenario. If prices are to be stored in the DEFAULT subscenario, then explicitly select that subscenario here.
Destination Source	The destination source stored in the Prices table. This overrides all scenarios defined in the Market Info Source Editor and import file.

## A.46 Import Security List

Parameter	Description
Security List Request	Select the list to be imported. The list will be imported using the import request defined in the security list. To use a different import request, specify the import request you want to use in the <b>Import Request</b> field.
Import Request	Optionally, select a request to be used instead of the one defined at the security list level.
Processing Type	Select the processing type: <ul style="list-style-type: none"> <li><b>All</b> - The request file is created and uploaded via the FTP connection to the appropriate site, the response is fetched and processed.</li> <li><b>Generate Request</b> - Only the request file is created. The request file is stored in the folder defined by environment variable <code>FK_BLOOMBERG_FTP_LOCAL_DIR</code>.</li> <li><b>Process Output</b> - The output file is processed. Output files are stored in the folder defined by the environment variable <code>FK_BLOOMBERG_FTP_LOCAL_DIR</code>. All files with the following extensions are processed: <code>.out</code>, <code>.out.gz</code>, and <code>out.enc.gz</code></li> </ul> <p>Note: The FTP communication must be properly configured.</p>

## A.47 Index Freeze

Parameter	Description
Scenario	Market data scenario to be used in the processing.
Subscenario	Market data subscenario to be used in the processing.
Instrument	Instrument to be processed.
Instrument Group	Instrument group to be processed.

## A.48 Index Rebalance

Parameter	Description
Instrument	Instrument to be processed.
Instrument Group	Instrument group to be processed.

## A.49 Index Adjustment

Parameter	Description
Scenario	Market data scenario to be used in the processing.
Instrument Group	Instrument group to be processed.
Instrument	Instrument to be processed.
Index Type	The index type.

## A.50 Netting

Parameter	Description
Portfolio	The portfolio to be processed.
Minimum Transaction State	Minimum state that transactions must have reached to be included in the processing.
Instrument Group	Instrument group to be processed.
Instrument	Instrument to be processed.
Re-netting Included	Yes or No. <ul style="list-style-type: none"> <li>Yes - re-netting is done using the last fixing price.</li> <li>No - netting already done remains unchanged.</li> </ul>
Processing Period in days	Process transactions from the Due Date and this number of days relative to the Due Date. For example, -5 means that data is processed for the due date and the five days prior to that date.

## A.51 Netting - Undo

Parameter	Description
Portfolio	The portfolio to be processed.
Minimum Transaction State	Minimum state that transactions must have reached to be included in the processing.
Instrument Group	Instrument group to be processed.



Parameter	Description
Instrument	Instrument to be processed.
Processing Period in days	Process transactions from the Due Date and this number of days relative to the Due Date. For example, -5 means that data is processed for the due date and the five days prior to that date.

## A.52 NumeriX Calibration

Parameter	Description
Scenario	Market data scenario to be used in the processing.
Subscenario	Market data subscenario to be used in the processing.
Calibration	Select the model you want to calibrate. To calibrate a single model enclose the selected model between '^' and '\$', for example, ^MyModel\$. If left blank, all the calibration models are included.  Note: You can exclude calibration models from the list of available models by switching on <b>Exclude from calibration activity</b> in the model definitions, see 4.7 <i>Pricing complex derivatives</i> on page 190.

## A.53 NumeriX Valuation

Parameter	Description
Portfolio	Market data scenario to be used in the processing.
Minimum Transaction State	Minimum state that transactions must have reached to be included in the processing.
Instrument Group	Instrument group to be processed.
Instrument	Instrument to be processed.
Scenario	Market data scenario to be used in the processing.
Valuation Mode	Market valuation mode to be used: Default, Benchmark, or Theoretical.
Result Mode	Result calculation mode (accounting standard) to be used.
Transaction Number	The transaction to be processed.
Figure Currency	The figure currency of the transactions to be processed.

## A.54 FX Option No Exercise

Parameter	Description
Processing Period in Days	Process transactions from the Due Date and this number of days relative to the Due Date. For example, -5 means that data is processed for the due date and the five days prior to that date.

Parameter	Description
Portfolio	The parent portfolio of the portfolio hierarchy to be processed.
Minimum Transaction State	Minimum state that transactions must have reached to be included in the processing.
Instrument Group	Instrument group to be processed.
Instrument	Instrument to be processed.
Fixing Subscenario	Only transactions using this subscenario for fixing are to be processed.

## A.55 Performance Data Calculation

Parameter	Description
Top Portfolio to Process	The parent portfolio of the hierarchy for which market values are to be calculated. Note that the design of the portfolio structure has an effect on how many different parent portfolios are needed for saving market values and for monitoring performance on various levels. This includes the structure for benchmarks in case they are also maintained as real portfolios. Note also that the base currency of the parent portfolio determines in which currency the market values are saved.
Minimum Transaction State	Minimum state that transactions must have reached to be included in the processing.
Scenario	Market data scenario to be used in the processing.
Valuation Mode	Market valuation mode to be used: Default, Benchmark, or Theoretical.
Result Mode	Result calculation mode (accounting standard) to be used.
Force Spot to Zero	<b>Yes or No.</b> Calculates the market value as if the market quote was for delivery today (regardless of the number of spot days defined for the instrument). For bonds quoted on clean price, the market value is: $Clean\_price * nominal + AI\_today$ , without any discounting from spot. For instruments quoted on yield, the yield is used for discounting the cash flows from cash flow date to revaluation date.
Save Market Value Period in Days	Number of days, back from the Due Date, to be included when calculating market values. The reason for specifying a period is to make sure that backdated transactions are included in the calculation. For example, if the activity runs daily and the number of days specified here is 3, then every day, the system calculates the market value from transactions during the past three days.

## A.56 Portfolio Modeling Processing

Parameter	Description
Top Portfolio	The parent portfolio of the portfolio hierarchy to be processed (mandatory field).
Minimum Transaction State	Minimum state that transactions must have reached to be included in the processing.

Parameter	Description
Scenario	Market data scenario to be used in the processing.
Distribution Method	Method to be used when rebalancing: Even Proportional (default). Even Relative Bet.
Keep Input Values	<b>Yes</b> or <b>No</b> . <ul style="list-style-type: none"> <li><b>Yes</b> - no rescaling is applied (default).</li> <li><b>No</b> - rescaling is applied.</li> </ul>
No Overdraft	<b>Yes</b> or <b>No</b> (default). Avoids over investment (that is, investing more than indicated) as a result of rounding. Cash is not impacted when the rounding of the rebalancing results in an increase in the investment. The last investment is adjusted downwards.
Security to Exclude	The instrument to be excluded from the rebalancing process.
Invest Cash Only	<b>Yes</b> or <b>No</b> (default). Allows any extra cash to be rebalanced on the existing portfolio composition.
Rebalancing Figure Precision	Rebalancing figure precision (base key-figure). Changes the default precision. For example, any amount less than 0.0001 of the total market value of the portfolio can still be invested.
Mode	Transaction mode used to generate the orders. The default is PM-GENERATION.
Package Type	Name of the package type to be used to package the generated orders.

## A.57 Purge Market Quotes

Parameter	Description
Days to Keep	All quotes older than the due date of the activity minus <b>Keep Quotes Days</b> are purged. If not specified, then by default, the value from the Configuration Table Editor, parameter <b>Keep Quotes Days</b> is taken.
Scenario	Quotes in which scenario should be cleaned. By default, all scenario's quotes are cleaned.

## A.58 Return of Capital

Parameter	Description
Portfolio	The portfolio to be processed. If a parent portfolio is selected, all the subportfolios are also processed.
Minimum Transaction State	Minimum state that transactions must have reached to be included in the processing.
Commercial Lending Context	To be used in the commercial lending context. Yes or No.

Parameter	Description
Facility	Only include transactions in this facility. Only applies when <b>Commercial Lending Context</b> = Yes
Instrument	The equity instrument to be processed (optional).

## A.59 Risk Manager Export

Parameter	Description
Export Directory	The directory where the file is to be created.
Export File	The file name (without an extension).
Portfolio	The portfolio to be processed.
Export Strategy	The strategy to be used to export the position. <ul style="list-style-type: none"> <li>• <b>Risk Equivalent Cashflows</b> - only use this approach for IR and FX instruments. This strategy can be useful to compare RiskManager's Parametric VaR with TRM's.</li> <li>• <b>RMI Setup</b> - as specified in the RMI setup (the default strategy) The RMI setup is defined at instrument level using the <b>RiskManager position template</b> trading feature.</li> </ul>
Scenario	Market data scenario to be used in the processing. If left blank, the default scenario is used.
Native Equity Market Data	Specifies whether equities are proxied to external data, such as to a RiskMetrics data set (select <b>No</b> ), or to internal data (select <b>Yes</b> ). If left blank, defaults to <b>No</b> .
Native Yield Curve	Select <b>Yes</b> if the field Yield Curve contains TRM Yield Curve names, or <b>No</b> if the field contains RM Yield Curve names. If left blank, defaults to <b>No</b> .
Export Cost-of-carry	Select <b>Yes</b> if cost-of-carry transactions are to be exported, or <b>No</b> if they are not to be exported. If left blank, defaults to <b>No</b> . Balance transactions, if available, are always exported to be consistent with Treasury Monitor.
Export Obligors	Specific to the CreditManager Interface combined with RMI: <ul style="list-style-type: none"> <li>• <b>All clients</b> - export obligor information based on issuer.</li> <li>• <b>No</b> - do not export obligor information.</li> <li>• <b>Parent clients</b> - export obligor information based on CreditManager obligor.</li> </ul>
Minimum Transaction State	Minimum state transactions must have reached to be included in the processing. If left blank, defaults to <code>Open</code> .
Export Branch Codes	Select <b>Yes</b> if Branch Codes are to be exported at the end of each transaction using TAGs, or <b>No</b> if Branch Codes are not to be exported. If left blank, the default value is <b>No</b> .

## A.60 Save Caplet/Floorlet Volatilities

Parameter	Description
Volatility Reference	ID of the volatility reference you want to use.

Parameter	Description
Scenario	Market data scenario to be used in the processing.
Subscenario	Market data subscenario to be used in the processing.

## A.61 Save Derived IR Quotes and Yield Curves

Parameter	Description
Due Date Offset in Days	"-1" if you want the activity to process data for the previous day rather than the day of the Due Date.
IR Quote / Yield Curve	Specific IR Quote or yield curve for which yields will be saved. If left blank, the IR Quotes or yields will be saved for all IR Quotes or yield curves (matching the selected kind and currency below if applicable).
Scenario	Market data scenario to be used in the processing.
Subscenario	Market data subscenario to be used in the processing.
Kind	Select either <b>IR QUOTE</b> or <b>YIELD CURVE</b> or leave blank for both.
Currency	Currency of the IR Quotes and/or yield curves to be processed.

## A.62 Selling (FIFO and Avg Balances)

**Important:** **Do not use if you run daily accounting (TRM Daily Event Generation).** This activity closes the positions and calculates realized results for viewing in Treasury Monitor and Periodic PL Reporting. Run this activity with FX Realizing activity (A.43 *FX Realizing* on page 645).

Parameter	Description
Processing Period in Days	Process transactions from the Due Date and this number of days relative to the Due Date. For example, -5 means that data is processed for the due date and the five days prior to that date.
Portfolio (Mandatory field)	The portfolio to be processed. If a parent portfolio is selected, all the subportfolios are also processed.
Instrument	Instrument to be processed.
Facility ID	Facility to be processed. Transactions only traded under the specified facility will be processed.  Note: For a proper handling of selling results you must configure your selling method with <b>Matching by Facility</b> switch in the <b>Selling</b> page of the Result Editor.
Result Mode (Mandatory field)	Result calculation mode (accounting standard) to be used.

## A.63 Selling Values

Parameter	Description
Top Portfolio to Process	The portfolio to be processed. If a parent portfolio is selected, all the subportfolios are also processed.
Minimum Transaction State	Minimum state transactions must have reached to be included in the processing.
Scenario	Market data scenario to be used in the processing.
Result Mode	Result calculation mode (accounting standard) to be used.
Valuation Mode	Market valuation mode to be used: Default, Benchmark, or Theoretical.

## A.64 Settlement Generation

Parameter	Description
Portfolio	The portfolio to be processed.
Owner	Owner (client) of the portfolio to be processed.
Currency	Currency of the transactions to be processed.
Currency Class	Currency class of the transactions to be processed.
Currency Group	Currency group of the transactions to be processed.
Rule	Process the transactions that match the rule selected here. Rules are used to filter data. See <i>5.1 Defining rules</i> on page 221.
Not Rule	Process the transactions that do not match the rule selected here. Rules are used to filter data. See <i>5.1 Defining rules</i> on page 221.

## A.65 Security Positions Data

Parameter	Description
Top Portfolio to Process	The portfolio to be processed. If a parent portfolio is selected, all the subportfolios are also processed.
Result Mode	Result calculation mode (accounting standard) to be used.
Scenario	Market data scenario to be used in the processing.
Valuation Mode	Market valuation mode to be used: Default, Benchmark, or Theoretical.

## A.66 Security Settlement Reconciliation

Parameter	Description
Owner	Owner (client) of the portfolio to be processed.
Custodian	The custodian holding the securities that are to be processed. If left blank, all the all custodians are included.
Account	The account holding the securities that are to be processed. If left blank, all the all accounts are included.
Instrument	Instrument to be processed.
Period Start Date Period End Date	Specify a period for which the reconciliation is to run. This allows reconciliation of past statements against outstanding settlements.

## A.67 Split

Parameter	Description
Portfolio	The portfolio to be processed. If a parent portfolio is selected, all the subportfolios are also processed.
Minimum Transaction State	Minimum state that transactions must have reached to be included in the processing.
Commercial Lending Context	To be used in the commercial lending context. Yes or No.
Facility	Only include transactions in this facility. Only applies when <b>Commercial Lending Context</b> = Yes
Instrument	The equity instrument to be processed (optional).

## A.68 Undo Book Value Change

Parameter	Description
Portfolio	Parent or trading portfolio containing the deals that are to be processed (mandatory field)
Minimum Transaction State	Minimum state that transactions must have reached to be included in the processing.
Result Mode	Result calculation mode (accounting standard) in which the process should be done (mandatory field).
Classification	Only transactions in this classification group are be processed.
Instrument Group	The instrument group containing the deals that are to be processed.
Instrument	The instrument attached to the deals that are to be processed.

## A.69 Update Client

Parameter	Description
Client Update Request	(Mandatory) Select the request that defines the clients to be updated.
Processing Type	<p>Select the processing type:</p> <ul style="list-style-type: none"> <li><b>All</b> - The request file is created and uploaded via the FTP connection to the appropriate site, the response is fetched and processed.</li> <li><b>Generate Request</b> - Only the request file is created. The request file is stored in the folder defined by environment variable <code>FK_BLOOMBERG_FTP_LOCAL_DIR</code>.</li> <li><b>Process Output</b> - The output file is processed. Output files are stored in the folder defined by the environment variable <code>FK_BLOOMBERG_FTP_LOCAL_DIR</code>. All files with the following extensions are processed: <code>.out</code>, <code>.out.gz</code>, and <code>out.enc.gz</code></li> </ul> <p>Note: The FTP communication must be properly configured.</p>

## A.70 Update Corporate Action

Parameter	Description
Corporate Action Update Request	(Mandatory) Select the request that defines the instruments to be updated.
Processing Type	<p>Select the processing type:</p> <ul style="list-style-type: none"> <li><b>All</b> - The request file is created and uploaded via the FTP connection to the appropriate site, the response is fetched and processed.</li> <li><b>Generate Request</b> - Only the request file is created. The request file is stored in the folder defined by environment variable <code>FK_BLOOMBERG_FTP_LOCAL_DIR</code>.</li> <li><b>Process Output</b> - The output file is processed. Output files are stored in the folder defined by the environment variable <code>FK_BLOOMBERG_FTP_LOCAL_DIR</code>. All files with the following extensions are processed: <code>.out</code>, <code>.out.gz</code>, and <code>out.enc.gz</code></li> </ul> <p>Note: The FTP communication must be properly configured.</p>



## A.71 Update Instrument

Parameter	Description
Update Request	(Mandatory) Select the request that defines the instruments to be updated.
Processing Type	<p>Select the processing type:</p> <ul style="list-style-type: none"> <li>• <b>All</b> - The request file is created and uploaded via the FTP connection to the appropriate site, the response is fetched and processed.</li> <li>• <b>Generate Request</b> - Only the request file is created. The request file is stored in the folder defined by environment variable <code>FK_BLOOMBERG_FTP_LOCAL_DIR</code>.</li> <li>• <b>Process Output</b> - The output file is processed. Output files are stored in the folder defined by the environment variable <code>FK_BLOOMBERG_FTP_LOCAL_DIR</code>. All files with the following extensions are processed: <code>.out</code>, <code>.out.gz</code>, and <code>out.enc.gz</code></li> </ul> <p>Note: The FTP communication must be properly configured.</p>

## A.72 Update Settlement Instructions

Parameter	Description
Client	<p>Client for which settlement instructions are to be updated:</p> <ul style="list-style-type: none"> <li>• Enter a portfolio owner as the client, and all counterparties with which the owner has outstanding transactions are included.</li> <li>• Enter a counterparty as the client, and only those cash flows made with the counterparty are included.</li> </ul>
Currency	Target currency to be updated.
Instrument	Select the instrument on which you want the cashflow updates to apply if you want to limit these updates to one particular instrument.
Cashflows After	Earliest settlement date for cash flows to be included in the update. If left blank, the Due Date of the activity is used. All cashflows with a Settlement Date after this date receive new settlement instructions.
Cashflows Until	Latest settlement date for cash flows to be included in the update. All cash flows with a settlement date after this date are excluded from the update.
Commit Changes to Transactions	If set to <b>No</b> , the changes are calculated, but not committed to the database. Instead an email listing the changes is generated.

## A.73 CreditManager Exposure Export

Parameter	Description
Export Directory	Directory where the file is created.
Export File	File name (without any extension).
Top Portfolio	ID of the (top) portfolio (mandatory field).

Parameter	Description
Netting Strategy	Defines if short positions are to be used as collateral for a long one: <ul style="list-style-type: none"> <li>As specified in Client Editor</li> <li>Never.</li> </ul>
Obligor Grouping	Specifies if the exposure has to be split by parent client or by client: <ul style="list-style-type: none"> <li>Clients</li> <li>Parent Clients.</li> </ul> Note: If left blank, the default value is Parent Clients.
Export Strategy	Specifies which clients are to be exported. <ul style="list-style-type: none"> <li>Clients</li> <li>Parent Clients.</li> </ul>
Minimum Transaction State	Minimum state that transactions must have reached to be included in the processing. Note: If left blank, the default state is <b>Open</b> .

## A.74 CreditManager Obligor Export

Parameter	Description
Export Directory	Directory where the file is created.
Export File	File name (without any extension).
Export Strategy	Specifies which clients are to be exported. <ul style="list-style-type: none"> <li><b>Clients</b></li> <li><b>Parent Clients.</b></li> </ul>

## B.1 Activity Log Report

Parameter	Description
Period Start	The start and end dates for the reporting period.
Period End	Note: The default range is "today to today".

## B.2 Balance Report

Parameter	Description
Output File	
Output Mail	
Printer Name	
Layout	
Period Length	
Portfolio	The portfolio containing the accounts to be included.
Currency	The currency of the accounts to be included.
Currency Class	The currency class of the accounts to be included.
Client	The owner of the portfolio of the accounts to be included.
Bank	The bank of the accounts to be included.
Bank Account	The bank account to be included.
Transaction State	The state that transactions must have reached to be included.
Rule	
Display All Balances	Specifies whether the opening balance is displayed for each date: <ul style="list-style-type: none"> <li>• <b>Yes</b> - the opening balance is displayed for each date from Period Start to End</li> <li>• <b>No</b> - the opening balance is only displayed for the start date.</li> </ul>
Display Balance AI	Specifies whether the account accrued interest is displayed for each date: <ul style="list-style-type: none"> <li>• <b>Yes</b> (and <b>Display All Balances</b> = <b>Yes</b>) - the accrued interest is displayed for each date from period start to end.</li> <li>• <b>Yes</b> (and <b>Display All Balances</b> = <b>No</b>) - the accrued interest is only displayed for the period start date.</li> <li>• <b>No</b> - no accrued interest is displayed.</li> </ul>

## B.3 Bank Account Statement Report

Parameter	Description
Booking Date From	The booking date from which information is displayed.
Booking Date To	The booking date until when information is displayed.
Valid Date From	The value date from which information is displayed.
Valid Date To	The value date until when information is displayed.
Bank Statement Number	The unique ID given by the system to each bank statement.
Site	The ID for the site that has imported the bank statement.
Owner	Information for the accounts held by this owner should be displayed.
Bank	Information for the accounts with this bank should be displayed.
Bank Account	The account ID for which information should be displayed.
Information Type	<ul style="list-style-type: none"> <li>• If All is selected then all information should be displayed</li> <li>• If Balances is selected then only balance information should be displayed</li> <li>• If Movements is selected then only movement information should be displayed.</li> </ul>
Bank Statement Type	Only balances and movements for this bank statement type should be displayed.

## B.4 Book Value Change History Report

Parameter	Description
Portfolio	The portfolio for which you want to view the change in book value history. This is a mandatory field.
Period Start Period End	The start and end dates for the period for which you want the information to be displayed. Note: The default date range is "today to today".
Instrument Group	The instrument group for which you want to view the change in book value history.
Instrument	The instrument for which you want to view the change in book value history.
Result Mode	Result mode (accounting standard): FO/MO, FAS, IFRS, or Local. Only the result modes defined for the portfolio owner are available for selection.
Classification Group	The classification group for which you want to view the change in book value history. If Result Mode is specified, only the classification groups applied to the result mode are available for selection.
Classification	The classification within the classification group for which you want to view the change in book value history.
Number	Transaction Number of a specific transaction for which you want to view the change in book value history.

## B.5 Call Reports

Parameter	Description
Output File	
Output Mail	
Printer Name	
Layout	
Mode	Call money mode: admin, final or trading.
Category	Call account or call money.
Portfolio	The portfolio to be included.
Number	Call money or account number.
Period Length	
Currency	Currency for the call money or accounts to be included.
Instrument	Instrument of the call money or accounts to be included.
Account	The account to be included.
Counterparty	Counterparty of the call money or accounts to be included.
Trader	Trader name.

## B.6 Cashflow Report

Parameter	Description
Output File	
Output Mail	
Printer Name	
Layout	
Period Length	
Portfolio	The portfolio to be included in the report (mandatory field).
Instrument	The instrument to be included in the report.
Instrument Group	The instrument group to be included in the report.
Currency	The currency of the transactions to be included in the report.
Currency Class	The currency class of the transactions to be included in the report.
Currency Group	The currency group of the transactions to be included in the report.
Gap Set	Only transactions whose value date falls in to the specified gap are included.
Counterparty	The counterparty of the transactions to be included in the report.
Counterparty Main Group	The counterparty main group of the transactions to be included in the report.
Counterparty Group	The counterparty group of the transactions to be included in the report.

Parameter	Description
Our Bank	The organization's bank used for cash flows.
Our Bank Account	The organization's bank account used for the cash flows.
Transaction State	The state that transactions must have reached to be included.

## B.7 Cashflow Fixing Report

Parameter	Description
Period Start	The start date of the period queried.
Period End	The end date of the period queried.
Portfolio	The portfolio of the transactions for which you want to view the cash flows.
Currency	The currency of the transactions for which you want to view the cash flows.
Counterparty	The counterparty of the transactions for which you want to view the cash flows.
Counterparty Type	The counterparty type of the transactions for which you want to view the cash flows.
Main Counterparty Type	The main counterparty type of the transactions for which you want to view the cash flows.
Instrument Group	The instrument group of the transactions for which you want to view the cash flows.
Instrument	The instrument of the transactions for which you want to view the cash flows.
Transaction State	The state that transactions must have reached to be included.

## B.8 Cashflow Log Report

Parameter	Description
Output File	
Output Mail	
Printer Name	
Layout	
Period Length	
Number	The number of the single transaction to be included.
Portfolio	The portfolio of the transactions to be included.
Trader	Trader name. Only include transactions created/modified by this trader.

## B.9 Cheapest to Deliver Report

Parameter	Description
Instrument	The cheapest to deliver instrument.
Date	The delivery date.

## B.10 Classification Report

Parameter	Description
Portfolio	The portfolio to which the transactions you want to view belong.
Instrument Group	The instrument group used in the transactions that you want to view.
Instrument	The instrument used in the transactions that you want to view.
Counterparty	The counterparty of the transactions that you want to view.
Collateral Number	The number used to group all transactions involved in the same collateral transaction.
Opening Date From	The opening date from when you want to view the transactions.
Opening Date To	The opening date up until when you want to view the transactions.
Value Date From	The value date from when you want to view the transactions.
Value Date To	The value date up until when you want to view the transactions.
Classification Group	The classification group for which you want to view the transactions.
Transaction State	The state that transactions must have reached to be included.

## B.11 Client Update Log

Parameter	Description
Request	The name of the Client Update Request for which you want to generate the log.
Batch ID	Specific run of the activity, defined by a unique Batch ID, for which you want to generate the log.
Severity	Severity of the information shown in the log. Possible values are Error, Warning and Info.
Message Type	More detailed information about the type of information to show in the log. For example, you may want to view technical FTP Communication errors only, or business problems, such as errors when updating the client. You can filter the information based on the message type.
Layout	Layout of the report.

## B.12 Collateral Management Report

Parameter	Description
Position Date	Date for which you want the report.
Valuation Date	Date on which the value of the outstanding collateralized transactions and the associated collateral is measured.
Portfolio	The trading or higher level portfolio for which the report is being run.
Instrument Group ... ... Trader	All of the fields from Instrument Group to Trader are used to restrict the report to only those transactions matching the criteria you specify.
Figure Currency	By default, the figure currency is the portfolio (base) currency. It is also possible to enter another currency in the figure currency transaction column.
Period Behavior	Specify whether you want cash flows realizing on the period end date to be displayed as realized or unrealized.
Valuation Mode	Option for specifying which method is to be used for which portfolio: Default, Benchmark, or Theoretical.
Transaction State	The state that transactions must have reached to be included.
Scenario	Rate class (for example, default, freeze) for the report.
Result Mode	Result mode (accounting standard): FO/MO, FAS, IFRS, or Local. Only the result modes defined for the portfolio owner are available for selection.
State Context	Value specifying whether certain transaction types are to be included in the position: <ul style="list-style-type: none"> <li>• Default: no cost-of-carry or collateral transactions.</li> <li>• W/Cost-of-Carry: cost-of-carry transactions. This can only be selected for portfolios which have the <b>Cost-of-carry</b> switch turned on.</li> <li>• W/Collateral: collateral transactions. These transactions are generated from repo transactions. If this is not turned on, then only the cash (that is, depo/loan) part of repo transactions is included.</li> <li>• W/Cost-of-Carry/Collateral: both cost-of-carry and collateral transactions.</li> <li>• W/Cost-of-Carry/Order: both cost-of-carry and order transactions.</li> <li>• W/Order: order transactions.</li> </ul>

## B.13 Collateral Report

Parameter	Description
Period Start Period End	The start and end dates for the period for which you want the information to be displayed. Note: The default date range is "today to today".
Instrument	The instrument for which you want to view the report.
Currency	The currency for which you want to view the report.
Counterparty	The counterparty for which you want to view the report.



## B.14 Competitive Quote Report

Parameter	Description
Portfolio	The portfolio in which the transactions are made.
Instrument Group	The instrument group of the transaction.
Instrument	The instrument of the transaction. If you enter an instrument the report only displays transactions with this instrument.
Counterparty	The counterparty of the transaction.
Transaction State	The state that transactions must have reached to be included.
Opening Date From	The opening date from when you want to view the transactions.
Opening Date To	The opening date up until when you want to view the transactions.
Value Date From	The value date from when you want to view the transactions.
Value Date To	The value date up until when you want to view the transactions.
Collateral Number	The number of the underlying transaction.
Competitive Counterparty	The competitive counterparty of the transaction.

## B.15 Corporate Actions Update Log

Parameter	Description
Request	The name of the Corporate Action Update Request for which you want to generate the log.
Batch ID	Specific run of the activity, defined by a unique Batch ID, for which you want to generate the log.
Severity	Severity of the information shown in the log. Possible values are Error, Warning and Info.
Message Type	More detailed information about the type of information to show in the log. For example, you may want to view technical FTP Communication errors only, or business problems, such as errors when updating the instrument. You can filter the information based on the message type.
Layout	Layout of the report.

## B.16 Corporate Actions Update Report

Parameter	Description
Request	The name of the Corporate Action Update Request, for which you want to generate the list of received corporate actions and the list of subsequent instrument updates.
Batch ID	Specific run of the activity, defined by a unique Batch ID, for which you want to generate the list of all updated instruments.
Layout	Layout of the report.

## B.17 Custody Balance Report

Parameter	Description
Balance Period Start	The start date of the period for which you want to view custody information.
Balance Period End	The end date of the period for which you want to view custody information. Note: when Period Start is equal to Period End, the latest balances are displayed including back-dated balances.
Custodian	The client who is defined as Custodian and who is affected by the transaction viewed on the report. You must enter something in this field for the portfolio-owner's custody account number to be displayed on the report. The Custodian is defined in the <b>Roles</b> field in the upper part of Client Editor.
Owner	The portfolio-owner.
Custody Account	The portfolio owner's custody account number.
Instrument Group	The instrument group for which you want to view a custody balance report.
Instrument	The instrument for which you want to view a custody balance report.
Security Code Standard	The type of security identifier that you require: CUSIP, ISIN, or SEDOL.
Security Code	The specific security identifier of the custody, based on the standard specified in the previous field.

## B.18 Custody Reconciliation Report

Parameter	Description
Period Start	The first day of the period under analysis.
Period End	The last day of the period under analysis.
Client	The custodian for the report.
Custody	The custody for the report.
Account	The custody account.
Reconciliation Type	<ul style="list-style-type: none"> <li>Ignored Balances: all custody balances which have been ignored.</li> <li>Ignored Statements: all custody statements which have been ignored.</li> <li>Matched Balances: all custody balances which have been matched.</li> <li>Unmatched Balances: all custody balances which have not been matched.</li> <li>Unmatched Statements: all custody statements which have not been matched.</li> </ul>

## B.19 Data License Output Processing Report

Parameter	Description
Batch ID	Specific run of the activity, defined by a unique Batch ID, for which you want to generate the log.

Parameter	Description
Severity	Severity of the information shown in the log. Possible values are Error, Warning and Info.
Message Type	More detailed information about the type of information to show in the log. For example, you may want to view technical FTP Communication errors only, or business problems, such as errors when updating the instrument. You can filter the information based on the message type.
Layout	Layout of the report.

## B.20 Data License Prices Log

Parameter	Description
Batch ID	Specific run of the activity, defined by a unique Batch ID, for which you want to generate the list of all updated instruments.
Severity	Severity of the information shown in the log. Possible values are Error, Warning, Info and Summary.
Layout	Layout of the report.

## B.21 Data License Prices Import Log

Parameter	Description
Batch ID	Specific run of the activity, defined by a unique Batch ID, for which you want to generate the list of all updated instruments.
Severity	Severity of the information shown in the log. Possible values are Error, Warning and Info.
Layout	Layout of the report.

## B.22 Delivery Report

Parameter	Description
Opening Date	The opening date of the custody transaction.
Delivery Date	The delivery date of the custody transaction. If generated from a normal transaction, this date is the same date as the custody transaction.
Client	The portfolio owner of the custody transaction.
Portfolio	The portfolio to which the custody transaction belongs.

Parameter	Description
Custodian	The client who is defined as Custodian and who is affected by the transaction viewed on the report. You must enter something in this field for the portfolio owner's custody account number to be displayed on the report. The Custodian is defined in the <b>Roles</b> field in the upper part of Client Editor.
Custody Account	The account which belongs to the custodian.
Instrument	The instrument used in the transactions that you want to view.
Instrument Group	The instrument group used in the transactions that you want to view.
Number	The number of the transaction to be included in the report. Only enter something into this field if you want to view one transaction.
Collateral Number	The number used to group all transactions involved in the same collateral transaction.

## B.23 Drawdown Fixing Report

(Commercial loan use only)

## B.24 Event Diary Report

Parameter	Description
Period Start	The date from which information is displayed.
Period End	The date until when information is displayed.
Portfolio	The portfolio concerned.
Instrument Type	The instrument type for which you want to view the upcoming events.
Instrument	The instrument for which you want to view to view the upcoming events.
Transaction State	The state that transactions must have reached to be included.
Events	Select an event from the list. Events can include: all types of fixings, call or put exercises, triggered events, currency or transaction conversions, equity-related events, and option expirations or other types of option events.
Inactive Included	Yes or No according to whether you want to include inactive events in the report.

## B.25 History Log Report

Parameter	Description
Output File	
Output Mail	
Printer Name	

Parameter	Description
Layout	
Period Length	
User	The name of a single user to be included.
Action	The type of actions to be included: <ul style="list-style-type: none"> <li>• CREATE - new entities.</li> <li>• GRANT - portfolio permissions granted to a user.</li> <li>• MODIFY - modified entities.</li> <li>• REMOVE - deleted entities.</li> <li>• REVOKE - portfolio permissions revoked from a user.</li> </ul>

## B.26 Holidays Checking Report

Parameter	Description
From When Date	Date from which you want to check holidays.
Mode	Report.
Full	Short List or Full List. <ul style="list-style-type: none"> <li>• If you select Full List, all available data is displayed.</li> <li>• If you select Short List, only the entity (transaction number or instrument ID) affected by the holiday change is displayed.</li> </ul>

## B.27 Holidays for Period Report

Parameter	Description
Calendar Group	The ID of the calendar group for which you want to generate the report.
Start Date End Date	The period for which you want to view the defined holidays for the calendar group.
Maximum Rows	The maximum number of rows to display in the report.

## B.28 Import Market Information Log Report

Parameter	Description
Batch ID	Specific run of the activity, defined by a unique Batch ID, for which you want to generate the log.
Severity	Severity of the information shown in the log. Possible values are Error, Warning, Info and Summary.
Layout	Layout of the report.

## B.29 Instrument Delete Log

Parameter	Description
Request	The name of the Security Import Request, for which you want to generate the log and all deleted instruments.
Batch ID	Specific run of the activity, defined by a unique Batch ID, for which you want to generate the log.
Severity	Severity of the information shown in the log. Possible values are Error, Warning and Info.
Message Type	More detailed information about the type of information to show in the log. For example, you may want to view technical FTP Communication errors only, or business problems, such as errors when updating the instrument. You can filter the information based on the message type.
Layout	Layout of the report.

## B.30 Instrument Import Log

Parameter	Description
Request	The name of the Security Import Request, for which you want to generate the log.
Batch ID	Specific run of the activity, defined by a unique Batch ID, for which you want to generate the log.
Severity	Severity of the information shown in the log. Possible values are Error, Warning and Info.
Message Type	More detailed information about the type of information to show in the log. For example, you may want to view technical FTP Communication errors only, or business problems, such as errors when updating the instrument. You can filter the information based on the message type.
Layout	Layout of the report.

## B.31 Instrument Import Report

Parameter	Description
Request	The name of the Instrument Update Request, for which you want to generate the list of all updated instruments.
Batch ID	Specific run of the activity, defined by a unique Batch ID, for which you want to generate the list of all updated instruments.
Layout	Layout of the report.

## B.32 Instrument Update Log

Parameter	Description
Request	The name of the Instrument Update Request, for which you want to generate the log.
Batch ID	Specific run of the activity, defined by a unique Batch ID, for which you want to generate the log.
Severity	Severity of the information shown in the log. Possible values are Error, Warning and Info.
Message Type	More detailed information about the type of information to show in the log. For example, you may want to view technical FTP Communication errors only, or business problems, such as errors when updating the instrument. You can filter the information based on the message type.
Layout	Layout of the report.

## B.33 Instrument Update Report

Parameter	Description
Request	The name of the Instrument Update Request, for which you want to generate the list of all updated instruments.
Batch ID	Specific run of the activity, defined by a unique Batch ID, for which you want to generate the list of all updated instruments.
Layout	Layout of the report.

## B.34 Key Figure Report

Parameter	Description
Output File	
Output Mail	
Printer Name	
Layout	
Portfolio	Portfolio to be included.
Instrument Group Instrument Currency Currency Class Time Zone Opening Time Gap Set Counterparty Counterparty Group Issuer Issuer Group Trader	Use these parameters to filter the content of the report.

Parameter	Description
Figure Currency	The results are expressed in this currency. Defaults to the currency of the portfolio.
End Date P/L	Select how you want to handle cashflow settling on the valuation date: <ul style="list-style-type: none"> <li>• <b>Unrealized</b> - Cashflows settling on the Valuation Date are considered as not yet settled, i.e. they are valued normally (and profit figures are shown).</li> <li>• <b>Realized</b> - Cashflows settling on the Valuation Date are considered as settled, i.e. they display amount, market value and risk, but no profit figures are shown.</li> <li>• <b>Closing the Books</b> - Cashflows settling on the Valuation Date are ignored. This corresponds to valuation done in closing the books.</li> </ul>
Valuation Mode	Market valuation mode to be used: Default, Benchmark, or Theoretical.
Transaction State	The state that transactions must have reached to be included.
Scenario	Market data scenario to be used.
Package Valuation	
Result Mode	Result calculation mode (accounting standard) to be used. Only the result modes defined for the portfolio owner are available.
Context	Only these transaction types are to be included: <ul style="list-style-type: none"> <li>• <b>Default</b>: no cost-of-carry or collateral transactions.</li> <li>• <b>W/Collateral</b>: collateral transactions. These transactions are generated from repo transactions. If this is not set to on, then only the cash (that is, depo/loan) part of repo transactions is included.</li> <li>• <b>W/Cost-of-Carry</b>: cost-of-carry transactions. This can only be selected for portfolios that have the <b>Cost-of-carry</b> set to on.</li> <li>• <b>W/Cost-of-Carry/Collateral</b>: both cost-of-carry and collateral transactions.</li> <li>• <b>W/Cost-of-Carry/Order</b>: both cost-of-carry and order transactions.</li> <li>• <b>W/Order</b>: order transactions.</li> </ul>

## B.35 Limit Log Report

Parameter	Description
Output File	
Output Mail	
Printer Name	
Layout	
Period Length	
Limit Category	Select a limit category to filter the report content. If left blank, all categories are included.
Limit	Select a limit to filter the report content.



Parameter	Description
Log Entry Type	<p>Select a log entry type to filter the report content.</p> <ul style="list-style-type: none"> <li>• <b>All</b>: all updates and all violations.</li> <li>• <b>High-Low-Last</b>: the highest and lowest utilizations in the period, and the last log entry.</li> <li>• <b>Update</b>: log entries created as part of regular logging with a predefined time interval.</li> <li>• <b>Violation</b>: log entries created as a result of a limit violation.</li> </ul>
Violation Type	<ul style="list-style-type: none"> <li>• <b>Add Violation (Deal)</b>: where the log entries are created as a result of a new transaction breaching a limit (that is, where a log entry contains a causing number) and where the limit was breached before the transaction was entered.</li> <li>• <b>Add Violation (Rate)</b>: where the log entries are created as a result of a limit breached by market information update (that is, where a log entry does not contain a causing number) and where the limit was breached before the update was made.</li> <li>• <b>Log/Startup</b>: the log time interval was passed, the limit was exceeded, but not added to. If the log interval was not passed, it would not have been logged as the limit amount did not increase.</li> <li>• <b>New Violation (Deal)</b>: where the log entries are created as a result of a new transaction breaching a limit (that is, where a log entry contains a causing number) and where the limit was not breached before the transaction was entered.</li> <li>• <b>New Violation (Rate)</b>: where the log entries are created as a result of a limit breached by market information update (that is, where a log entry does not contain a causing number) and where the limit was not breached before the update was made.</li> </ul> <p>Note: If left blank, then all the above are included by default.</p>

## B.36 Periodic P/L Report

Parameter	Description
Output File	
Output Mail	
Printer Name	
Layout	
Period Length	
Portfolio	<p>The portfolio to be included.</p> <p>If a parent portfolio is selected, all the subportfolios are also included.</p>
Instrument Group Instrument Currency Currency Class Time Zone Opening Time Gap Set Counterparty Counterparty Group Issuer Issuer Group Trader	<p>Use these parameters to filter the content of the report.</p>

Parameter	Description
Figure Currency	The results are expressed in this currency. Defaults to the currency of the portfolio.
End Date P/L	Select how you want to handle cashflow settling on the valuation date: <ul style="list-style-type: none"> <li>• <b>Unrealized</b> - Cashflows settling on the Valuation Date are considered as not yet settled, i.e. they are valued normally (and profit figures are shown).</li> <li>• <b>Realized</b> - Cashflows settling on the Valuation Date are considered as settled, i.e. they display amount, market value and risk, but no profit figures are shown.</li> <li>• <b>Closing the Books</b> - Cashflows settling on the Valuation Date are ignored. This corresponds to valuation done in closing the books.</li> </ul>
Valuation Mode	Market valuation mode to be used: Default, Benchmark, or Theoretical.
Transaction State	Minimum state that transactions must have reached to be included.
Start Scenario End Scenario	
Package Valuation	
Result Mode	Result calculation mode (accounting standard) to be used. Only the result modes defined for the portfolio owner are available.
Context	Only these transaction types are to be included: <ul style="list-style-type: none"> <li>• <b>Default</b>: no cost-of-carry or collateral transactions.</li> <li>• <b>W/Collateral</b>: collateral transactions. These transactions are generated from repo transactions. If this is not set to on, then only the cash (that is, depo/loan) part of repo transactions is included.</li> <li>• <b>W/Cost-of-Carry</b>: cost-of-carry transactions. This can only be selected for portfolios that have the <b>Cost-of-carry</b> set to on.</li> <li>• <b>W/Cost-of-Carry/Collateral</b>: both cost-of-carry and collateral transactions.</li> <li>• <b>W/Cost-of-Carry/Order</b>: both cost-of-carry and order transactions.</li> <li>• <b>W/Order</b>: order transactions.</li> </ul>

## B.37 Rate Report

Parameter	Description
Period Start Period End	The period for which you want to view the rates (default is today). If no quotations exist for the period you specify, the most recent quotations are included in the report.
MI Group	Market Info group (subset of rates in a scenario) that you want to view. For all rates in the scenario, leave this field blank. The values here are those that were entered in Market Info Source Editor.
Scenario	Name of the scenario containing the quotations you want to analyze.
Instrument	Instrument for which you want to view the quotations. If you enter an instrument, the report only displays quotations for this instrument.
Rate Type	Type of quotation.

## B.38 Rate Comparison Report

Parameter	Description
First Date Second Date	Use the First Date and Second Date fields to specify the two dates whose rates you want to compare.
Portfolio	Specific portfolio containing the instruments you want to view.
MI Group	MI group (subset of rates in a scenario) that you want to view (for all rates in the scenario, leave this field blank). The values here are those that were entered in Market Info Source Editor.
Scenario	Name of the scenario containing the quotations you want to analyze.
Instrument Group	Instrument group you want to analyze.
Instrument	Instrument for which you want to view the quotations. If you specify an instrument, the report only displays quotations for this instrument.
Rate Type	Type of quotation you want to view.

## B.39 Rate Log Report

Parameter	Description
Date Type	Select either Logging Date or Effective Date. <ul style="list-style-type: none"> <li>Logging Date: the query is against the date_time field. The exact time is stored here, and so the value you enter in <b>Period Start</b> is considered as the first second of the day, and the value entered in <b>Period End</b> is considered as the last second of the day.</li> <li>Effective Date: the query is against date field.</li> </ul>
Period Start	The start date of the period you want to view.
Period End	The end date of the period you want to view.
Scenario	Name of the scenario containing the quotations you want to analyze.
Instrument	Instrument for which you want to view the quotations. If you enter an instrument the report only displays quotations for this instrument.
Rate Type	Type of quotation.

## B.40 Realize Account Interest Report

Parameter	Description
Interest Date	The date on which the interest is realized.
Payment Date	The date on which the accrued interest is paid.
Client	The owner of the account.
Counterparty	The counterparty of the account (for balances that are stored by counterparty, the <b>Balance by Counterparty</b> switch is set for the account in Client Editor).

Parameter	Description
Portfolio	The balance portfolio of the account.
Bank	The name of the bank involved.
Account	The account from into which the accrued interest is paid.
Currency	The currency in which the accrued interest is paid.
Transaction State	The state that transactions must have reached to be included.
Payment Instructions	Here you select whether you want the accrued interest paid into the account itself, or whether you want to make new instructions.

## B.41 Reconciliation Report

Parameter	Description
Period Start	The first day of the period under analysis.
Period End	The last day of the period under analysis.
Portfolio	The balance portfolio containing the payments for which the report is going to be viewed.
Owner	The owner of the portfolio.
Bank	The bank of the portfolio owner.
Currency	The currency of the cash flows to be included in the report.
Currency Class	The currency class for the cash flows to be included in the report.
Currency Group	The currency group of the cash flows to be included in the report.

## B.42 Reconciliation Log Report

Parameter	Description
Period Start	The first day of the period under analysis.
Period End	The last day of the period under analysis.
Portfolio	The balance portfolio containing the payments for which the report is going to be viewed.
Owner	The owner of the portfolio.
Bank	The bank of the portfolio owner.
Currency	The currency of the cash flows to be included in the report.
Currency Class	The currency class for the cash flows to be included in the report.
Currency Group	The currency group of the cash flows to be included in the report.

## B.43 Renaming Client ID Report

Parameter	Description
Client ID	ID of the client for which you want to generate the report.
Category	Category for which you want to view the occurrences of the client ID in the system: for example, By Table, Bank Accounts, Custody Accounts, Rules, Limits, Instruments, or Transactions.

## B.44 Security List Import Log

Parameter	Description
Request	The name of the Security List Import Request, for which you want to generate the log.
Batch ID	Specific run of the activity, defined by a unique Batch ID, for which you want to generate the log.
Severity	Severity of the information shown in the log. Possible values are Error, Warning and Info.
Message Type	More detailed information about the type of information to show in the log. For example, you may want to view technical FTP Communication errors only, or business problems, such as errors when updating the instrument. You can filter the information based on the message type.
Layout	Layout of the report.

## B.45 Settlement Report

Parameter	Description
Transaction	Specific transaction to be included.
Portfolio	The portfolio to be included. If a parent portfolio is selected, all the subportfolios are also included.
Currency	Currency of the settlements to be included.
Currency Class	Currency class of the settlements to be included.
Currency Group	Currency group of the settlements to be included.

## B.46 Settlement Cashflows Report

Parameter	Description
Transaction	Specific transaction to be included.
Settlement	Specific settlement to be included.

Parameter	Description
Portfolio	The portfolio to be included. If a parent portfolio is selected, all the subportfolios are also included.
Currency	Currency of the settlements to be included.
Currency Class	Currency class of the settlements to be included.
Currency Group	Currency group of the settlements to be included.

## B.47 Settlement Instructions Chain Report

Parameter	Description
Client	Client ID for which you want to view the chain of settlement instructions. (Mandatory)
Currency	Currency for which you want to view the chain of settlement instructions.

## B.48 Settlement Log Report

Parameter	Description
Log Period Start	First day of the period under analysis.
Log Period End	Last day of the period under analysis.
Transaction Number	Number of the transaction queried.
Payment ID	Identifier number of the payment.
Payment Date	Date of the payment.
Our Client	Client (portfolio owner) making the settlement.
Our Bank	Bank where the debit account is held.
Our Account	Bank account debited because of the payment.
Our Counterparty	Client (counterparty) receiving the settlement.
Counterparty Bank	Bank where the credit account is held.
Counterparty Account	Bank account credited due to the payment.
Transfer Type	Type of transfer used.
User	ID of the user who modified the payment.

## B.49 Transaction Conditions Report

Parameter	Description
Number	The number of the transaction on which you want to run the report or leave blank for all transactions.
Opening Date From/To	The opening date of the transactions or leave blank for all dates.
Value Date From/To	The value date of the transactions or leave blank for all dates.
Trader	Show only transactions entered by a single user or leave blank for all users.
Portfolio	Show only transactions from this portfolio or leave blank for all portfolios.
Transaction Condition	Show only this condition or leave blank for all conditions.
Limit Type	Not implemented in this version
Condition Type	Not implemented in this version
Active	Select <b>Yes</b> to show only active limits or <b>No</b> to show all limits.
Breached	Select <b>Yes</b> to show only breached limits and conditions or <b>No</b> to show all of them, i.e. breached and not breached.

## B.50 Transactions Report

Parameter	Description
Output File	
Output Mail	
Printer Name	
Layout	
Portfolio	Portfolio in which the transactions are made.
Instrument Group	Instrument group to be included.
Instrument	Instrument to be included.
Counterparty	Counterparty to be included.
Collateral Number	The collateral number of the transactions to be included.
Opening Date Offset	
Opening Period Length	
Value Date Offset	
Value Period Length	
Transaction State	State the transactions must have reached to be included.

## B.51 Transaction Log Report

Parameter	Description
Output File	
Output Mail	
Printer Name	
Layout	
Date Type	<ul style="list-style-type: none"> <li>• <b>Logging Date:</b> the date and time the transaction was updated.</li> <li>• <b>Value Date:</b> the official date when money was transferred.</li> <li>• <b>Opening Date:</b> the first date the transaction is taken into account in calculations.</li> </ul>
Period Length	
Number	The number of a single transaction to be the subject of the report.
Portfolio	Portfolio to be included.
Instrument	Instrument to be included.
Trader	Trader name. Only include transactions created/modified by this trader.
Counterparty	Counterparty to be included.
Collateral Number	The collateral number of the transactions to be included.

## B.52 Transaction Market Rate Report

Parameter	Description
Transaction Number	<p>Transaction number of a trade if you want to view all market data associated with a particular transaction.</p> <p>The report displays the market data for each time the trade was applied in the Front Office and contains all price columns relevant to the transaction.</p> <p>Note: The Push Prices switch must be turned on for the portfolio: see <i>3.14.1.1 Setting further portfolio attributes</i> on page 108.</p>



It is possible to alter the start-up parameters when launching applications in TRM so that they appear in a different mode or layout.

## C.1 Activity Manager

The available options can be viewed using the command:

```
FKActivityManager.exe --help
```

Command	Description
-M [ --mode ] arg	Display the activity mode name. Activity modes are set up in Activity Mode Editor by the system administrator.
--empty	Do not fetch activity list at start-up.

## C.2 Application Manager

The available modes can be viewed using the command:

```
FKApplicationManager.exe --help
```

Command	Description
-T [ --title ] arg : Program title	Display the name of the application in the application's title bar.
-m [ --theme ]	Enable the Themes menu item in the application's toolbar.
-V [ --version ] arg : Program version	Display the name of the application and the environment in which TRM is running in the application's title bar.

## C.3 FX Forward Pricing

The available options can be viewed using the command:

```
FKFXPricing.exe --help
```

Menu item	Description
--title arg (=FX Pricing)	Application title.

## C.4 Limit Monitor

The available modes can be viewed using the command:

```
FKLimitMonitor.exe --help
```

Command	Description
--servers arg	Connect to specified limit servers.
--listening arg	Listening Limit Monitor.
--book-name arg	Startup book's name.
--page-index arg	Startup page's index.
--title arg	Program title.

## C.5 Limit Notifications

The available options can be viewed using the command:

```
FKLMNotify.exe --help
```

Command	Description
--restore arg	Set the option <b>Restore On New Message</b> .
--show arg	Set the option <b>Show Immediately</b> .
--ring arg	Set the option <b>Ring Bell</b> .
--own-notifications arg	Set the option <b>Own Notifications</b> .
--freeze-options	Freeze the entire <b>Options</b> menu to prevent users from making changes to the option settings.
--freeze-start-up-options	Freeze the items in the <b>Options</b> menu which have been explicitly given on the command line (set or not set) to prevent users from making changes to these option settings, but leaves other options open for modifications by the user. In order to prevent users from making changes to an option without setting it on the command line, the option must be given on the command line with argument '0' (e.g. --ring 0).
--servers arg	Connect to specified limit servers.
--violation-types arg	Specify the violation types you wish to see. Value is a bit string (OR'd values of 1 << violation_type from LimitLog table).

---

**Note:** To limit the number of notifications you receive, you can restrict the violation types that cause notifications by specifying xyz in the command line parameter A.

---

## C.6 Performance Monitor

The available options can be viewed using the command:

FKPerformanceMonitor.exe --help

Command	Description
--service arg	CORBA Performance Monitor Service.
--book-name arg	Start-up book's name.
--book-user arg	Start-up book's user.
--book-owner arg	Start-up book's owner.

## C.7 Portfolio Modeling Monitor

The available options can be viewed using the command:

FKPMMonitor.exe --help

Command	Description
--mode arg	Mode for transaction generation.
--title arg	Program title.
--start-date arg	Default start date.
--service-arg	CORBA PM Monitor Service.
--book-name arg	Start-up book's name.
--book-user arg	Start-up book's user.
--book-owner arg	Start-up book's owner.
--skip-init	Skip the init dialog.

## C.8 Rate Monitor

The available options can be viewed using the command:

FKMonitor.exe --help

Command	Description
--nort	Disable real-time updates.
-s [ --service ] arg	Service.
--layout-compatibility-mode	Load main window size and position per application title, ignoring the main window size and position stored in individual layouts.
-c [ --config ] arg	Configuration file. Defines the business modules and configuration options that are available for the monitor.
-r [ --rate ] arg	Rate.
--start-date arg	Default start date for the period you want to view the quotations (in yyyy-mm-dd).

Command	Description
<code>--end-date arg</code>	Default end date for the period you want to view the quotations (in yyyy-mm-dd).
<code>--no-fractions</code>	Allow users to enter and view prices for instruments with a configured Default Price Denominator in the standard way i.e. not as fractions.

## C.9 Report Generator

The available options can be viewed using the command:

```
FKReport.exe --help
```

Command	Description
<code>--title arg</code>	Application title.
<code>-T [ --type ] arg</code>	Report type to open.
<code>-F [ --file-name ] arg</code>	Report document to open. It is possible to launch Report Generator with the argument <code>--file-name &lt;layout&gt;</code> . The layout can be saved with the report start-up parameters.
<code>-p [ --print ]</code>	Print report on default printer and exit.
<code>-o [ --output ] arg</code>	Export report to file-name and exit.
<code>-n [ --printer-name ] arg</code>	Printer to use.
<code>-P [ --param ] arg</code>	List of start-up parameters.

## C.10 Static Data Editor

The available options can be viewed using the command:

```
FKSDEditor.exe --help
```

Command	Description
<code>-L [ --layout ] arg</code>	Editor layout to open.
<code>-T [ --layout-mode ] arg</code>	Layout mode <code>&lt;fixed manual automatic&gt;</code>
<code>-F [ --fixed-entity ]</code>	Allow only layouts within the same entity.
<code>-E [ --empty ]</code>	Do not fetch entity list at start-up.
<code>--no-list-view</code>	Do not display list view in the left editor pane.
<code>--no-tree-view</code>	Do not display group tree view in the left editor pane.
<code>--no-hier-view</code>	Do not display hierarchy tree view in the left editor pane.
<code>--entity-key arg</code>	Use this as the key to the entity.
<code>--new-entity</code>	Create new entity immediately upon opening.

Command	Description
--read-only	Do not allow data modification. This parameter displays all fields in read-only mode and disables the Save, Save As, and Delete menu items.
--startup-query arg	Execute a query immediately upon startup.
--sdm-mode	Show non-finalized entity data.

## C.11 Transaction Manager

The available options can be viewed using the command:

```
FKTransactionManager.exe --help
```

Command	Description
-m [ --mode ] arg	Transaction Manager mode.
-s [ --service ] arg	Service.
-v [ --view ] arg	Add-on view paths. For example, include: --view settlement-credit-debit-processing or --view settlement-credit-debit-reconciliation to use the specific Credit/Debit Client view in Settlement Processing or Settlement Reconciliation respectively.
--chart	Enable charting support.
--nort	Disable real-time updates.
--noincomingrt	Disable incoming real-time updates.
--fixing	Default fixing date. If this command is set, the Fixing/Action Date of each query row defaults to today's date. When executing the query, only fixable transactions are retrieved.
-r [ --refresh ]	Default refresh date.
-q [ --query ]	Allow empty queries. This command enables transactions to appear automatically in the respective mode after the user commits.
--noinit	Do not load Transaction Manager configuration at start-up. This command instructs Transaction Manager to skip loading of any previously saved configuration from the database, and to start the application with the default configuration.
--layout-compatibility-mode	Load main window size and position per application title, ignoring the main window size and position stored in individual layouts.
-c [ --config ] arg	Configuration file.
--start-up action arg	Name and parameters of the action to execute immediately upon start-up.
--ui-start-up action arg	Name and parameters of the action with the UI to execute immediately upon start-up.

Command	Description
-g [ --group ] arg	Restrict instrument lists in Transaction Manager to only include instruments belonging to the specified instrument groups. This command is used to restrict the instruments available to input deals (for example, -g/CASH -g/FX/SPOT). The Instrument Group field is frozen in the query and the query is automatically filtered according to the start-up groups.
-u [--all-umi]	Use full instrument lists including inactive instruments. By default, without this option, inactive instruments are filtered out from the lists.
--no-query-limit	By default, Transaction Manager retrieves a maximum of 10 000 transactions at a time. You can specify this parameter to switch off this limit.
-d [ --discovery]	Enable the <b>Discovery Console</b> option in the <b>Options</b> menu.

## C.12 Treasury Monitor

The available options can be viewed using the command:

```
FKTreasuryMonitor.exe --help
```

Command	Description
-M [ --mode ] arg	Monitor mode.
-P [ --portfolio ] arg	Default portfolio.
-C [ --currency ] arg	Default currency.
--state arg	Default state.
--start-date arg	Default start date.
--end-date arg	Default end date.
--start-scenario arg	Default start scenario.
--end-scenario arg	Default end scenario.
--valuation-mode arg	Default valuation mode.
--var-scenario arg	Default VaR Scenario.
--var-date arg	Default VaR Date.
--var-horizon arg	Default VaR Horizon.
--var-confidence-level arg	Default VaR Confidence Level.
--context arg	Default Context Group.
--state-context arg	Default State Context.
--secs arg	Remove update menus up to given seconds.
--valuation-interval arg	Valuation interval (in seconds) to use when no-real-time is supplied. If this is set to zero, attempts to disable real-time are overridden.

Command	Description
<code>--closing-the-books</code>	Replaces the <b>Realized</b> Start/End Date Valuation parameter with the <b>Closing the Books</b> parameter.
<code>-R [ --no-real-time ]</code>	Don't set real-time as default.
<code>--service arg</code>	CORBA Treasury Monitor service.
<code>--book-name arg</code>	Start-up book's name.
<code>--book-user arg</code>	Start-up book's user.
<code>--book-owner arg</code>	Start-up book's owner.
<code>--position arg</code>	Start-up position's name.
<code>--position-user arg</code>	Start-up position's user.
<code>--position-owner arg</code>	Start-up position's owner.
<code>--counterparty arg</code>	Start-up position's counterparty.
<code>--drawdown arg</code>	Start-up position's drawdown.
<code>--facility arg</code>	Start-up position's facility.
<code>--skip</code>	Skip the init dialog.

## C.13 VaR Data Board

The available options can be viewed using the command:

```
FKVaRBrowser.exe --help
```

Command	Description
<code>--title arg (=Va R Browser)</code>	Application title.





## D.1 Client Editor

See also 3.13 *Clients* on page 89.

### D.1.1 Client role mapping

A TRM client is mapped to a CMM client according to roles. If the TRM role is empty (set to **No CMM Replication**) then the client is not replicated. Otherwise, the CMM client's fields `party_type` and `external_party_type` values are assigned according to the following rules:

Table D-1 **Party Type**

TRM Setup	Party Type
Client has role ACCOUNT-HOLDER or PORTFOLIO-OWNER	Internal
Client does not have role ACCOUNT-HOLDER nor PORTFOLIO-OWNER	External

Table D-2 **External Party Type**

TRM Setup	External Party Type
Client has role ACCOUNT-HOLDER	BANK
Client does not have role ACCOUNT-HOLDER but does have role PORTFOLIO-OWNER	COUNTERPARTY
Client does not have role ACCOUNT-HOLDER or PORTFOLIO-OWNER but does have role BANK and there exists at least one 'Party Relationship' where 'Relationship' has value 'AGGR'	AGGRBANK
Client does not have role ACCOUNT-HOLDER or PORTFOLIO-OWNER but does have role BANK and there does not exist any 'Party Relationship' where 'Relationship' has value 'AGGR'	BANK
Client does not have role ACCOUNT-HOLDER or PORTFOLIO-OWNER or BANK	COUNTERPARTY

### D.1.2 Preventing client replication

To prevent a client created in SDM from being replicated in CMM, select **No CMM Replication**.

### D.1.3 Mapping of SDM Counterparty - CMM Party entity

#### D.1.3.1 SDM entity - Client

SDM value	CMM value
<code>client_id</code>	<code>party_ID</code> - Party ID ID of the CMM party.
<code>no_cmm_replication_p</code> No CMM Replication	If this switch is on ( <code>no_cmm_replication_p = 'true'</code> ) then the client is not replicated in CMM.

SDM value	CMM value
short_name	short_name - Short Name Short form of the entity's name. This form of the entity's name is used in most of CMM's Entity and Counterparty selection lists.
country_id	country_code - Country Country of the CMM party.
name	long_name - Long Name Long form of the CMM party's name. This form is used in some of CMM's reports.
name	party_description (removed from CMM)
swift_code	swift_code - Swift Code SWIFT code of the CMM party.
city	city - City City of the CMM party.
parent_id	parent_party_id - Parent Party Parent of the CMM party or None Selected (if the party does not have a parent).
roles	See <i>D.1.1 Client role mapping</i> on page 689.

### D.1.3.2 SDM entity - ClientExtra

SDM value	CMM value
ce_ihb_owner_id	ihb_owner_party_id (removed from CMM)
ce_aba_code_id	aba_code - ABA Code ABA code of the CMM party.
ce_region_id	region_id - Region Region of the CMM party.
ce_functional_currency_id	functional_currency_code - Functional Currency Currency of the CMM party.
ce_incorp_state	state_of_incorporation - State of Incorporation State of incorporation of the CMM party. In CMM, the term "state" applies to states, provinces, cantons, and other divisions of countries.
ce_industry_code_id	industry_code_id - Industry Code Industry of the CMM party.
ce_tax_status_code_id	legal_tax_status_code - Legal Tax Status Code Legal tax status of the CMM party.
ce_tax_id	tax_id - Tax ID Legal tax identifier of the CMM party.
ce_incorp_country_id	country_of_incorporation - Country of Incorporation Country of incorporation of the CMM party.

### D.1.3.3 SDM entity - ClientAccount

SDM value	CMM value
no_cmm_replication_p No CMM Replication	If this switch is on (no_cmm_replication_p='true') then the ClientAccount is not replicated to CMM.
cmm_hierarchy_only_p Hierarchy Only	If this switch is on then the bank account is defined as a virtual account. Virtual bank accounts are used in bank account relationships where you want to use the bank account as a parent but do not want users to process activity in it.
message_group_id	Message group used to replicate client accounts to CMM. <ul style="list-style-type: none"> <li>• If message_group_id&lt;&gt;'CMM-CONTACT' then the ClientAccount is not replicated to CMM.</li> <li>• If multiple ClientAccount have CMM-CONTACT message group then only the first one is replicated.</li> </ul>
p_acct_type	primary_type_id (computed)
primary_type_id	primary_acct_number_type - [Primary] Account Number Type Primary account type number (used in confirmation documents). The only value it can contain in CMM is BBAN.
id	primary_acct_number - Primary Account Number The entity bank account's BBAN.
secondary_type_id	secondary_acct_number_type - [Secondary] Account Number Type Secondary account number type (used in confirmation documents). The only value it can contain in CMM is IBAN.
secondary_id	secondary_acct_number - Secondary Account Number The entity bank account's IBAN. If secondary_id is empty then secondary_type_id is set to 0 <ul style="list-style-type: none"> <li>• Else, if secondary_type_id (from TRM) = 'BBAN' then secondary_type_id is set to 1</li> <li>• Else, secondary_type_id is set to 2</li> </ul>
bank_id	bank_id - Bank The bank account's bank.
account_type_id	bank_acct_type_id - Account Type The bank account's type.
currency_id	currency_code - Currency Currency of the bank account.
client_id	party_id - Entity/Counterparty Owner of the bank account.
name	bank_acct_name - Account Name Name of the bank account.
account_group_id	group_bank_account_id (removed from CMM)
zero_balance_p pool_account_p	Used in cash pools and account sweeping. <ul style="list-style-type: none"> <li>• If zero_balance_p is true then policy_type_id = 1</li> <li>• Else, if pool_account_p is true then policy_type_id = 2 <ul style="list-style-type: none"> <li>- Else, policy_type_id = 0</li> </ul> </li> </ul>

#### D.1.3.4 SDM entity - ClientAddress

SDM value	CMM value
line_1 line_2 line_3 line_4	address1 / address2 / address3 / address4 Address of the CMM party.
address_type_id Address Type	CMM does not store the value from this field. However, if all four Address Types (ACCOUNT, PAYMENT, POSTAL, STREET) are available from the TRM client, CMM will populate the four Address fields for the CMM party with the values found in the Street/PO Box (Line Two) and City (Line Three) fields, from the STREET address type entry. The STREET address type has the highest priority.
post_code	postal_code - Postal Code Postal or zip code of the CMM party.
state	state - State State of the CMM party.
country_id	country - Country Country of the CMM party.

#### D.1.3.5 SDM entity - ContactPerson

SDM value	CMM value
message_group_id	Only the first ContactPerson with message_group_id='CMM-CONTACT' is mapped to the following fields.
phone	phone_number - Phone Voice The person's telephone number.
fax	fax_number - Fax The person's fax number.
e_mail	email_account - E-mail The person's e-mail address.
client_id	party_id - Entity/Counterparty The person's party.
name (truncated after the first space char)	last_name - Last Name The person's last name.
name (truncated after the first space char)	first_name - First Name The person's first name.
rule_id	external_id - External ID The person's external ID.
info	job_id - Job The person's employee role.

### D.1.3.6 SDM entity - ClientCreditRating

SDM value	CMM value
code_id	rating_code (removed from CMM)

### D.1.3.7 SDM entity - ClientRelationshipMap

SDM value	CMM value
Child	Used to organize entities into hierarchical relationships. This field maps to a CMM party that is the child client of the current client.
Relationship	Used to organize entities into hierarchical relationships. Entity Relationship Types define the nature of the hierarchies (for example, legal, operational, regional, and so on).
Report Weight Percentage	Used to organize entities into hierarchical relationships. The client Report Weight Percentage maps to the weighting percentage of the entity relationship.

## D.2 Country Editor

See also *3.5 Countries* on page 59.

### D.2.1 Mapping of Country entity

#### D.2.1.1 SDM entity - Country

SDM value	CMM value
country_id	country_code - Country Code ID of the country. Use the country's ISO code if appropriate.
name	country_name - Country Name Name of the country.

#### D.2.1.2 SDM entity - CountryExtra

SDM value	CMM value
ce_currency_id	national_currency_code - National Currency Currency for the country.
ce_max_branch_code_length	max_len_branch_code - Maximum Length of Branch Code The maximum length for branch codes in the country.
ce_min_branch_code_length	min_len_branch_code - Minimum Length of Branch Code The minimum length for branch codes in the country.
ce_max_account_length	max_len_bank_code - Maximum Length of Bank Account The maximum length for bank account numbers in the country.
ce_min_account_length	min_len_bank_code - Minimum Length of Bank Account The minimum length for bank account numbers in the country.

SDM value	CMM value
ce_buba_country_code	german_central_bank_cntry_code - German Central Bank Country Code The country's code as provided by the German central bank.
ce_sort_code_p	bank_sort_code_required - Bank ABA/Branch Code Required Switch on to indicate whether the branch code is required.
ce_branch_an_p	char_allowed_branch - Branch Code Alphanumeric Allowed Switch on to indicate whether branch codes can include both letters and numbers.
ce_account_an_p	char_allowed_bank_acct - Basic Account Number Alphanumeric Allowed Switch on to indicate whether BBANs can include both letters and numbers.

## D.3 Currency Editor

See also 3.9 *Currencies* on page 80.

### D.3.1 Mapping of Currency entity

#### D.3.1.1 SDM entity - Currency

SDM value	CMM value
id	currency_code - Currency Code ID of the currency.
name	currency_name - Currency Name Name of the currency.

#### D.3.1.2 SDM entity - CurrencyJournal

SDM value	CMM value
amount_precision	digits_right_of_decimal - Number of Decimals Number of decimal places to which cashflow amounts in this currency are rounded.

#### D.3.1.3 SDM entity - CurrencySetup

SDM value	CMM value
The name_id of the CurrencySetup when type_id='Default Curve' is used.	interest_rate_category_id - Yield Curve The currency's yield curve (or interest rate category).

## D.4 Calendar Group Editor

See also 3.25 *Calendar groups (optional)* on page 134.

Calendar Group in TRM is used to identify all holidays that will be linked to a particular country in CMM. In this version of TRM, the data must be captured separately in CMM if the CMM Calendar is to be used.

## D.5 Gap Editor

See also 3.7 Gaps (time intervals) on page 62.

### D.5.1 Mapping to CMM Interest Rate Type entity

#### D.5.1.1 SDM entity - RatePeriod

SDM value	CMM value
period_id	shortname - Short Description The interest rate type's short description.
id	interestrategyid - Category/Curve The interest rate type's interest rate category.
gap_start_period_s	Point on Curve The point on the yield curve (interest rate category) where the interest rate type is positioned. <ul style="list-style-type: none"> <li>If gap_start_period_s='Spot' or if gap_start_period_s then dayforward is set to 0</li> <li>- Else dayforward is set to the value of gap_start_period_s</li> </ul>
gap_start_unit_sid	Forward Units The interest rate type's forward units. Possible values are: Days, Months, Years. <ul style="list-style-type: none"> <li>If gap_start_unit_sid='Business Days' then forwardunit is set to 'Days'</li> <li>- Else forwardunit is set to the value of gap_start_unit_sid</li> </ul>

## D.6 Settlement Advice Method Editor

See 18.2.1.2 Defining settlement methods on page 507.

### D.6.1 Mapping of Settlement Advice Method entity

#### D.6.1.1 SDM entity - PaymentAdviceType

SDM value	CMM value
send_to_cmm_p Send to CMM	If this switch is on (send_to_cmm_p = 'true'), then the PaymentAdviceType is replicated to CMM. Send to CMM defines which settlements create cash records in CMM (either to be released in CMM or to allow the cash position to be updated in CMM).

## D.7 Yield Curve Editor

See also 3.8 IR quotes and yield curves on page 64.

### D.7.1 Mapping to CMM Interest Rate Category entity

#### D.7.1.1 SDM entity - ReferenceRate

SDM value	CMM value
is_cmm_curve_p	If this switch is off (is_cmm_curve_p = 'false') then the reference rate is not replicated to CMM.
id	shortname - Name The interest rate category's name.
name	interestrategydesc - Description A descriptive name for the interest rate category.

## D.8 CMM static data entities

For details about the information required to create CMM static data entities, see the *CMM User Guide*.

### D.8.1 CMM Instrument Category Editor

SDM value	CMM value
instrumentcategoryid	instrument_category_id - ID ID of the instrument category.
name	name - Name Name of the instrument category.

### D.8.2 CMM Instrument Type Editor

SDM value	CMM value
instrumenttypeid	instrument_type_id - Type ID ID of the instrument type.
name	name - Name Name of the instrument type.
instrumentcategoryid	instrument_category_id - Instrument Category The instrument type's parent instrument category. In CMM, instrument types are children of instrument categories.
payment_or_receipt	payment_or_receipt - Payment or Receipt The instrument type's transaction type. Possible values are: <ul style="list-style-type: none"> <li>• Payment - if the instrument type only applies to payments</li> <li>• Receipt - if the instrument type only applies to receipts</li> <li>• All - if the instrument type applies to both payments and receipts.</li> </ul>



SDM value	CMM value
displayable	displayable - Status The instrument type's status. Possible values are: <ul style="list-style-type: none"> <li>Enabled - to display the instrument type in Cash Flow Type lists throughout CMM</li> <li>Disabled - to not display the instrument type in Cash Flow Type lists throughout CMM.</li> </ul>
posting_rule_selection_level	posting_rule_selection_level - Posting Rule Selection Level The instrument type's posting rule selection level. Possible values are: <ul style="list-style-type: none"> <li>Merge Category &amp; Type</li> <li>Use Only Type</li> <li>Use Only Category.</li> </ul>
trm_instrument_group	trm_instrument_group TRM instrument group to which the instrument type belongs.

### D.8.3 CMM Payment Method Editor

SDM value	CMM value
paymentmethodcode	payment_method_code ID of the payment method.
paymentmethodshortname	payment_method_short_name Name of the payment method.
releaseable_p	is_releaseable Switch on to indicate if transactions assigned the payment method can be released to banks for processing.
req_cp_info_p	requires_cpty_bank_account_info Switch on to indicate if transactions assigned the payment method require counterparty bank information.
displayable_p	displayable Switch on to indicate if the payment method is included in Payment Method lists throughout CMM.
positive_pay_indicator_p	positive_pay_indicator Switch on to indicate if the payment method is available for use with positive payments.

### D.8.4 CMM Region Editor

SDM value	CMM value
id	region_id - ID ID of the region.
description	region_name - Name Name of the region.

### D.8.5 CMM Industry Code Editor

SDM value	CMM value
id	industry_code - Industry Code ID of the industry.
description	industry_name - Industry Name Name of the industry.

### D.8.6 CMM Relationship Type Editor

CMM relationship type entities created in SDM are identical to those in CMM.

### D.8.7 CMM Bank Account Group Editor

CMM Bank Account Group entities will be replaced by CMM Relationship Type entities (see the *CMM User Guide* for more information). Therefore, if implementing CMM for the first time, use relationship type entities rather than bank account group entities.

## E.1 RMI mapping strategies

### E.1.1 RM template

#### E.1.1.1 Fixed rate instruments

TRM instrument	RM Template	Mapping
Discount papers	DiscountPaper	one-to-one
Forward discount papers	ForwardDiscountPaper	one-to-one
Short term loans and deposits	ShortTermLoanAndDepo	one-to-one
Fixed rate bonds	FixedRateBond	one-to-one
Zero coupon bonds	ZeroCouponBond	one-to-one
Japanese registered T-bills	JapaneseRegisteredTBill	one-to-one
Long term loans and deposits	LongTermLoanAndDepo	one-to-one
Facilities	Facility	one-to-one
Bond forwards	BondForward	one-to-one
Bonds futures	BondFuture SwapFuture	one-to-one
Australian bonds futures	AustralianBondFuture	one-to-one
Australian short futures	AustralianShortFuture	one-to-one
Asset/Mortgage backed securities	MortgageBackSecurity	one-to-one
South African bonds	SouthAfricanBond	one-to-one
South African fixed rate loans	SouthAfricanLoan	one-to-one
Forward rate agreements (FRAs)	ForwardRateAgreement	one-to-one
Interest rate futures	InterestRateFuture	one-to-one
Callable bonds	CallableBond	one-to-one
Call money	CallMoney	Risk-equivalent cashflows

#### E.1.1.2 Floating rate instruments

TRM instrument	RM Template	Mapping
Floating rate notes	FloatingRateNote	one-to-one
Floating rate loans/deposits	FloatingRateLoanAndDepo	one-to-one

TRM instrument	RM Template	Mapping
Negotiable certificate of deposits	NegotiableCertificateOfDeposit	one-to-one
Floater	FRNFloater	Risk-equivalent portfolio
Reverse Floater	FRNReverseFloater	Risk-equivalent portfolio

### E.1.1.3 Index linked instruments

TRM instrument	RM template	Mapping
Canadian index linked bonds	IndexLinkedBond	one-to-one
French index linked bonds	IndexLinkedBond	one-to-one
Swedish index linked bonds	IndexLinkedBond	one-to-one
US index linked bonds	IndexLinkedBond	one-to-one
UK index linked bonds	IndexLinkedBond	one-to-one
Australian index linked bonds	IndexLinkedBond	one-to-one
UK inflation-linked gilts	IndexLinkedUKGilt	one-to-one

### E.1.1.4 Composite instruments

TRM instrument	RM template	Mapping
Repurchase agreements (repos)	Repo	one-to-one
Open basis repos	OpenBasisRepo	one-to-one
Interest rate swaps	InterestRateSwap	one-to-one
Average rate swaps	AverageRateSwap	Risk-equivalent cashflows
Amortized swaps	AmortizedInterestRateSwap	one-to-one
Overnight index swaps	OvernightIndexSwap	one-to-one
Constant maturity swaps	ConstantMaturitySwap	one-to-one
Libor in arrears swaps	LiborInArrearsSwap	one-to-one

### E.1.1.5 IR option instruments

TRM instrument	RM template	Mapping
Bond options	BondOption	one-to-one
Bond future options	BondFutureOption	one-to-one
Money market future options	InterestRateFutureOption	one-to-one
FRA options	FRAOption	one-to-one
Caps	Cap	one-to-one
Floors	Floor	one-to-one
Collars	Collar	one-to-one
Caps floaters	CapFloater	Risk-equivalent portfolio

TRM instrument	RM template	Mapping
Floors floaters	FloorFloater	Risk-equivalent portfolio
Collars floaters	CollarFloater	Risk-equivalent portfolio
Caps reverse floaters	CapReverseFloater	Risk-equivalent portfolio
Floors reverse floaters	FloorReverseFloater	Risk-equivalent portfolio
Collars reverse floaters	CollarReverseFloater	Risk-equivalent portfolio
Swaptions	Swaption	one-to-one

### E.1.1.6 FX instruments

TRM instrument	RM template	Mapping
FX spot	FXSpotForward	one-to-one
FX forwards	FXSpotForward	one-to-one
Domestic currency swaps	DomesticCurrencySwap	one-to-one
FX swaps	FXSwap	Risk-equivalent portfolio
Vanilla FX options	VanillaFXOption	one-to-one
American exercise FX options	VanillaFXOption	one-to-one
Single barrier FX options	SingleBarrierFXOption	one-to-one
Double barrier FX options	DoubleBarrierFXOption	one-to-one
Asset or nothing binary FX options	AssetOrNothingFXBinaryOption	Risk-equivalent portfolio
Cash or nothing binary FX options	CashOrNothingFXBinaryOption	Risk-equivalent portfolio
GAP FX binary option	GAPFXBinaryOption	Risk-equivalent portfolio

### E.1.1.7 Equity instruments

TRM instrument	RM template	Mapping
Security loans	SecurityLoan	Risk-equivalent cashflows
Funds	Fund	one-to-one
Equities	Equity	one-to-one
Equity forwards	EquityForward	one-to-one
Equity futures	EquityFuture	one-to-one
EBOR	EBOR	one-to-one
Rights	Right	one-to-one
Warrants	Warrant	one-to-one
Equity options	EquityOption	one-to-one
Equity index options	EquityIndexOption	one-to-one

### E.1.1.8 Balances

TRM instrument	RM template	Mapping
Bank account balances	Balance	one-to-one
Cost-of-carry balances	CostOfCarry	one-to-one

## E.1.2 Yield curve mapping logic

### E.1.2.1 RM Discount Curve / RM Discount Spread Curve

Priority / Logic	Mapping
Priority 1 TRM instrument-based	<ul style="list-style-type: none"> <li>discountCurve: Value of property RM-DISCOUNT-ID</li> <li>discountSpread: Depends on the value of property RM-SPREAD-TO-DISCOUNT: <ul style="list-style-type: none"> <li>- Discount Margin: Discount Margin key-figure in Transaction Manager</li> <li>- Spread: Spread column in Transaction Manager or Spread field in Instrument Editor</li> <li>- Zero: 0</li> </ul> </li> </ul> (if missing then Spread).
Priority 2 TRM-based	<ul style="list-style-type: none"> <li>discountCurve: Value of property RM-INTEREST-RATE-ID for the yield curve defined as the valuation curve for the instrument</li> <li>discountSpread: Depends on the value of property RM-SPREAD-TO-INTEREST-RATE: <ul style="list-style-type: none"> <li>- Discount Margin: Discount Margin key-figure in Transaction Manager</li> <li>- Spread: Spread column in Transaction Manager or Spread field in Instrument Editor</li> <li>- Zero: 0</li> </ul> </li> </ul> (if missing then Spread).
Priority 3 RM template-based	<ul style="list-style-type: none"> <li>discountCurve: Yield curve as defined by the default yield curve logic in RMI</li> <li>discountSpread: Discount Margin key-figure in Transaction Manager, Spread column in Transaction Manager or Spread field in Instrument Editor</li> </ul>
Priority 4 Default	<ul style="list-style-type: none"> <li>discountCurve: Transaction Currency + Swap</li> <li>discountSpread: Spread column in Transaction Manager or Spread field in Instrument Editor</li> </ul>

### E.1.2.2 RM Reference curve

Priority / Logic	Mapping
Priority 1 TRM instrument-based	<ul style="list-style-type: none"> <li>referenceCurve: Value of property RM-REFERENCE-ID</li> <li>referenceSpread: Spread column in Transaction Manager or Spread field in Instrument Editor</li> </ul>

Priority / Logic	Mapping
Priority 2 TRM-based	<ul style="list-style-type: none"> <li>referenceCurve: Value of property RM-INTEREST-RATE-ID in Yield Curve Editor for the yield curve defined as the forward curve in Instrument Editor</li> <li>referenceSpread: Spread column in Transaction Manager or Spread field in Instrument Editor</li> </ul>
Priority 3 RM template-based	<ul style="list-style-type: none"> <li>referenceCurve: Yield curve as defined by the default yield curve logic in RMI</li> <li>referenceSpread: Spread column in Transaction Manager or Spread field in Instrument Editor</li> </ul>
Priority 4 Default	<ul style="list-style-type: none"> <li>referenceCurve: Transaction Currency + Swap</li> <li>referenceSpread: Spread column in Transaction Manager or Spread field in Instrument Editor</li> </ul>

## E.1.3 Equity mapping

### E.1.3.1 RM Equity Name / RM Equity Beta

Instrument Editor RM Equity Name	Instrument Editor RM Equity Beta	Client Editor RM-PROXY-ID	Value
not defined	not defined	not defined	Name="Equity id", Beta=""
not defined	not defined	defined	Name="RM-PROXY-ID of Client", Beta="beta in Rate Monitor for Equity id"
not defined	defined	not defined	Name="Equity id", Beta=""
not defined	defined	defined	Name="RM-PROXY-ID of Client", Beta="RM-BETA-VALUE"
defined	not defined	not defined	Name="RM-PROXY-ID of Equity", Beta="1.0"
defined	not defined	defined	Name="RM-PROXY-ID of Equity", Beta="1.0"
defined	defined	not defined	Name="RM-PROXY-ID of Equity", Beta="RM-BETA-VALUE"
defined	defined	defined	Name="RM-PROXY-ID of Equity", Beta="RM-BETA-VALUE"

## E.2 CMI mapping strategies

### E.2.1 CM Template

#### E.2.1.1 Fixed rate instruments

TRM instrument	CM template	CM exposure
Discount papers	DiscountPaper	creditBond
Forward discount papers	MarketDrivenInstrument	MDI
Long term loans and deposits	LongTermLoanAndDeposit	fixedCouponLoan
Fixed rate bonds	FixedRateBond	creditBond
Amortizing fixed rate bonds	AmortizingFixedRateBond	amortizingBond
Zero coupon bonds	ZeroCouponBond	creditBond
Japanese registered T-bills	JapaneseRegisteredTBill	creditBond
LT loans and deposits	LTLoanAndDeposit	fixedCouponLoan
Amortizing LT loans and deposits	AmortizingLTLoanAndDeposit	amortizingFixedCouponLoan
Facilities	Facility	Commitment
Bond forwards	MarketDrivenInstrument	MDI
Bonds futures	MarketDrivenInstrument	MDI
Australian bond futures	MarketDrivenInstrument	MDI
Australian short futures	MarketDrivenInstrument	MDI
Call money		CashflowStream
Asset/Mortgage backed securities	MortgageBackedSecurity	CashflowStream
South African bonds	SouthAfricanBond	creditBond
South African fixed rate loans	SouthAfricanDepoLoan	fixedCouponLoan
Forward rate agreements (FRAs)	MarketDrivenInstrument	MDI
Interest rate futures	MarketDrivenInstrument	MDI
Callable bonds	CallableBond	creditBond
Depo/Loans	FixedLoanAndDeposit	cashflowStream

#### E.2.1.2 Floating rate instruments

TRM instrument	CM template	CM exposure
FRNs	FloatingRateNote	creditFRN
Amortizing FRNs	AmortizingFloatingRateNote	amortizingFRN
Floating rate depo/loans	FloatingRateDepoLoan	floatingCouponLoan
Amortizing floating rate depo/loans	AmortizingFloatingRateDepoLoan	amortizingFloatingCouponLoan
Negotiable certificate of deposits	NegotiableCertificateOfDeposit	CashflowStream
Floater	MarketDrivenInstrument	MDI



TRM instrument	CM template	CM exposure
Reverse floaters	MarketDrivenInstrument	MDI

### E.2.1.3 Index linked instruments

TRM instrument	CM template	CM exposure
Canadian index linked bonds	IndexLinkedBond	creditBond
French index linked bonds	IndexLinkedBond	creditBond
Swedish index linked bonds	IndexLinkedBond	creditBond
US index linked bonds	IndexLinkedBond	creditBond
UK index linked bonds	IndexLinkedBond	creditBond
Australian index linked bonds	IndexLinkedBond	creditBond

### E.2.1.4 Composite instruments

TRM instrument	CM template	CM exposure
Repurchase agreements (repos)	Repo	fixedCouponLoan
Open basis repos	OpenBasisRepo	fixedCouponLoan
Interest rate swaps	MarketDrivenInstrument	MDI
Average rate swaps	MarketDrivenInstrument	MDI
Amortized swaps	MarketDrivenInstrument	MDI
Overnight index swaps	MarketDrivenInstrument	MDI
Constant maturity swaps	MarketDrivenInstrument	MDI
Libor in arrears swaps	MarketDrivenInstrument	MDI

### E.2.1.5 IR option instruments

TRM instrument	CM template	CM exposure
Bond options	MarketDrivenInstrument	MDI
Bond future options	MarketDrivenInstrument	MDI
Money market future options	MarketDrivenInstrument	MDI
FRA options	MarketDrivenInstrument	MDI
Caps	MarketDrivenInstrument	MDI
Floors	MarketDrivenInstrument	MDI
Collars	MarketDrivenInstrument	MDI
Caps floaters	MarketDrivenInstrument	MDI
Floors floaters	MarketDrivenInstrument	MDI
Collars floaters	MarketDrivenInstrument	MDI
Caps reverse floaters	MarketDrivenInstrument	MDI
Floors reverse floaters	MarketDrivenInstrument	MDI

TRM instrument	CM template	CM exposure
Collars reverse floaters	MarketDrivenInstrument	MDI
Swaptions	MarketDrivenInstrument	MDI

### E.2.1.6 FX instruments

TRM instrument	CM template	CM exposure
FX spot	MarketDrivenInstrument	MDI
FX forwards	MarketDrivenInstrument	MDI
Domestic currency swaps	MarketDrivenInstrument	MDI
FX swaps	MarketDrivenInstrument	MDI
Vanilla FX options	MarketDrivenInstrument	MDI
American exercise FX options	MarketDrivenInstrument	MDI
Single barrier FX options	MarketDrivenInstrument	MDI
Double barrier FX options	MarketDrivenInstrument	MDI
Asset or nothing binary FX options	MarketDrivenInstrument	MDI
Cash or nothing binary FX options	MarketDrivenInstrument	MDI
Gap FX binary options	MarketDrivenInstrument	MDI

### E.2.1.7 Equity instruments

TRM instrument	CM template	CM exposure
Security Loans		(Still to investigate)
Funds	None	None
Equities	None	None
Equity forwards	MarketDrivenInstrument	MDI
Corporate actions - Detachment	None	None
Equity futures	MarketDrivenInstrument	MDI
EBOR	MarketDrivenInstrument	MDI
Rights	MarketDrivenInstrument	MDI
Warrants	MarketDrivenInstrument	MDI
Equity options	MarketDrivenInstrument	MDI
Equity index options	MarketDrivenInstrument	MDI

### E.2.1.8 Balances

TRM instrument	RM template	Mapping
Bank account balances	None	None
Cost-of-carry balances	None	None
Payments, transfers	Payment	Receivable

## E.2.2 CM Seniority Level

Exposure	Code	Description
Bonds	AK97SS(58,23)	Altman & Kishore [97] Senior Secured
	AK97SU(47.7,26.6)	Altman & Kishore [97] Senior Unsecured
	AK97SSu(35,25)	Altman & Kishore [97] Senior Subordinated
	AK97Su(32,22)	Altman & Kishore [97] Subordinated
	AK97JSu(21,18)	Altman & Kishore [97] Junior Subordinated
	CL97SS(63,26)	Carty & Leiberman [97] Senior Secured
	CL97SU(48,26)	Carty & Leiberman [97] Senior Unsecured
	CL97SSU(38,25)	Carty & Leiberman [97] Senior Subordinated
	CL97JSU(28,20)	Carty & Leiberman [97] Subordinated
	CL97(15,9)	Carty & Leiberman [97] Junior Subordinated
Loans, Commitments	AE95(65,38)	Asarnow & Edwards [95]
	CL97(71,21)	Carty & Leiberman [97]
CDS, MDI, Letters of Credit, Receivable	CL97(48,26)	Carty & Leiberman
	AK97(48,27)	Altman & Kishore

E TRM - RMI/CMI mapping  
E.2 CMI mapping strategies

## Appendix F

## Cashflow attributes

Cashflow attributes are used throughout TRM, but are mainly visible in Rule Editor and Transaction Manager (**Cashflow** view - **Attributes** column). All cashflow attributes are system defined, not all are relevant to the user; some are used only by the system. This section describes only those attributes that are relevant to the user.

Attribute	Description
Closing	Identifies the cashflow as a (technical) cashflow created to close (neutralize) another cashflow (such cashflows are created for example in early expiration and selling).
External	Identifies that the cashflow is not an integral part of the transaction (i.e. not generated from the transaction/instrument details). Manually added fees are 'External'.
Fixed FX Book Rate	Identifies that the FX book rate of the cashflow has been supplied externally, and that the cashflow is to be booked at that FX rate (rather than at the FX rate set by the accounting process). Such book rates can be captured by using the action <b>Set Base FX Book Rate</b> , see 8.4.7.8 <i>Setting base FX rates</i> on page 295.
Keep Instructions	Identifies that standard (default rule) settlement instructions have been overwritten by the user, and should not be redefaulted by the system.
No DvP	Indicates (on the Delivery cashflow) that the security (each security in a repo) is not settled DvP (Delivery Versus Payment), instead there is a settlement of security and cash separately (in Settlement Processing).
No Payment Netting	Indicates that the cashflow will not be netted with other cashflows when generating settlements.
No Position No Valuation No Risk	<ul style="list-style-type: none"> <li>No Position: Filters out position-related key-figures (e.g. Nominal Amount, Units)</li> <li>No Valuation: Filters out valuation-related key-figures (e.g. Market Value, Results)</li> <li>No Risk: Filters out risk-related key-figures (e.g. IR Exposure, FX Exposure).</li> </ul> <p>Note: For the filtering to take effect, the instrument must have the feature <b>FILTER-METHOD</b> in addition to the 'normal' valuation feature. See <i>TRM Instruments: Processing and Calculations Guide</i>.</p>
Nominal Amount	Identifies that the cashflow contributes to the nominal amount of the transaction, and is included in the amount on which, for example, the interest is calculated.
Not Bookable	Identifies the cashflow as a cashflow from which accounting entries will not be generated.
Not Fixed	Identifies the cashflow as a floating rate (or index-linked) cashflow which has not yet been fixed.
Not Payable	Identifies the cashflow as a cashflow that will not be settled, and which does not impact liquidity figures or market valuation figures.
Paid	Identifies the cashflow as a cashflow from which settlement/payment has been generated as part of the settlement process (e.g. processed in Settlement Processing). The 'Paid' attribute is set as soon as the payment/settlement is generated. Transactions with paid cashflows cannot be modified.

Attribute	Description
Processed	<p>Identifies that the cashflow has been processed by the FX conversion within end of day processing (e.g. End of Day Processing or TRM Daily Events Generation activities), and that its Base FX Rate, Base Book FX Rate and/or Base Amount have been updated in the case where the FX spot rate has changed since the deal was entered.</p> <p>Note: The rates on the future interest and payback principal flows are also updated and marked 'Processed' when end-of-day processing is run on the payment date of the settlement principal.</p>
Pseudo	<p>Identifies the cashflow as a technical cashflow required for transaction management, valuation and risk purposes, which has no settlement impact and will not be booked. For example, FRAs are modeled via cashflows marked as 'Pseudo', and notional principals of IRSs are marked as 'Pseudo'.</p>
Trade Date Selling	<p>Identifies the (result) cashflow as having been generated via a trade opening-date-based selling method (as opposed to settlement-date-based selling method).</p>
User	<p>Identifies that the cashflow has been added by a user, for example, manually added fees are marked <b>User</b>.</p>