

Now sold under the
Thermo Scientific brand

Thermo
S C I E N T I F I C

Part of Thermo Fisher Scientific

DCMS^{Link} for Analyst

Version 2.10

Troubleshooting Guide

Revision: 1.5
March 2011
© Dionex

Table of Contents

1	Introduction	3
1.1	Scope.....	3
1.2	Other Resources.....	3
2	Good to Know.....	4
2.1	Status Indicators	4
2.2	Known Issues and Limitations.....	5
2.2.1	Issues and Limitations affecting all Analyst versions	5
2.2.2	Limitations with Analyst QS 2.0	6
2.3	DOs and DON'Ts	7
2.3.1	During Installation	7
2.3.2	During Use.....	7
2.4	Hints for Special Uses	8
2.4.1	Working with a Simulated MS	8
2.4.2	Working with a Simulated LC (Demo / Virtual Mode).....	8
2.4.3	Working with DCMS ^{Link} and Chromeleon	8
2.4.4	Working with a Combination of Dionex and Other LC Devices.....	9
3	Troubleshooting.....	10
3.1	Typical Error Messages, Problems, and Resolutions	10
3.2	If Nothing Else Helps... ..	14
4	Collecting Data for Troubleshooting by Dionex.....	15
4.1	DCMS ^{Link} Event Log	15
4.2	System Status Report (SSR)	15

1 Introduction

1.1 Scope

The Troubleshooting Guide has three major chapters (except the Introduction).

The “**Good to Know**” section provides reference information:

- Description of the status indicators
- List of known issues and limitations
- DOs and DON'Ts for preventing problems

The **Troubleshooting** section lists error messages and typical problems and provides remedies.

The last section describes how to **Collect Data for Troubleshooting by Dionex**.

1.2 Other Resources

The following documents provide further details about installing, configuring and using the software.

Document	Description
Installation Guide *	<ul style="list-style-type: none"> - Describes all the requirements for installing DCMS^{Link} (e.g. PC and operating system requirements). - Lists the supported instruments. - Gives step-by-step instructions for installing and configuring DCMS^{Link} for Analyst.
Quick Start Guide *	<ul style="list-style-type: none"> - Gives an overview of what DCMS^{Link} for Analyst is, - Provides step-by-step instructions about how to control and acquire data from Dionex instruments via the Analyst® software
Release Notes *	Describes what is new in each DCMS ^{Link} for Analyst release
Migration of Methods (Conversion of PGM Files) between Chromeleon and DCMS ^{Link} for Analyst *	Describes how to modify instrument methods (Program scripts, PGM files), which were created in Chromeleon before they can be used with DCMS ^{Link} for Analyst and vice versa.
Online Help	Provides general information and context sensitive help about the various options available in DCMS ^{Link} .

Tip: The documents marked with * are installed in the “Documentation” folder in the DCMS^{Link} installation folder (C:\DCMSLink) and can be easily launched from the Start menu (**Start > All Programs > Dionex > DCMSLink > Documentation**). They are also available on the installation CD in the “Additional Documents” folder

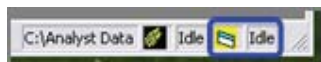
Tip: For consulting, training, and implementation services, contact your local Dionex support and service center.

Tip: For abbreviations and glossary of terms, please refer to the *Quick Start Guide*.

2 Good to Know


2.1 Status Indicators

The bottom right corner of the Analyst window (the Analyst Status Bar) contains information about the status of DCMS^{Link}:



- **Yellow** background – DCMS^{Link} is idle (ready for operation)
- **Green** background – There is an ongoing data acquisition.
- **Red** background – An error occurred.

Tip: If an error occurred, inactivate the Hardware Profile in Analyst and activate it again.

If samples in the Queue remained in “Suspended”  state, the Batch must be deleted and submitted again.

The Main tab of DCMS^{Link} also contains status information. The DCMS^{Link} Help provides details about these.



2.2 Known Issues and Limitations

2.2.1 Issues and Limitations affecting all Analyst versions

- This version of DCMS^{Link} is **based on Chromeleon 6.80 SR10**: Any drivers/features that are released in later Chromeleon versions are not supported by this DCMS^{Link} version.
- **The MS part of the Method defines the maximum length of the acquisition.** For example, if the MS Part of the method is 5 min long but the LC part of the Method is 7 min long, then the collected data will be truncated after 5 min.
- **2D channel data** is digitally transferred to Analyst with a **fixed 25 Hz data collection rate** independently of the Step or Rate settings in the LC part of the Method (Program). (For 3D data acquisition, the Step or Rate settings are observed.)
- For 3D acquisition, for all samples in an Acquisition Batch (Sequence) the **parameters for the 3D acquisition** (such as minimum and maximum wavelength, reference wavelength and bandwidth) **must be identical**.
- **The maximum data rate (100 Hz) of the DAD-3000RS and MWD-3000RS may not be used.** For 2D channels, the data rate is fixed to 25 Hz (see above). For 3D acquisition, the maximum usable data rate is about 40-50 Hz. It is limited by the processing power (CPU speed and RAM) of the PC and bottlenecks in the Analyst data and online plot interfaces. If you experience problems, reduce the data rate to 20 Hz or below.
- Special **Program files for Tandem mode and On-line SPE are not fully supported.** The Program Wizard will offer the special pages and create appropriate PGM files. However, once these PGMs are saved inside the MS Method, they cannot be edited in Device views any more. To modify them, the Commands view must be used, or the Program has to be recreated with the Wizard.
- **Adding an AFC-3000 fraction collector to the Server Configuration is initially refused** by a “*Please remove all unsupported devices from the Timebase*” message. In this case close Analyst (this also closes DCMS^{Link}), re-start the Chromeleon Server, then re-start Analyst (this also starts DCMS^{Link}). After the re-start, the AFC-3000 will be able to report an appropriate model number and thus will be accepted.
- **Panels** are not (fully) supported for some older instruments and rare combination of modules.
- For the **AS(50)** sampler the “**Sample Overlap**” option is not supported.
- **Keyboard Shortcuts** (like Ctrl+C, Ctrl+V) do not work in the Commands view of the Method (Program) editor (#17206)

2.2.2 Limitations with Analyst QS 2.0

As the required software interface is not available in Analyst QS 2.0, **digital data acquisition is not supported** for this version of Analyst.

The signals can be viewed online (i.e. during acquisition) in DCMS^{Link} panels, but this data will not be transferred to Analyst.

Signals from instruments with analog outputs can nevertheless be recorded via an AB/MDS Sciex analog-to-digital converter card (as it was the case for version 1.1 of DCMS^{Link} for Analyst). Note however, that some Dionex detectors have no analog output (e.g. the UVD 170(U)). If analog data acquisition is required, please verify the availability of analog outputs in the instrument's documentation.

2.3 DOs and DON'Ts

This section lists a few things you should / should not do to prevent various problems.

2.3.1 During Installation

- **Do NOT try to upgrade DCMS^{Link} for Analyst using any other DCMS^{Link}, Chromeleon, or Chromeleon Service Pack installation disk.**
- In a networked environment, make sure that **each Timebase has a unique name.**
- Make sure that the **“Dionex DCMSLink for Analyst” driver is part of your Timebase.**
- In the Server Configuration, **enable all the channels that you want to record.**
- **Enable “Start Server at System Start” option in the Chromeleon Server Monitor.**
- Ensure that the **decimal separator** is set to “.” (period), and not to “,” (comma).
- Once all the instruments (MS and the front end) are physically installed, make sure that **none of the drivers are in “Simulation” or “Demo” mode** (unless you are using DCMS^{Link} for testing purposes with no real LC, see 2.4.2).

2.3.2 During Use

- **Edit the Standby program** to make sure that the front end will run with appropriate chromatographic parameters once Analyst enters Standby mode. Add only the necessary commands (like Lamp Off and Flow) and add an “End” statement in the last line.
- **Do NOT edit the Standby Program in Device views**, as this would add commands (e.g. synchronization, injection, and data acquisition commands), which do not make sense in this context.
- **Do NOT close the DCMS^{Link} window while Analyst is running**, especially not during ongoing analysis. Closing the DCMS^{Link} window can cause communication problems and will interrupt running analyses.
- **For 3D acquisition**, make sure that the **parameters for the 3D acquisition** (such as minimum and maximum wavelength, reference wavelength and bandwidth) **are identical for all samples** in an Acquisition Batch (Sequence). Otherwise, the Batch will abort when encountering the first change.
- **When changing the timing in a Method (Program), make sure you change it for all the devices** (for example shortening the gradient will not automatically shorten the acquisition times for the detector signals).
- **Before starting a run, make sure that all LC modules has “Connected” and “Ready” status** in DCMS^{Link} (you can see this on the DCMS^{Link} Panels or in the Commands dialog).
- **Avoid interfering with an ongoing acquisition using the Panels or the Commands dialog.**
- **Select only the necessary properties on the DCMS^{Link} Options tab.** Selecting too many properties can lead to problems when opening the Data file in Analyst.

2.4 Hints for Special Uses

2.4.1 Working with a Simulated MS

Appendix A of the *Quick Start Guide* describes how to set up an Analyst Hardware Profile and how to create an Acquisition Method with a Simulated MS.

- **Tip:** Working with a simulated MS is useful for example:
- when the LC front-end must be tested without having a properly configured mass spectrometer available;
 - when the LC system is operated standalone.

2.4.2 Working with a Simulated LC (Demo / Virtual Mode)

DCMS^{Link} supports simulation of the LC modules (so-called “Demo Mode” or “Virtual Mode”). To use simulated LC modules, add the module to the Chromeleon Server Configuration (for instructions, see *Installation Guide*) and make sure to select the “Demo Mode” or “Virtual Mode” option.

- **Important:** Make sure that you turn “Demo Mode” off / turn “Live Mode” on when you want to control real instruments.

- **Tip:** Simulated LC modules can be used for example for testing configuration and Instrument Method generation before an instrument is physically connected.

2.4.3 Working with DCMS^{Link} and Chromeleon

If you want to use any of the powerful features of Chromeleon that are not included in DCMS^{Link} (like advanced reporting, automatic qualification tools, System Suitability Tests, spectra library tools, automated off-line 2D-LC, etc), you must purchase a Chromeleon license (please discuss your needs with your local Dionex representative to figure out which license(s) would be needed).

- **Important:** In these cases, the digital data from the Dionex instruments will be stored in Chromeleon, and NOT in Analyst.

Installation

If you decide to use Chromeleon on the same PC where DCMS^{Link} is already installed, you need not (and should not!) install Chromeleon, as it is already installed as part of DCMS^{Link}. Simply insert a dongle and activate the Chromeleon License in the Chromeleon Server Configuration.

Alternatively, if the focus is on reprocessing the data, you can install a Chromeleon “Data Client” (client license only) on a separate PC, and remotely access the Datasource on the Instrument PC (with Analyst and DCMS^{Link}). The Datasource on the IPC must be shared at Windows level.

Use

Note that DCMS^{Link} by default deletes temporary data after 30 days (depending on the “Delete temporary DCMSLink data” setting on the “Options” tab of DCMS^{Link}). The deleted data includes the Sequences that were generated by DCMS^{Link}. If you want to preserve these, use Chromeleon to *move* them from their default location, i.e. “<Timebase Name>\DCMSLink Data” to a different folder or Datasource.

To avoid instrument control conflicts:

- When you use Chromeleon for instrument control, make sure that Analyst is not used on the same PC, or at least that “Dionex Chromatography MS Link” is not added to the Analyst Hardware Configuration.
- When Analyst is controlling the instruments and you open Chromeleon, do not use other Chromeleon features than direct control via Panels (most notably do not manipulate the running Sequence or Batch). Note, that Analyst will automatically take control over the system whenever this is required

For information about migration of methods (conversion of PGM files) between Chromeleon and DCMS^{Link} please refer to the “*DCMSLink for Analyst - Migration of Methods*” document.

2.4.4 Working with a Combination of Dionex and Other LC Devices

Analyst can control LC devices from different vendors. Dionex LC and IC instruments are handled as a complete system via the “Dionex Chromatography MS Link” “device”. Theoretically, one could control a mixed system from Analyst by adding the Dionex instruments to the Chromeleon Server Configuration and adding the 3rd party instruments directly to the Analyst Hardware Profile (note that DCMS^{Link} itself does NOT support third party instruments).

■ Important: Such combinations have not been tested by Dionex and are therefore officially not supported.

However, if the sampler would be controlled directly by Analyst, the Chromeleon Timebase must contain the “Remote Inject” Generic Driver that is connected to the inject response output of the sampler controlled by Analyst.

3 Troubleshooting



3.1 Typical Error Messages, Problems, and Resolutions

The following table summarizes the most frequently observed error messages and problems that might occur while using DCMS^{Link} for Analyst, lists possible causes, and suggests appropriate remedial actions:

Message / Problem	Probable cause	Remedial action
Problems during Starting Analyst		
DCMS ^{Link} does not start automatically when Analyst is started	DCMS ^{Link} has not been added to the Analyst Hardware Profile.	Add DCMS ^{Link} to the Analyst Hardware Profile (see <i>Installation Guide > Instrument Configuration in Analyst and DCMS^{Link}</i>).
	The Analyst Hardware Profile containing DCMS ^{Link} is not active	Activate the Analyst Hardware Profile that contains DCMS ^{Link} (see <i>Installation Guide > Instrument Configuration in Analyst and DCMS^{Link}</i>).
The Timebase cannot be connected	The “Dionex DCMSLink for Analyst” driver is not part of the Timebase.	Add the “Dionex DCMSLink for Analyst” driver to the Timebase (see <i>Installation Guide > Instrument Configuration in Analyst and DCMS^{Link}</i>).
The Timebase cannot be connected. The following messages appear: “Please remove all unsupported devices from the timebase.” “Cannot connect to timebase Please select another timebase. (Error cannot be interpreted)”	The Timebase contains a device that is not supported by DCMS ^{Link} .	Check the <i>Installation Guide</i> for the list of supported modules and remove any unsupported module from the Server Configuration.
	The Timebase contains a supported device (e.g. and AFC-3000) that could not identify itself upon the first connection attempt.	Close Analyst (this also closes DCMS ^{Link}), re-start the Chromeleon Server, then re-start Analyst (this also starts DCMS ^{Link}). After the re-start, the AFC-3000 will be able to report an appropriate model number and thus will be accepted.
General Problems		
The physical control panels of the connected instruments are not working	This is normal, when DCMS ^{Link} - controls the instrument.	Control the instruments via the software Panels or Device Commands provided by DCMS ^{Link} .
Various problems with a system including a DAD-3000RS	The maximum data rate (100 Hz) of the DAD-3000RS may not be used. The maximum usable data rate is about 40-50 Hz. It is limited by the processing power of the PC and bottlenecks in the Analyst data- and online plot interfaces.	Reduce the data rate to 20 Hz or below.
Various non-reproducible problems with instrument control	Timebases with the same name exist in the same computer network (domain)	Make sure that timebase names are unique. Dionex recommends including the PC name in the Timebase name.

Message / Problem	Probable cause	Remedial action
The MS data acquisition does not start	No cable connection between the IC/LC and the MS	Make sure that the MS receives a start signal from the IC/LC via a cable (see <i>Installation Guide > Hardware Installation</i>).
	WPS-3000 sampler Relay_4 is used to send the Start signal, but the sampler hasn't been initialized with a "Relay4Enabled" command	Send the following command to the sampler from the Commands dialog: Relay4Enabled = 10sec_InjectOut (see <i>Installation Guide > Instrument Configuration in Analyst and DCMS^{Link}</i>)
	Other sampler is used and the Program does not contain a command for sending the start signal.	If, for example, Relay_1 of the Pump is used for the synchronization, then a Pump_Relay_1.Closed Duration = 2.00 command should be placed in the Program right after the Inject command. See table in the "Creating a New Acquisition Method for Samples" section in the <i>Quick Start Guide</i> .
	The LC part of the Method was imported from Chromeleon, but the synchronization commands are not included.	Refer to the "Migration of Methods (Conversion of PGM Files) between Chromeleon and DCMS ^{Link} for Analyst" document.
Problems with Direct Control of the Front End		
Panel Tabset does not appear or it does not contain all the necessary Panels / controls.	Older instruments and unusual combination of instruments (e.g. combination of old and new models) may not be fully supported by Panel Tabsets	Use Control Commands for direct control of the not supported modules. Contact your local Dionex support organization and describe the problem. In some cases it may be possible to customize the Panel Tabset.
Commands cannot be sent from Panels, some controls are grayed out	The Panel Tabset is in "Monitor Only" mode.	For UltiMate 3000 systems: On the " Home " Panel click on the " Take Control " button. For IC systems: On the Home Panel click Local Control – Take .
Commands sent from the Commands dialog are not executed	Analyst took over the control of the Timebase.	Close the Commands dialog and open it again to regain control.
	The device is not "Connected".	Make sure that all the devices are "Connected" to DCMS ^{Link} . You can easily see this on the Panels.
Cannot find commands in the Commands dialog	The command may be an Advanced or Expert level command but the view is set to Normal	Right-click in the selection area and choose Expert mode. On the keyboard press the starting letter of the command to find it quickly.

Message / Problem	Probable cause	Remedial action
Problems during Method (Program) Editing and while Running Samples		
Lines are highlighted with red text	This indicates a value out of range or a syntax error.	Position the cursor inside the red line and press the F8 key. If the syntax is correct, the Commands dialog opens showing the highlighted command. Make sure, that the parameter is within the allowed range. If the syntax is incorrect, the Commands dialog opens with no command selected. Browse the command tree to find the appropriate command.
Changes to the LC part of the Acquisition Method are lost.	Changes made in DCMS ^{Link} were overwritten by a subsequent Method saving in Analyst.	Make sure that you do not have the same method open in both the Analyst Method Editor and the DCMS ^{Link} Program Editor (see <i>Quick Start Guide. > Creating / Editing Acquisition Methods</i>).
Changes to the MS part of the Acquisition Method are lost.	Changes made in Analyst were overwritten by a subsequent Method saving in DCMS ^{Link} .	Make sure that you do not have the same method open in both the Analyst Method Editor and the DCMS ^{Link} Program Editor.
The Batch cannot be Submitted due to wrong Inject Volume	The decimal separator is not properly set.	Close Analyst and change the Windows Locale settings (Control Panel > Regional and Language Options) to use “.” (period), and not “,” (comma).
Error messages related to the Configuration such as Suppressor not connected to valid pump or Eluent generator not connected to valid pump	Wrong / missing assignment between devices.	Open Device (Server) Configuration (see <i>Instrument Configuration...</i> section of the <i>Installation Guide</i>) and make sure that all the assignments / links between the various devices are correct, e.g. re-assign the proper pump to the SRS / EGC.
The rack/plates/positions do not match. The following messages appear: “Could not synchronize sequence. Rack type doesn't match the sampler configuration. Please check the sampler locations in the Analyst Batch Editor.” or “Cannot start sequence. Invalid sample position xxx.”	Rack / Plate Codes / Positions defined in Analyst do not match the Server (Device) configuration in DCMS ^{Link} .	1. Make sure that the Server (Device) configuration corresponds to the Racks and Plates physically installed in the sampler. 2. Use the Locations tab of the Analyst batch Editor to define Racks, Plates, and Vial positions (see <i>Quick Start Guide. > Creating / Editing an Acquisition Batch (Sample Set)</i>).
	To enable control of certain autosampler tray types, you may need to add the autosampler to the Analyst sampler database manually.	Follow the instructions in the <i>Analyst: Tray Type Support for Certain Autosamplers...</i> section of the <i>Installation Guide</i> .

Message / Problem	Probable cause	Remedial action
Various error messages / warnings from DCMS ^{Link} after starting the Batch in Analyst. The Queue stops with an acquisition error  , all the remaining samples in the Batch are "Suspended"  .	The LC part of the Method (Program) may need manual modification.	A table in the <i>Creating a New Acquisition Method for Samples</i> section of the <i>Quick Start Guide</i> describes typical modifications that have to be done manually. Delete the Batch then submit it again.
	The LC encountered an error, such as an exceeded pressure limit or a missing vial.	<ul style="list-style-type: none"> - Check the reason of the Error in the DCMSLink Event Log or in the Audit Trail in the Panels. - Take the necessary actions to recover from the error. - Delete the Batch then submit it again.
Device is not remote message	One or more of the LC modules are not "Connected" (to DCMSLink) or not "Ready".	<ul style="list-style-type: none"> - Connect the devices via a DCMSLink Panel or via a Control Command; - Allow time for the devices to become "Ready".
A sample that acquires 3D data aborts	A sample in the batch uses different 3D acquisition parameters than the previous samples.	Make sure, that the 3D acquisition parameters (such as minimum and maximum wavelength, reference wavelength and bandwidth) are identical for all the samples in an Acquisition Batch (Sequence).
Different injection volume is used compared to what is programmed in the Analyst Acquisition Batch Editor.	The injection volume may be hard coded in the LC part of the Acquisition Method (this is more likely, if the Method has been edited in DCMSLink 2.7.x)..	Delete the "Volume = ..." command from the LC part of the Method (PGM).
Problems with Data Acquisition		
Digital channel data is not acquired	Analyst QS 2.0 is used. Analyst QS 2.0 does not support digital data acquisition, see <i>Limitations with Analyst QS 2.0</i> section of this document.	n.a.
	The channel is not enabled in the Chromeleon Server Configuration	Enable the channel in the Chromeleon Server Configuration (see <i>Installation Guide > Instrument Configuration in Analyst and DCMS^{Link}</i>).
	Data acquisition is not activated in the LC part of the method	Activate data acquisition in the LC part of the method (see <i>Quick Start Guide. > Creating a New Acquisition Method for Samples</i>).
2D data acquisition rate does not match with the settings in the Program	2D channel data is always transferred to Analyst with a 25 Hz data collection rate (see <i>Known Issues and Limitations</i> section of this document).	n.a.

Message / Problem	Probable cause	Remedial action
Problems with Viewing the Data		
Analyst hangs when opening a Data file	Too many system properties were logged.	Make sure that only the necessary properties (typically only a few) are selected on the DCMS ^{Link} Options tab.

3.2 If Nothing Else Helps...

If the system entered an error condition, that could not be resolved with the usual troubleshooting steps described above, you may try the following:

1. Deactivate the Analyst Hardware Profile
2. Close Analyst (client)
3. Close Chromeleon Xpress
4. Stop the Chromeleon Server (e.g. using the Chromeleon Server Monitor – Start > All Programs > Dionex > DCMSLink > Server Monitor)
5. Quit the CM Server Monitor
6. Stop the “AnalystService.exe” service (Control Panel > Administrative Tools > Services)
(If the service does not stop, then reboot the PC.)
7. Restart the “AnalystService”
8. Start the Chromeleon Server (using the Chromeleon Server Monitor)
9. Start Analyst (client)
10. Activate the Hardware Profile.

4 Collecting Data for Troubleshooting by Dionex

4.1 DCMS^{Link} Event Log

All communication between Analyst, DCMS^{Link} and the LC modules is displayed for on-line viewing in the DCMS^{Link} Event Log on the DCMS^{Link} Main tab.

The same data, plus additional details, are automatically saved in daily log files that can be sent to Dionex for trouble shooting.

The log files are by default located in the “C:\DCMSLink\Logfiles\” folder. They are named “DCMSLink_for_Analyst_Dump_<YYYY-MM-DD>”.

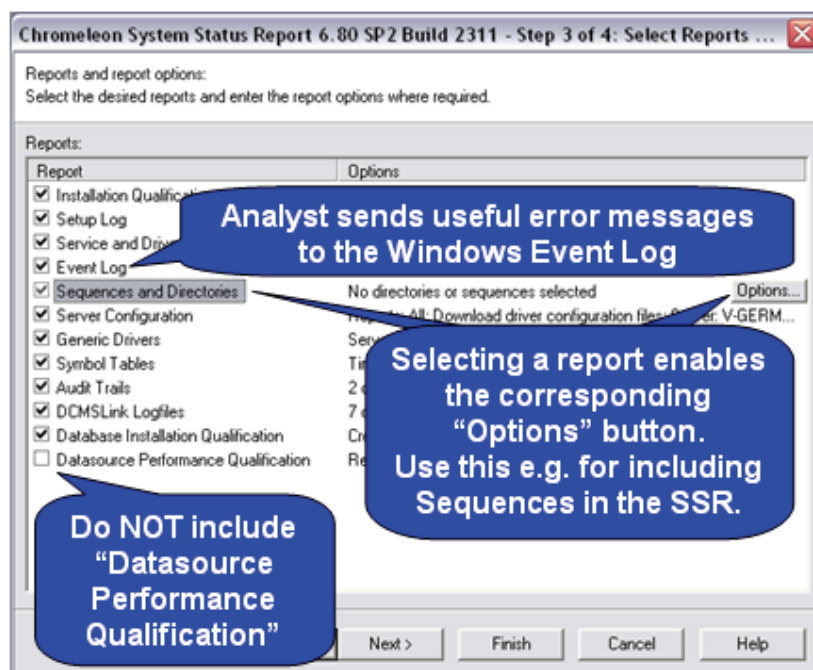
Important: The log files are purged according to the “**Delete temporary DCMSLink data**” settings on the “**Options**” page. This setting influences the deletion of both the log files and the temporary data stored in the underlying Chromeleon Datasource.

4.2 System Status Report (SSR)

The System Status Report is a tool that captures all the necessary information for trouble shooting problems with DCMS^{Link} (including the above mentioned log files). The resulting reports can be sent to Dionex for analyzing the problem.

To create a System Status Report

1. Choose Start > All Programs > Dionex > DCMSLink > System Status Report.
2. On the “Select Datasources” and the “Select Timebases” pages, the proper selections are normally done by default.
3. On the “Select Reports” page, select the reports you want to include. If you are uncertain which reports should be included, select all of them, except the last item (“Datasource Performance Qualification” is currently only compatible with full Chromeleon installations).
4. On the “General” page, accept the default paths. Note the destination directory of the SSR. If you enable the “Send report by e-mail” option, an e-mail will be prepared with the SSR attached as a zip-ed (compressed) archive.

**Tip:**

You can use the Windows keyboard shortcuts Ctrl + C and Ctrl + V to copy the exact text of DCMS^{Link} error messages from message boxes and from the "Check Results" dialog. When relevant you should provide this information as well, when you seek support from Dionex.