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DCMS^{Link} for Xcalibur

Version 2.11

Troubleshooting Guide

Document version: 1.8

June 2011

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

i Tip: After installing DCMS^{Link}, the above resources and this Troubleshooting Guide can be easily accessed at any time from the Start menu: **Start > All Programs > Dionex > DCMSLink > Documentation**. (The documents are installed in the “Documentation” folder in the DCMS^{Link} installation folder (C:\DCMSLink). They are also available on the installation CD in the “Additional Documents” folder.)

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

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

2 Good to Know

2.1 Status Indicators

The Status tab of the Xcalibur Information View shows information about the status of Xcalibur and DCMS^{Link}.

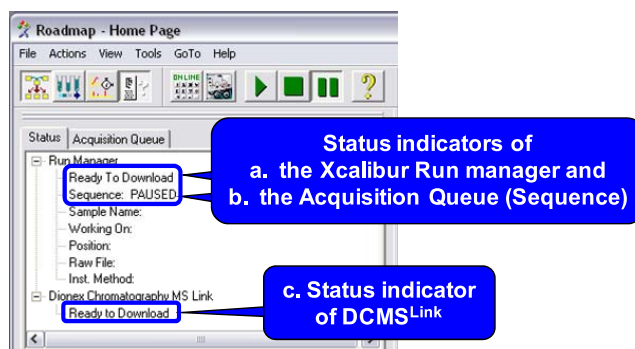


Fig. 1 The Xcalibur Information View provides useful status information.

Xcalibur Run manger (Fig. 1a)

- **Ready to Download** – The instruments are ready to start an acquisition.
- **Downloading, Devices Are Getting Ready, Contact Closure Devices started, and Control Device Started** – These are normal transient states during startup of an acquisition
- **Acquiring** – There is an ongoing acquisition
- **Check Devices** – This is a normal transient state during ending an acquisition

Xcalibur Acquisition Queue (Sequence, Fig. 1b)

- **Paused** – There are samples waiting in the queue, but the analysis is paused, either because a user stopped/paused it, or because of an error (like missing vial or exceeded pressure limits). For more information, refer to the *Quick Start Guide* chapter *Stopping, Pausing, and Resuming the Acquisition Queue*.

DCMS^{Link} (Fig. 1c)

- **Ready to Download** – DCMS^{Link} and the front-end instruments are ready to start an acquisition.
- **Downloading, Preparing for Run, and Ready for Run** – These are normal transient states during startup of an acquisition
- **Running** – There is an ongoing acquisition
- **Post Run** – This is a normal transient state during ending an acquisition
- **Detached, Server Failed** – DCMS^{Link} could not be properly started. Possible reasons are
 - Problems with software licensing
 - DCMSLink for Xcalibur driver is missing from the Timebase
 - Unsupported instrument in the Timebase

2.2 Known Issues and Limitations

The list below describes the known limitations and issues with DCMS^{Link} 2.11 for Xcalibur.

- This version of DCMS^{Link} is **based on Chromeleon 6.80 SR10**: Any drivers/features that are released in later versions of Chromeleon are not supported by this DCMS^{Link} version.
- **TSQ Tune crashes** when DCMS^{Link} is present in the Thermo Instrument Configuration. This issue has been solved by Thermo. Please update to **TSQ 2.1.1** (or newer). A similar problem with the **LTQ Mass List Tab** is solved by updating to **LTQ 2.3** (or newer).
- Due to an interface limitation, **all channel data is displayed as “UV” signals** in Xcalibur, including pressure and temperature channels, and signals from electrochemical detectors.
- Clicking **Commands...** in the DCMS^{Link} Pane of the Xcalibur Information View area may not work (depending on Windows user privileges). As an alternative, open the Commands dialog from the Panels view (Chromeleon Xpress) by right-clicking in an “empty” area in a Panel, or hitting the F8 key.
- The **Xcalibur Real Time Plot is not able to display negative signals** (however, the signals are properly recorded and can be viewed in the Qual Browser).
- **The maximum data rate (100 Hz) of the DAD-3000RS, FLD-3400RS, and MWD-3000RS may not be used.** 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 Xcalibur data interfaces. If you experience problems, reduce the data rate to 20 Hz or below.
- **Start Up and Shut Down Instrument methods** (as specified on the Xcalibur Run Sequence dialog) **are not supported.** (However, special Programs can be stored for setting the system “On”, “Off”, and “Standby”).
- 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 Xcalibur (this also closes DCMS^{Link}), re-start the Chromeleon Server, then re-start Xcalibur (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 combinations of modules.
- **Some keyboard shortcuts** (like Ctrl+F, Ctrl+H, F3) do not work in the Commands view of the Method (Program) editor (Dionex tracking CM6-17206)
- The **Status Log** is saved with the first UV channel. If you do not see it in the Qual Browser’s Report View, right-click, choose View > Ranges... > Detector = UV. If no UV channel is present, only the very first entry in the log can be viewed.
- The order in which channels appear in Xcalibur and which channel is the default channel is defined by Xcalibur. **The default channel is determined by the last module added in the CM Server Configuration.** For example, users can ensure that UV_VIS_1 is the default channel by adding the UV detector driver last in CM Server Configuration. Dionex tracking ID: CM6-20690.

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 Xcalibur 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 Xcalibur” driver is part of your Timebase.**
- Make sure that **your Timebase only contains instruments that are supported.**
- In the Server Configuration, **enable all the channels that you want to record in Xcalibur**
- **Enable “Start Server at System Start” option in the Chromeleon Server Monitor.**
- For all relevant accounts (Local System, .\Xcalibur_System and any user that logs on to Windows to start Xcalibur), 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 LC drivers are in “Demo” or “Virtual” mode** (unless you are using DCMS^{Link} for testing purposes with no real LC, see 2.4.1).


2.3.2 During Use

- **Edit the “On”, “Off” and “Standby” Programs in DCMS^{Link}** to make sure that the front end will run with appropriate chromatographic parameters once Xcalibur enters or finishes a Sequence. Add only the necessary commands (like Lamp Off and Flow) and add an “End” statement in the last line.
- **Do NOT edit the “On”, “Off”, and “Standby” Programs in Device views**, as this would add commands (e.g. synchronization, injection, and data acquisition commands), which do not make sense in this context.
- **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 have “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 run using the Panels or the Commands dialog.**
- If needed at all, **select only the necessary properties on the DCMS^{Link} Pane of the Information View.** Selecting too many properties can lead to performance problems.

2.4 Hints for Special Uses


2.4.1 Working without an MS


Some MS software always expects an MS be present in the system. This is not an issue when working with Xcalibur. Simply make sure that the Xcalibur Instrument Configuration does not contain an MS and that the Instrument Setup does not contain an MS part.

-  **Tip:** Working without an 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, depending on the configuration, the data from the Dionex instruments either will be stored only in Chromeleon, or both in Chromeleon and Xcalibur.

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 Xcalibur 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 (this can be changed by the “Delete temporary DCMSLink data” setting in the “Dionex Chromatography MS Link Configuration” dialog – accessible from the Xcalibur Instrument Configuration). The deleted data includes the Chromeleon 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 Xcalibur is not used on the same PC, or at least that “Dionex Chromatography MS Link” is not added to the “Configured Devices” list in the Xcalibur Instrument Configuration.
- When Xcalibur 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 Xcalibur 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 Xcalibur - Migration of Methods*” document.

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 Xcalibur, lists possible causes, and suggests appropriate remedial actions:

Message / Problem	Probable cause	Remedial action
Problems during Server (Device) Configuration		
“Cannot connect to Timebase ... The device XcaliburSync was not found...” error message appears	The “Dionex DCMSLink for Xcalibur” driver is not part of the Timebase.	Add the “DCMSLink for Xcalibur” driver to the Timebase (see <i>Installation Guide > Instrument Configuration in DCMS^{Link} and Xcalibur</i>).
“Device <...> is not supported” error message appears	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.
Problems during Starting Xcalibur		
DCMS ^{Link} does not start automatically when Xcalibur is started	DCMS ^{Link} has not been added to the Xcalibur Instrument Configuration.	Add DCMS ^{Link} to the Xcalibur Instrument Configuration (see <i>Installation Guide > Instrument Configuration in DCMS^{Link} and Xcalibur</i>).
‘Device: Dionex Chromatography MS Link OLE IDispatch Exception ... For details, please see the event log...’ error message appears The Event Log / Audit Trail contains the: ‘...The device "XcaliburSync" was not found...’ error message	The “Dionex DCMSLink for Xcalibur” driver is not part of the Timebase.	Add the “DCMSLink for Xcalibur” driver to the Timebase (see <i>Installation Guide > Instrument Configuration in DCMS^{Link} and Xcalibur</i>).
‘Device: Dionex Chromatography MS Link OLE IDispatch Exception ... For details, please see the event log...’ error message appears. The Event Log / Audit Trail contains the: ‘Please remove all unsupported devices from the timebase’ message	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.

Message / Problem	Probable cause	Remedial action
General Problems		
The physical control panels of the connected LC/IC modules are not working	This is normal, when instruments are under software control.	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 limited by the processing power of the PC and bottlenecks in the Xcalibur data 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.
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.	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	Xcalibur 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.
Problems during Instrument 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.

Message / Problem	Probable cause	Remedial action
<p>After starting the Sequence in Xcalibur, an error message appears: ‘The following device reported an error "Dionex Chromatography MS Link" while waiting for the devices to become ready...’</p> <p>In addition the DCMS^{Link} Event Log shows an Error and the Acquisition Queue enters Paused state.</p>	The LC part of the Method (Program) may need manual modification.	<p>A table in the “<i>Creating an Instrument Method</i>” section of the <i>Quick Start Guide</i> describes typical modifications that have to be done manually.</p> <ul style="list-style-type: none"> - Edit the Program and save the Instrument Method - Delete the samples from the Acquisition Queue then submit them again - Resume the Acquisition Queue
	One or more of the LC modules are not “Connected” (to DCMS ^{Link}) or not “Ready”.	<ul style="list-style-type: none"> - Connect the devices via a DCMS^{Link} Panel or via a Control Command; - Allow time for the devices to become “Ready”. - Resume the Acquisition Queue
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.	<ul style="list-style-type: none"> - Open the Chromeleon Server Configuration (via the Xcalibur Instrument Configuration) 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 - Close the Chromeleon Server Configuration and the Xcalibur Instrument Configuration - Restart the Chromeleon Server using the Server Monitor (Start > All Programs > Dionex > DCMSLink).
<p>Error message during data acquisition: ‘The last device acquiring reported an error. The acquisition has ended. The sequence has been paused. To resume the list, go to the "Samples" main menu and uncheck the "Pause Analysis" menu item’</p> <p>In addition the DCMS^{Link} Event Log shows an Error and the Acquisition Queue enters Paused state.</p>	<p>The LC encountered an error, like an exceeded pressure limit or a missing vial.</p> <p>In this case, Xcalibur pauses the Acquisition Queue. The Queue can be resumed starting with the next sample.</p>	<ul style="list-style-type: none"> - Check the reason of the Error in the DCMS^{Link} Event Log or in the Audit Trail in the Panels. - Take the necessary actions to recover from the error. - Resume the Acquisition Queue –or– delete the samples from the Queue, re-submit them, and then resume the Queue.
Problems with Data Acquisition / Viewing the Data		
The MS data acquisition does not start	No cable connection between the LC/IC and the MS	Make sure that the MS receives a start signal from the LC/IC via a cable (see <i>Installation Guide</i> > <i>Hardware Installation</i>).

Message / Problem	Probable cause	Remedial action
	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</i> > <i>WPS-3000 Autosampler settings</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 an Instrument Method" section in the <i>Quick Start Guide</i> .
	Sample type = Blank meaning the autosampler does not inject and therefore no inject signal is sent to the MS.	Use an alternative relay to trigger the MS to start data acquisition. Ensure this relay command is added to the Program right after the Inject command.
	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 Xcalibur" document.
A data channel from the front-end is not acquired	The channel is not enabled in the Chromeleon Server Configuration	Enable the channel in the Chromeleon Server Configuration (see <i>Installation Guide</i> > <i>Instrument Configuration in DCMS^{Link} and Xcalibur</i>).
	Data acquisition is not activated in the LC part of the Instrument Method	Activate data acquisition in the LC part of the Method (see <i>Quick Start Guide</i> . > <i>Creating an Instrument Method</i>).
When opening data in Xcalibur, the default channel displayed is not the desired signal (e.g. UV_VIS_1)	The default signal is determined by the order that drivers are added to the CM Server Configuration	(Re)install the module with the desired signal in the CM Server Configuration ensuring that this is the last driver added.

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, rebooting the PC normally helps.

If you do not want to reboot the PC, you may try the following:

1. Pause the Acquisition (Sequence)
2. Delete all samples from the Acquisition Queue
3. Close Xcalibur (including Home Page, Instrument Configuration, Qual browser, etc)
4. Close the Panels (Chromeleon Xpress)
5. Stop the Chromeleon Server using the Chromeleon Server Monitor (Start > All Programs > Dionex > DCMSLink > Server Monitor)
6. Quit the Chromeleon Server Monitor
7. Using Control Panel > Administrative Tools > Services, try to restart the following services:

- Finnigan Security Server
- Thermo Foundation Acquisition
- Thermo Foundation Acquisition Service Monitor
- Thermo Foundation AutoLogoffService
- Thermo Foundation DatabaseService
- Thermo Foundation SecurityService
- TMODevMsgDispatcher (will usually start and then stop again immediately)

If this doesn't work, open Windows Task Manager or Sysinternals Process Explorer and stop the following executables:

- finSS_Server.exe
- ThermoFisher.Foundation.AcquisitionService.exe
- ThermoFisher.Foundation.AcquisitionMonitor.exe
- FinAutoLogOff.exe
- CFRDBService.exe
- ThermoFisher.Foundation.Auditing.FinSecurityService.exe
- TMODeviceMsgDispatcher.exe
- queueserv.exe
- Either XCMLink.exe OR XCMLinkDump.exe

Then restart the services as listed above. If this does not work, then the PC must be rebooted.


8. Start the Chromeleon Server (using the Chromeleon Server Monitor)
9. Start Xcalibur

4 Collecting Data for Troubleshooting by Dionex

4.1 DCMS^{Link} Event Log

All communication between Xcalibur, DCMS^{Link} and the LC modules as well as additional information are automatically saved in daily log files, which can be sent to Dionex for trouble shooting (part of this information can be displayed for on-line viewing in the DCMS^{Link} Event Log).

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

 **Important:** The log files are purged according to the “**Delete temporary DCMSLink data**” settings in the **Dionex Chromatography MS Link Configuration** dialog (available via the Xcalibur Instrument Configuration). 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 (including the above mentioned log files) for trouble shooting problems with DCMS^{Link}. 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 (Fig. 2) 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 zipped (compressed) archive.

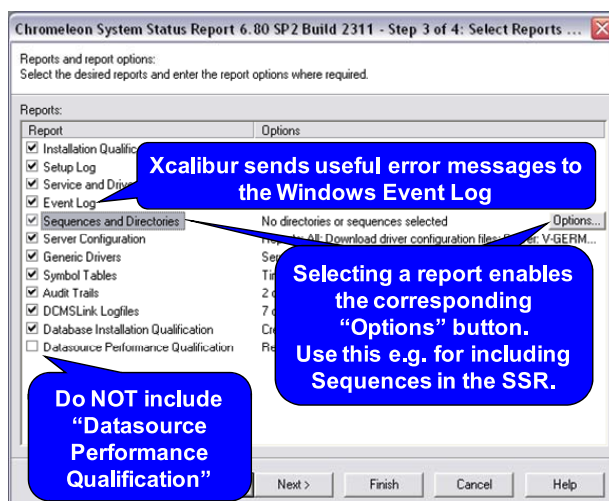


Fig. 2 Selecting Reports to be included in the System Status Report.



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 (*in addition* to the SSR), when you seek support from Dionex.