HUMAN HEALTH

ENVIRONMENTAL HEALTH

CHROMERA MANAGER USER'S GUIDE

Chromera® Chromatography Data System

PerkinElmer®

Chromera Manager
User's Guide

Release History

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Welcome to Chromera

Chromera is a powerfully-easy data system for liquid chromatography. It provides highly configurable and responsive LC instrument control for multi-detector systems, combined with an elegantly simple user interface for interactive processing, and flexible, multi-channel quantitation and reporting.

The **Chromera Manager** acts as a control panel for the system, by providing the following functions:

- Overall system status display
- Status display for connected instruments
- User authentication (when this feature is enabled)
- Provides access to instances of Chromera associated with configured instruments
- Provides access to instances of Chromera associated with data analysis only
- Provides access to general system functions, such as configuration and database utilities

About Fast User Switching

Fast User Switching, is a feature of Windows XP Home Edition and Windows XP Professional (when it is not joined to a domain) that makes it possible to switch between users without actually logging off from the computer. Multiple users can share a computer and use it simultaneously, switching back and forth without closing the programs they are running.

Operation of Chromera is **not compatible** with Fast User Switching and therefore **Fast User Switching must be turned off** under User Accounts in any workstation on which Chromera will be run.

Chromera System Settings

In order for Chromera to work properly, you need to make settings to your operating system. The settings are described in the *Installation Instructions for Chromera Software Kits* should be made before installing and running Chromera.

Overview of Chromera Manager

Overview of Chromera Manager

The Chromera Manager acts as a control panel for the system, by providing the following functions:

- Overall system status display
- Status display for connected instruments
- User authentication (when this feature is enabled)
- Provides access to instances of Chromera associated with configured instruments
- Provides access to instances of Chromera associated with data analysis only
- Provides access to general system functions, such as configuration and database utilities

Only one instance of the Chromera Manager will run at a time but that instance can take on one of two forms:

- A taskbar-style, docked at the top or the side of the desktop
- A conventional Windows application
- Closing the Chromera Manager will not affect data acquisition or processing on a running instance of the Chromera instrument application.

NOTE: *In the case of a single instrument system (such as the ICP-MS speciation system) the Chromera Manager will only be required when one of the system functions (such as instrument configuration or the database utilities) is to be run or if user authentication and tracking is required.*

Launching Chromera Manager

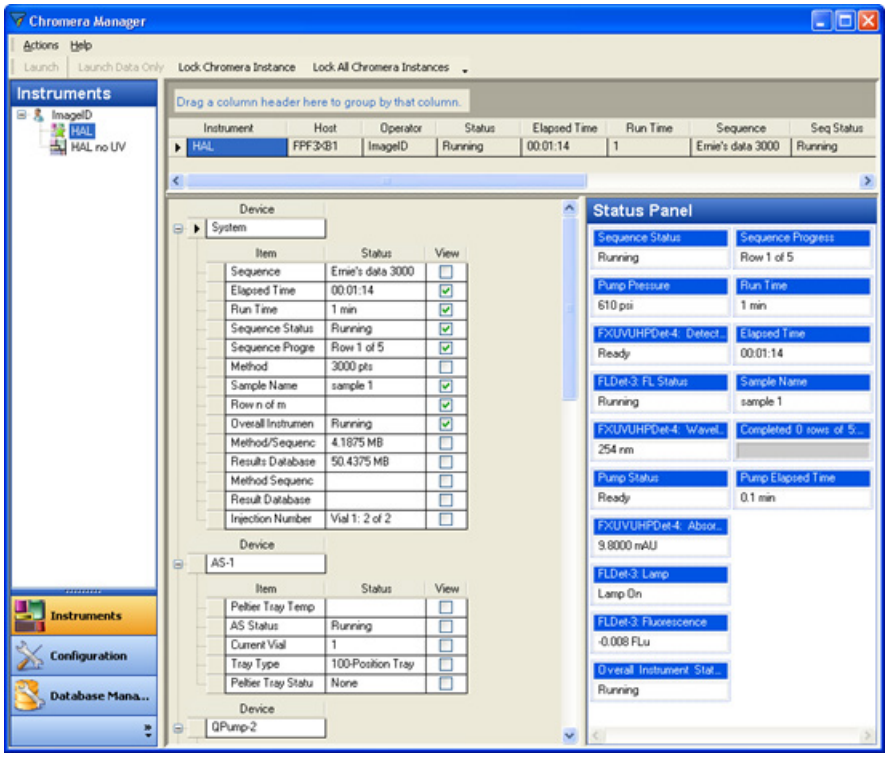
Chromera Manager is started by any one of the following:

- Automatically started when the operating system is booted (this must be set up by the user)
- By choosing the **Chromera Manager** menu item from:

  Start > All Programs > PerkinElmer > Chromera directory.

- By clicking on the Chromera Manager item pinned to the Start menu (must be set up by the user)
- By double-clicking on the Chromera (Manager) icon on the desktop (optionally set up on installation)

When the **Chromera Manager is displayed**, some general status information will appear but no commands are enabled until you log on to the software (unless user authentication is not activated, in which case the Manager is fully active as soon as it is run). The status includes an indication of the system database status (such as remaining capacity in the Results database) and a summary of active instruments and their associated users.



About Logging On/Off

When **User Authentication** is activated a **Log On** dialog displays when the Chromera Manager is run. This is a standard logon dialog, displaying fields for user name, domain and password. You enter a User name and password that is authenticated against the Windows user accounts, and only users who are members of either the ChromeraUsers or ChromeraAdministrators groups will be allowed access to Chromera. These Windows groups will not be created automatically; the Windows administrator who installs the Chromera software will have to create them manually as part of the installation procedure. If the user logon entries are valid then the Chromera Manager window is displayed, otherwise an invalid logon message is displayed.

While the current user is logged on to Chromera, actions taken (such as instrument acquisition, method and sequence editing, data reprocessing and data import/export) are marked with his/her user name. (If user authentication is not activated then the user name of the current Windows user is stored instead.)

You have two options when closing Chromera Manager. The plain **Exit** command will simply close the Manager main window. Any running instances of Chromera will remain accessible to anyone with access to the computer. If you choose the **Exit and Lock My Instruments** command, all open instances of Chromera, opened by that user, will be, minimized to the Task Bar, locked, and rendered inaccessible to other users. Entry of the user name and password of the user applying the lock will be required to access those instances. A lock can also be removed via the unlock function available to a Chromera Administrator.

You can also lock Chromera Manager itself, which will make Chromera Manager inaccessible to other users (other than a Chromera Administrator, who can remove the lock).

Online/Offline Instance

An **online** instance of Chromera is one that controls an instrument and acquires and process data from it. An **offline** instance is one that is not connected to an instrument but may be used to edit methods or sequences, view data, reprocess data and generate reports.

Each instance of Chromera will run independently and there is no interaction between them, other than general restrictions on editing data in one instance that is in use by another. Such concurrent data access restrictions are implemented through the data layer and not through direct communication between instances.

Accessing an Instrument

You can access an instrument by one of the following two ways:

User Authentication Active

Once logged in to the Chromera Manager the instrument display shows a summary status of all active instruments, together with detailed status for a selected instrument. All instrument configurations associated with all Chromera users are displayed in a tree structure.

Users are able to attempt to connect to any currently inactive instrument on their list of configured instruments by selecting it in the tree and choosing the **Launch** command. If connection to the instrument fails, an error message will be displayed to the user explaining the reason for the failure; otherwise a new instance of Chromera will open for that instrument.

- To access one of their active instruments, simply click on the Chromera instance associated with that instrument. If the instrument was locked then you will have to log on to that instance when prompted, otherwise the Chromera window will maximize immediately.

NOTE: *Only the person who locked an instrument instance can log on to it in this way; however an Administrator will be able to unlock an instrument instance from Chromera Manager.*

No User Authentication

When user authentication is not activated the basic approaches to accessing an instrument are the same basic model except that no user logon will ever be required. An instrument associated with the logged on (Windows) user can be activated from the Chromera Manager, and any running instrument instance can be accessed simply by selecting that Chromera window.

Accessing Offline Data Analysis

Once the Chromera Manager is fully enabled (after log on if user authentication is activated, or otherwise as soon as it is run) you are able to start an instance of Chromera editing that is not associated with any instrument, for the purpose of data analysis and/or data set editing. Such an instance will provide all the capabilities of Chromera that do not involve communication with an instrument.

The layout of a data analysis instance is persisted for each user separately from that of each instrument that user has access to. Clearly, a data analysis layout would not include the Control Panel or Status Panel, since these would serve no purpose.

Administrator Functions

NOTE: *This section is not applicable for systems in which user authentication is not enabled. For such systems any user will have complete access to all Chromera instruments and functions, and instrument locking will not be available.*

Since Chromera authenticates against the Windows user accounts it is aware of the OS groups to which a user belongs. Chromera users must belong to either the basic Chromera users group (group name ChromeraUsers) or the Chromera administrators group (group name ChromeraAdministrators). Members of the ChromeraAdministrators group will have access to functions not available to members of the ChromeraUsers group.

Chromera Administrators are able to unlock any instrument instance of Chromera locked by any user. This process should ideally cause the active user ID for that instrument instance to be changed to that of the administrator, but this may not be feasible in this release.

Similarly, Chromera Administrators will have access to all instrument configurations and not just their own, as will be the case with ordinary users. Other functions available only to Chromera Administrators are:

- All database management functions (only Create and Backup is available to ordinary users)
- The ability to copy configurations from one user to another. Thus an administrator could readily make a specific instrument configuration available to all users of the system or some subset thereof.

Operating System User Accounts

Chromera identifies and tracks the actions of multiple users of the system by providing for separate instances of the Chromera application, each having an associated logged on user.

A basic Chromera user is not required to be a local administrator of the computer. However, a Windows Administrator user will have access to additional system-wide functions not available to general users.

User Configuration

A Chromera system administrator does not need to create user accounts within the software, since Chromera performs user authentication against existing operating system user accounts.

User logon is an optional function and may be disabled at the system level by users who do not require that functionality. When user authentication is disabled, an instrument or an offline instance will open immediately on request (i.e., instances will never be locked) and no user tracking is performed.

User Logon

Each instance of Chromera, either an instrument instance or an offline instance, will provide separate user authentication to avoid the need for user context switching within the application. Before you can access an instance of Chromera, either to access an instrument or to perform offline data analysis or editing, the logon procedure is required (when user authentication is enabled).

User Tracking

The identity of the user performing certain actions is recorded with the data generated from the action. When user authentication is activated the name of the user logged on to Chromera is recorded. When user authentication is not activated the name of the Windows user account is recorded.

Data Acquisition

The identity of the user initiating any data acquisition task (via method or sequence) that results in the storage of raw data is recorded in the data associated with that raw data.

Reprocessing

The identity of the user initiating any data reprocessing task that results in the storage of result data, is recorded in the data associated with those results.

System Tray Icon

When Chromera Manager is minimized it will not appear in the Windows taskbar but in the System Tray as the standard Chromera icon.

Chromera Manager System Tray Popup Menu

Right-clicking on the Chromera Manager icon in the system tray displays the following popup menu items.

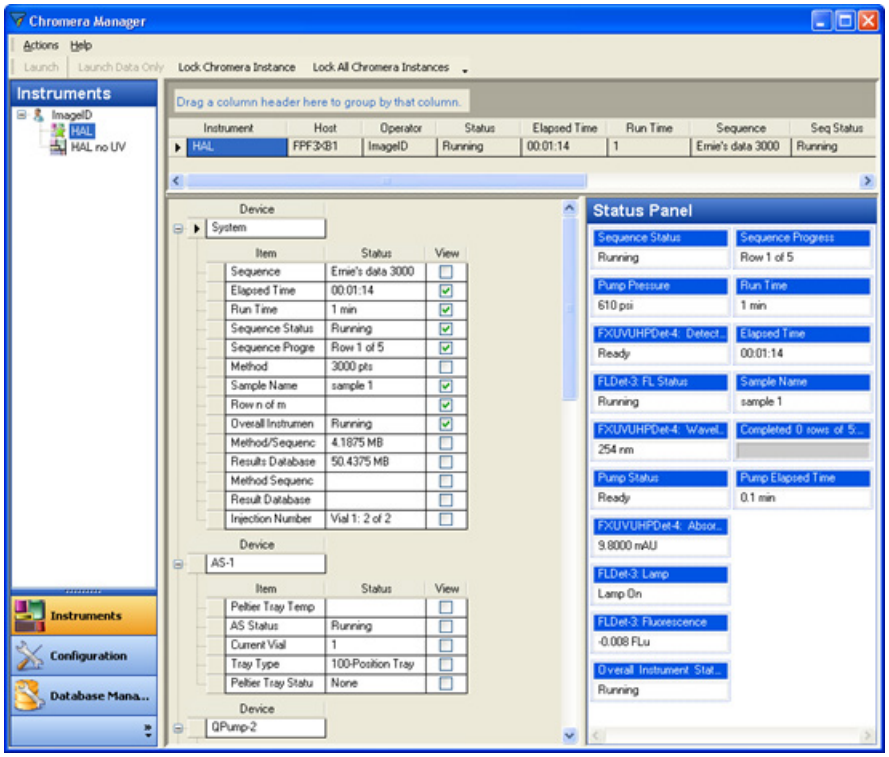
Command	**Description**
Close	Closes Chromera Manager.
Lock	Locks Chromera Manager So that only the current user can access it.
Restore	Restores the Chromera Manager window as it was prior to being minimized to the tray.
Switch User	Enables a different user to replace the user currently logged on to Chromera Manager

Using Chromera Manager

Main Screen

The overall layout of Chromera Manager is the same as the main application. That is, it contains a Navigation Pane on the left and a Client Area containing one or more panes. The contents and function of the client area depend on the selection made in the Navigation Pane. This example shows a navigation pane on the left. In the client area it shows, a status summary table across the top, and a device status table along side an instrument status pane. The main screen contains the following: Navigation Pane; Instrument Status Tree; Instrument Status; Instrument Configuration; and Database Management.

The name of the logged on user is shown (in parentheses) in the title bar, following the words **Chromera Manager**.



Main Menu

The following Chromera Manager commands are accessible from the **Actions** menu.

NOTE: *Some items in the Actions menu are only available and appear only when using **User Authentication**.*

Menu	Command	Description
Actions	Launch	Attempts to start an online instance of Chromera for the selected instrument. Launch is enabled when valid for the selected instrument and current user. If user authentication is not active then any user can launch any instrument. If user authentication is active then only instruments assigned to the logged-on user can be launched (only these will be visible in this case).
	Launch Data Only	Attempts to start an offline instance of Chromera for the selected instrument. It is enabled when valid for the selected instrument and current user. **NOTE:** If the selected instrument has no associated devices then a user will have the opportunity to create an instrument configuration on-the-fly when creating a new method or sequence.
	Administration ►	Displays the Logon dialog and then (assuming a valid user logon) unlocks the selected locked instrument. Disabled when the selected node is not associated with a locked instrument.
	Unlock	
	Unlock All	Displays the Logon dialog and then (assuming user logon valid) unlocks all locked instrument instances of Chromera. This submenu is entirely disabled if the logged on user is not a Chromera Administrator.
	Configure User Events	Displays the environments (that correspond to the Navigator buttons). Expanding a button displays the events that you can turn on or off.
	View Current Session Logs	Displays the **Data Selector – Event Viewer** screen that you use to search the Event Log database.
	Switch User…	Displays the Logon dialog. If the entered logon is valid then Chromera Manager switches from the previous logged on user to the new user and all displays will be updated appropriately.
	Lock Chromera Manager	Locks Chromera Manager, so that it is only accessible to the current user (or a Chromera Administrator) and minimizes Chromera Manager to the System Tray.

	Lock Chromera Manager and My Instruments	Locks Chromera Manager, so that it is only accessible to the current user (or a Chromera Administrator), locks all of the user's open instances of Chromera and minimizes Chromera Manager to the System Tray.
	Exit	Closes Chromera Manager. Any open instances of Chromera are left accessible to any user of the computer.
	Exit and Lock My Instruments	Locks all of the user's open instances of Chromera and closes Chromera Manager.
Tools	Version 2.x Database Transfer	Displays a dialog to find 2.x databases in the SQL servers to transfer.
Help	Topics	Displays the help topics for Chromera Manager
	About Chromera Manager	Displays the About Chromera Manager dialog.

Navigation Pane

The Navigation Pane in the Chromera Manager has the same fundamental form and behavior as that in the main Chromera application, except for a different set of function buttons. In the Chromera Manager the buttons in the navigation pane are: Instruments, Configuration, and Database Management. Also, the Navigation Pane has an associated popup menu with the same commands and functionality as the main application.

The title bar of the Navigation Pane displays the name of the environment selected via the buttons.

The contents of the panel above the buttons will depend on:

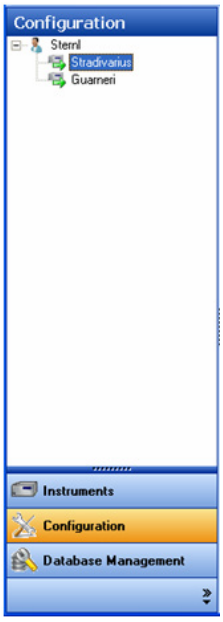
- The system configuration (single workstation or networked system).
- The button selected.
- The permission level of the logged on user.

The primary layout is a tree structure indicating the defined instrument configurations for the logged-on user (Chromera user if authentication activated, else Windows user), or for all Chromera users. Which of these layouts is applicable in for each view will be defined in the sections below.

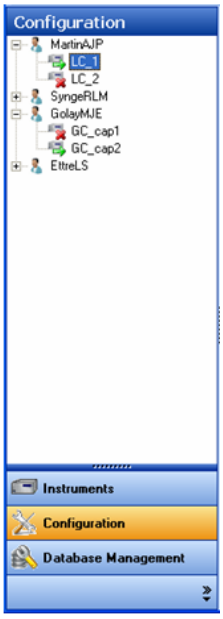
The following examples show typical displays:

(i) **A workstation system where the logged on user is not a Chromera Administrator**

(ii) **A workstation system where the logged on user is a Chromera Administrator (shows all users)**



Not an Administrator

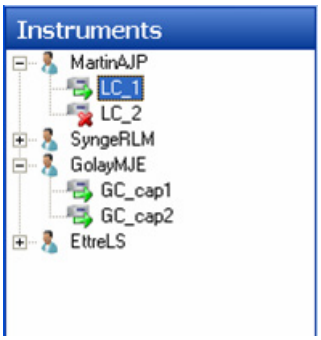


Administrator

Instrument Status Tree

Under each displayed user in the tree are the configured instruments on that computer that are associated with that user. The same user name may well appear under several computers. The icon displayed for each instrument will indicate its status – Active (connected to Chromera), Not Active (not connected to Chromera), Error (connected to Chromera but a fatal error has occurred) or Port Conflict (a port configured for a device in this inactive instrument is in use in another active instrument.

If the system is a stand-alone **Workstation** then the top level node(s) of the tree will display all users and the second level nodes under each user will display the configured instruments associated with that user.



When a Chromera Administrator is logged on the Instruments tree will display all Chromera users and all their assigned configurations. When a basic Chromera User is logged on, only the configurations associated with that user will be displayed and no other user nodes will be visible.

The second level nodes (under each user) display the configured instruments associated with that user. The icon displayed for each instrument will indicate its status – active or not active (that is, connected to Chromera or not connected).

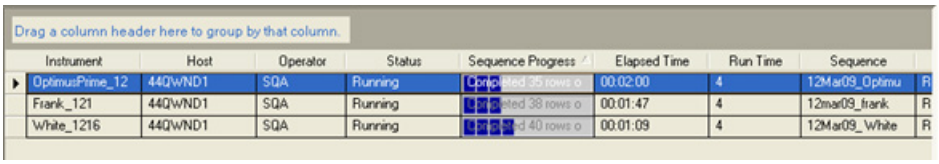
Tree Control popup Menu

This menu displays when you right click on an instrument node on the tree. It does not display if you click on a user node. Note that the clicked-on instrument becomes the selected instrument if it was not already.

Command	**Description**
Copy to All Users	Copies the selected instrument configuration to all users in the tree. Enabled when a Chromera Administrator is logged on and an instrument configuration node is selected in the tree.
Create Shortcut on Desktop	Creates a shortcut on the Windows desktop that will launch the selected instrument
Create Data Only Shortcut on Desktop	Creates a shortcut on the Windows desktop that will launch the selected instrument in Data Only mode

Status Summary

This contains status information for all active instruments; inactive instruments do not appear.



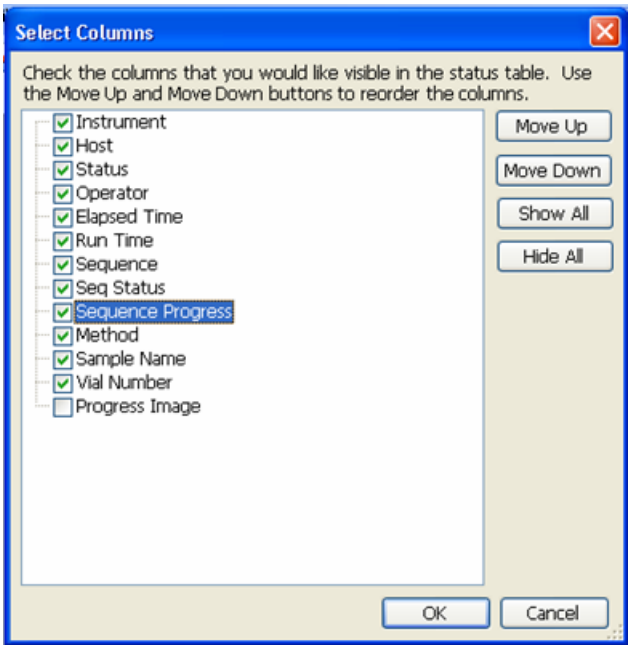
The columns displayed are user configurable (both inclusion/exclusion and position). Right-clicking in the status summary area displays a **Select Columns** popup menu. Clicking Select Columns displays the **Select Columns** dialog so that you can set the positions of the columns via this dialog. You can also drag-and-drop columns in the summary table itself.

Status Summary Popup Menu

Select Columns	Displays the **Select Columns** dialog, enabling the user to choose the columns to be displayed in the summary and their order.

Select Columns

The **Select Columns** dialog is used for selecting which of the available columns should appear. The dialog displays a list of entries for each available status item, as listed in the Statue Summary. Items indicated with a checkmark will be displayed. The **Show All** and **Hide All** buttons check and uncheck all selections. **Move Up** and **Move Down** buttons enable the user to order the columns as required.



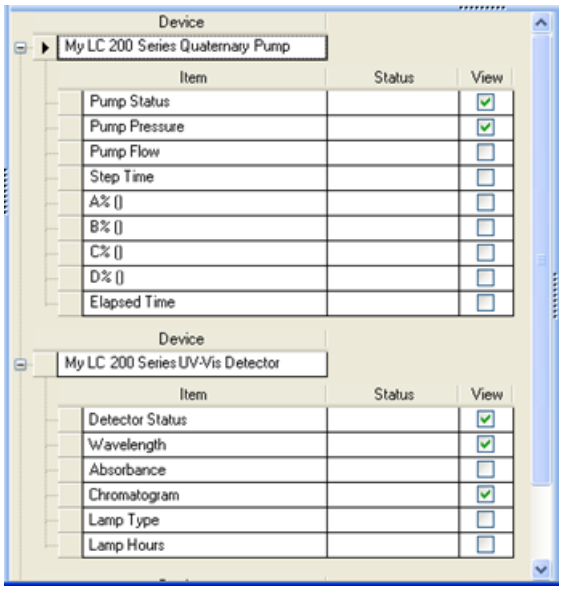
- Click **OK** to update the summary display to show the updated set of columns.

The status items available for display in the table are described below in their default order.

Data Item	**Description**
Instrument	The user name associated with the active instrument. This is the name applied to the instrument by the current operator of the instrument. Thus it may be an instrument known to the observer under a different name.
Host	The name of the computer to which the instrument is connected. This column is only available when the system is configured to receive status from other Chromera systems on the network.
Operator	The log on name of the user associated with the active instrument.
Status	The run status of the instrument
Elapsed Time (min)	The time into the current run. This field will be blank if data acquisition is not in progress.
Run Time (min)	The length of the run as defined in the method. This will be the longest time defined for any device.
Sequence	The name of the sequence running on the instrument. This field will be blank if there is no sequence (i.e. an instrument under manual control or single run mode.
Seq Status	The running state of the sequence (Running, Paused, Stopped). This field will be blank if there is no sequence.
Sequence Progress	A progress bar displaying the numbers of rows completed from the total number of rows to be run. The progress bar should be annotated with the text: Row n of m where 'm' is the total number of rows to be run and 'n' is the current row within that total. Note that 'n'; may not be the actual row number within the sequence, if the sequence was not run from the first row. This field will be blank if there is no sequence.
Method	The name of the method currently active on the instrument.
Sample Name	The Sample Name associated with the currently running sample.
Vial Number	The vial number from which the currently running sample was injected. This column will be blank if no autosampler is configured. It should also be blank when no run is in progress and the autosampler is not actively sampling.

Device Status Display

This is the same control that appears in the **Status Panel Setup dialog**, used for defining the items to appear in the Status Panel.



As the View field is checked or unchecked for different items, the Status Panel display is updated. The Device Status display will not appear when an inactive instrument is selected in the Instruments tree. Instead the pane will contain the message <instname>: Inactive instrument.

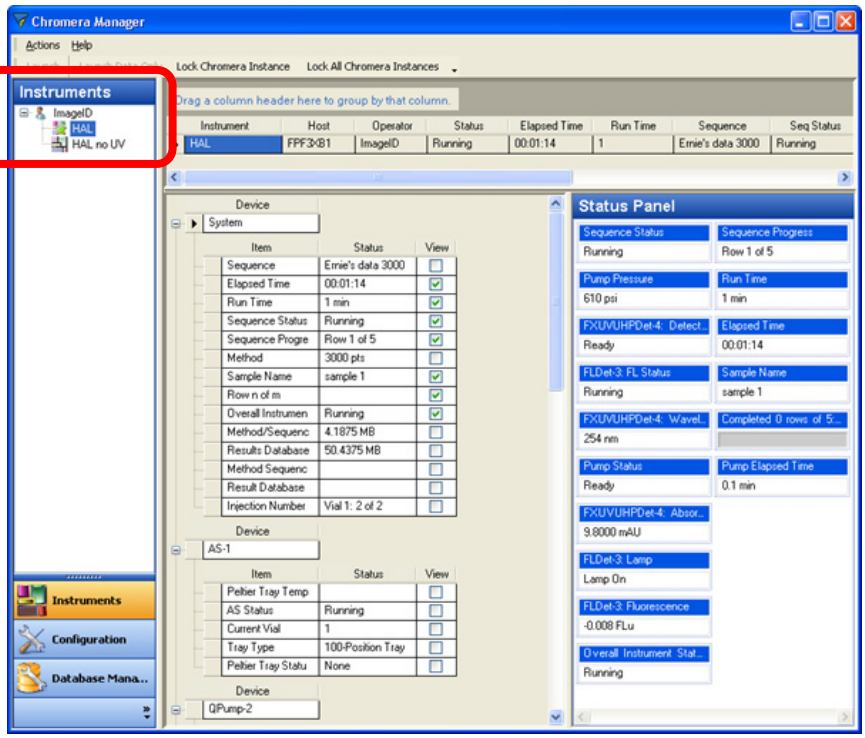
Device Status Display Popup Menu

This menu contains the same commands that appear within the Status Panel Setup dialog.

Command	**Description**
Expand All	Fully expands the grid to show all items for all devices.
Collapse All	Hides all status items in the grid leaving only the device bands shown.
Select All	Checks all items in all devices
Clear All	Clears the check marks from all items in all devices

Instrument Status

Selecting the Instruments button causes the client area to show a summary of the status of the active instruments (for the logged on, or selected, user), as well as more detailed status for the selected instrument (assuming this one of the active instruments). The following example shows an example of Instrument **HAL** selected.



Select an instrument in either the tree control or within the summary status area. These two controls are synchronized such that a selection made in one causes the other to be updated. (*Updated* does not always mean that the same instrument is selected in the other control, since inactive instruments do not exist.) If an inactive instrument is selected in the tree then no row in the summary status will be selected.

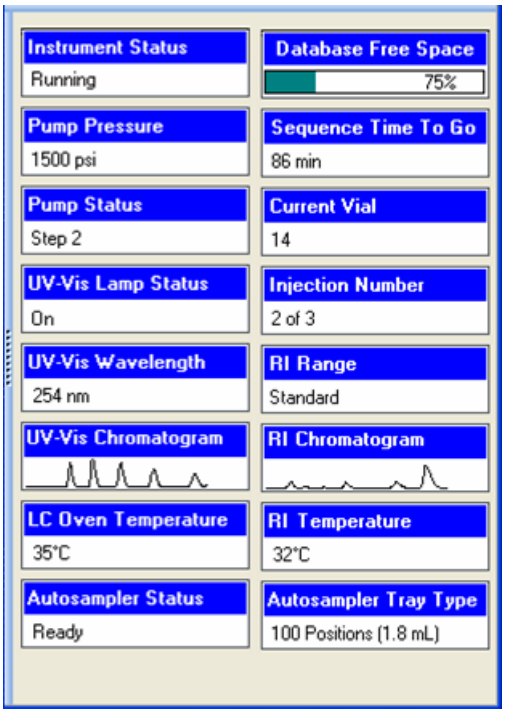
Device Status Display Popup Menu

Right-clicking in the **Device Status** display opens a popup menu. This menu contains the same commands that appear within the Status Panel Setup dialog.

Command	**Description**
Expand	All Fully expands the grid to show all items for all devices.
Collapse	All Hides all status items in the grid leaving only the device bands shown.
Select All	Checks all items in all devices
Clear All	Clears the check marks from all items in all devices

Status Panel

This is the same control that appears within the Status Panel in the main Chromera application but here it is contained within a simple sizeable pane rather than the fly-out/pinnable panel in the main application. Therefore the pane contains only the configured status elements.



The Status Pane can contain as many columns and rows of status elements as the size of the pane allows.

Where multiple columns exist the elements are order in priority column by column. That is, the highest priority elements are in column 1, then next highest in column 2, etc.

The Status Pane is blank when an inactive instrument is selected in the Instruments tree.

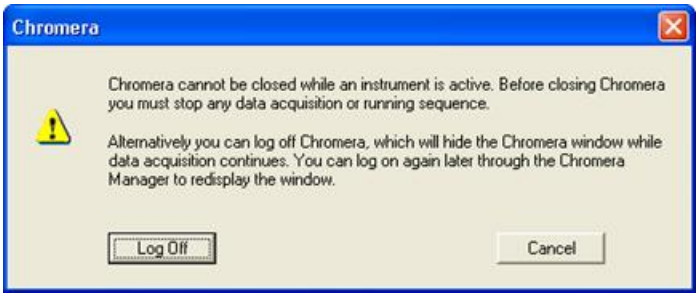
Status Pane Popup Menu

The popup menu in the Status Pane is similar to that associated with the Status Panel in the main application, with the exception that it does not contain the Status Dialog command.

Command	Description
Sort ► • Alpha Ascending	Status elements will be sorted in ascending alphabetical order.
• Alpha Descending	Status elements are sorted in descending alphabetical order.
• Importance	Status elements are sorted in order of priority, as set in the Device Descriptor. When multiple columns exist the ordering follows the standard 'N' pattern.
Horizontal Scroll Bar	When checked a horizontal scroll bar is displayed when there are more status elements configured than can fit in the pane.
Status Dialog	Used for defining the items to appear in the Status Panel.

Exit Dialog

The one **File** menu command that is common to all environments is **Exit**. If you select Exit in an online instance of Chromera when either a Single Run mode run is in progress or a sequence is running, then one of the following dialogs displays, depending on whether or not user management is enabled.



Exit dialog when user management is active

Exit without user management

User Management Active Version

In this case the dialog will include Log Off and Cancel buttons and the message text is:

Chromera cannot be closed while an instrument is active. Before closing Chromera you must stop any data acquisition or running sequence. Alternatively you can log off Chromera, which will hide the Chromera window while data acquisition continues. You can log on again later through the Chromera Manager to redisplay the window.

If you click the **Log Off** button, the instance of Chromera is locked and hidden, while data acquisition continues. If you click the **Cancel** button then the Chromera window remains open and visible.

Without User Management

In this case the dialog will include just a **Close** button and the message text is:

Chromera cannot be closed while an instrument is active. Before closing Chromera you must stop any data acquisition or running sequence. When you click the **Close** button the Chromera window remains open and visible.

System Database Management

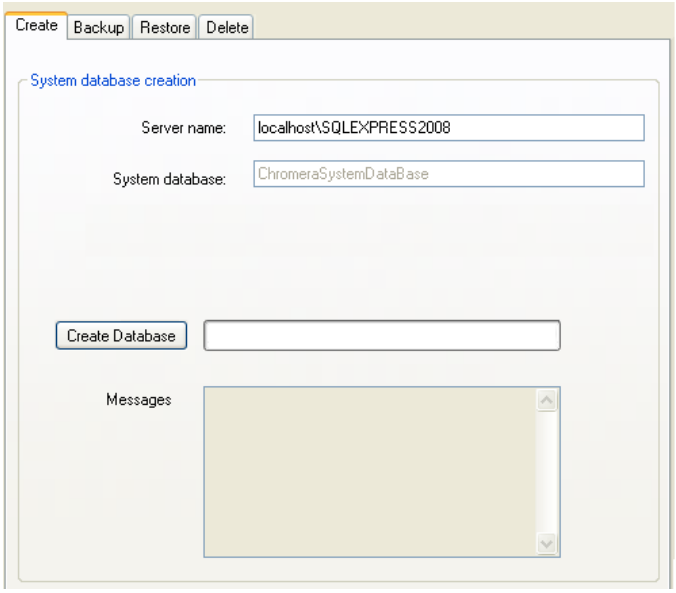
The System Database Management function in Chromera maintains your system information such as users and configuration information. When you first install Chromera you will need to first create a system database before you configure any instruments.

You should regularly back up this database to maintain your system information in the event of a problem. The system database management functions are:

Create Backup Restore Delete

How to Create a System Database

1. Click on the **System Database Management** button to display the available **System Database** settings.



2. Click the **Create Database** button.

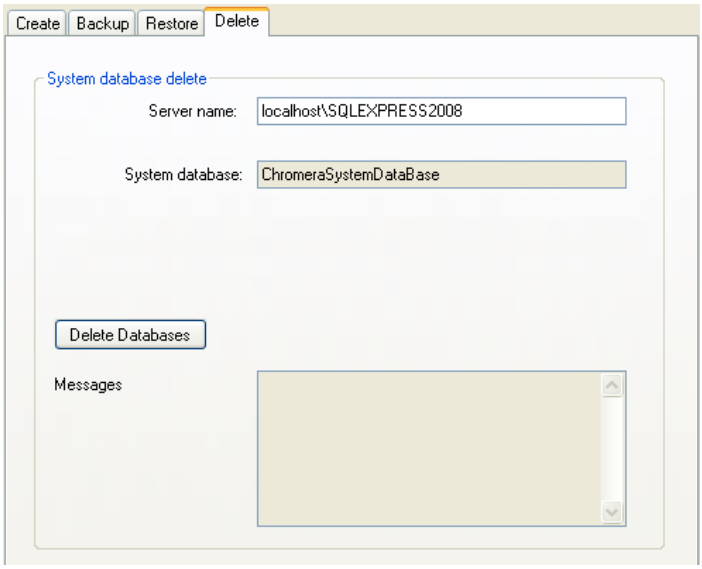
3. Observe the Message box to see the message, Database created successfully. Field descriptions are listed below.

Field	Description
Server name	Displays the name of the database server configured for the selected instrument. When you configured this Instrument the Server name was set in **Server name** field in the **Configuration** screen for this Instrument. Refer to Configuration.
System database	Displays the name of the System Database that will be created.
Create Database	Click this button to create the system database. As the operation proceeds the progress bar to the right of the **Create Database** button fills in. The result of the create database operation is indicated in the **Messages** box.
Messages	A box that displays messages resulting from the Create or Delete Database command. If the Server or required database name field is empty when the Create Database button is clicked, an error message will be displayed informing the user that an instrument must be selected prior to issuing the Create Database command. If the operation is successful a message indicating this will be displayed.

How to Delete a System Database

1. Click on the **System Database Management** button to display the available System Database settings.

2. Click on the **Delete** tab.

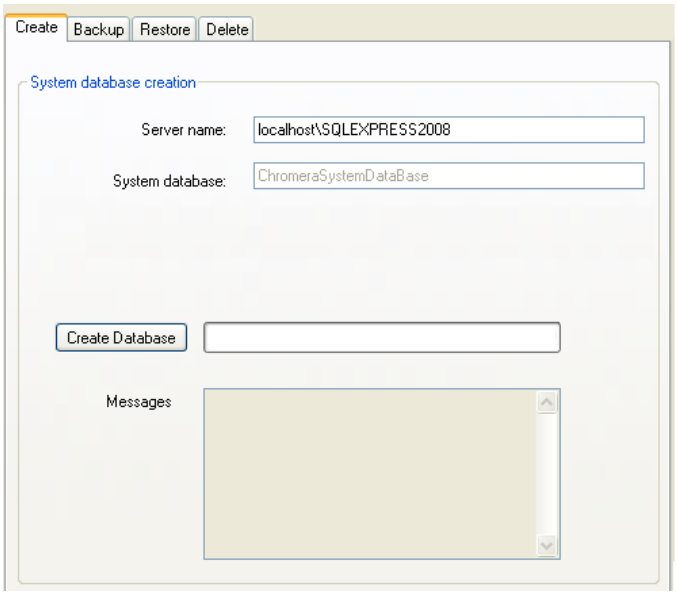


3. Click the **Delete Databases** button.

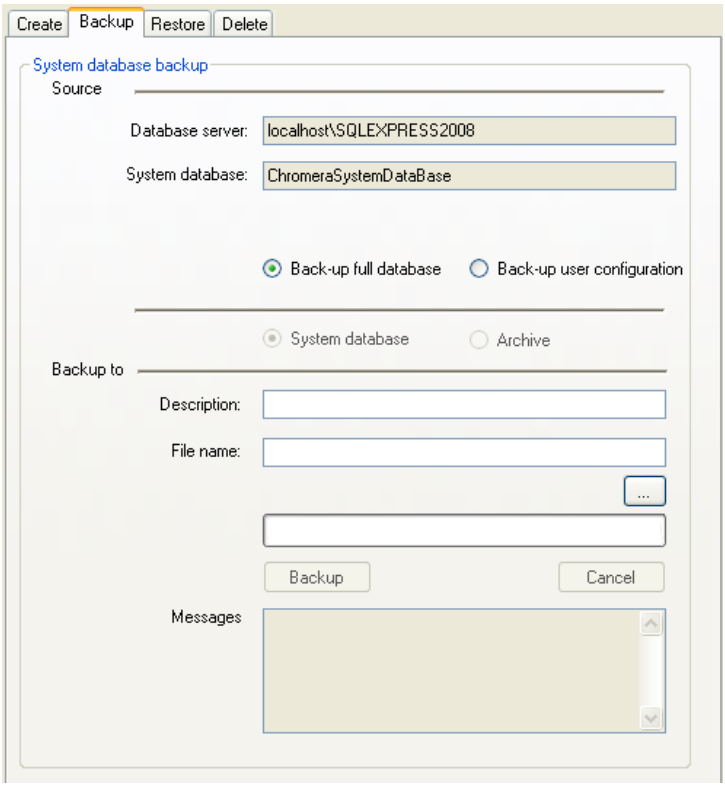
4. Observe the Message box to see the message, Removal of database "ChromeraSystemDatabase" successful.

How to Backup a System Database

1. Click on the **System Database Management** button to display the available **System Database** settings.



2. Click on the **Backup tab**.



3. View the Source **Database server** and the **System database** name.

4. Select the type of backup you want to perform: **Backup full database** or **Backup user configuration**.

5. If you select to **Backup full database,** in the **Description** field type a name to identify your backed-up database.

6. Click this search button ... to display the **Save database backup file dialog** if you selected to **Backup full database** or the **Save database user configuration backup file dialog** if you selected **Backup user configuration** where you can type a file name for your backup file.

7. Click the **Backup** button to start the backup. As the operation proceeds the progress bar fills in.

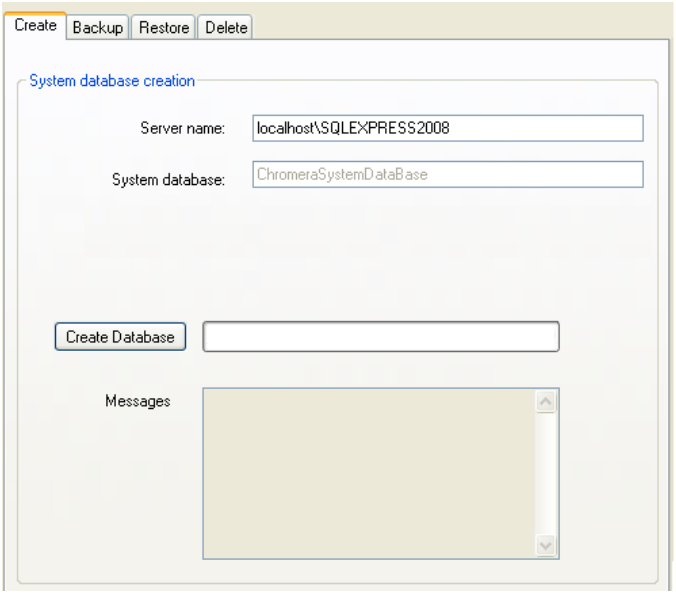
8. The result of the create database operation is indicated in the **Messages** box. Field descriptions are listed below.

Field	**Description**
Source:	
Database server	Displays the name of the database server configured for the selected instrument. When you configured this Instrument the Server name was set in **Server name** field in the **Configuration** screen for this Instrument. Refer to Configuration.

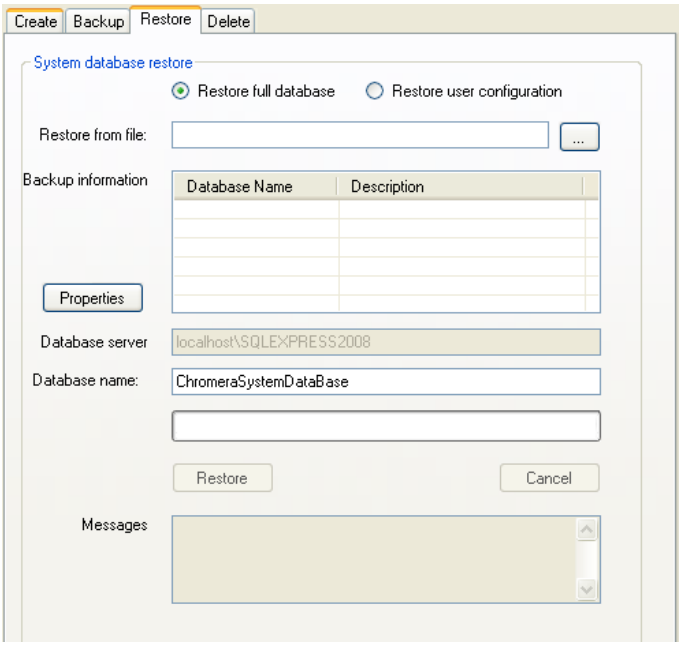
System database	Displays the name of the System Database.
Backup full database	Select to back up the full database.
Backup user configuration	Select to back up only the user configuration.
Backup to:	
Description	If you select to **Backup full database**: Type a name to identify your backed-up database.
	Click this search button to display the Save database backup file dialog where you can type a file name for your backup file.
File name	If you select to **Backup full database**: This field displays the path and name of the file you typed or selected when you clicked the search button.
Select directory	If you select to **Backup user configuration**: This field displays the path and name of the file you typed or selected when you clicked the search button.
Backup	Click this button to start the backup. As the operation proceeds the progress bar fills in. The result of the create database operation is indicated in the **Messages** box.
Cancel	Click this button to cancel the backup before the backup completes.
Messages	A box that displays messages resulting from the Backup database command. Any existing messages (from a previous create) will be cleared when the Create Database button is clicked. If the operation is successful a message similar to the following displays. **Completed backing up database "ChromeraSystem DataBase"**

How to Restore a System Database

1. Click on the **System Database Management** button to display the available **System Database** settings.



2. Click on the **Restore tab**.



3. Select the database you want to restore: **Restore full database** or **Restore user configuration**.

4. Click the search button to display the **Open** dialog and select the file you want to restore.

The path and file name appear in the **Restore from file:** field and the **Backup information** for the file you selected appears in the table.

5. If you selected to **Restore full database,** you can click the **Properties** button to display the **Restore properties** dialog containing information about your backup file.

6. If you selected to **Restore user configuration** the **Restored tables** information displays.
   The **Database server** and the **Database name** display to provide you with information on the database you are about to restore.

7. Click the **Restore** button to start to restore the database. As the operation proceeds the progress bar fills in.

8. The result of the create database operation is indicated in the **Messages** box.
   Field descriptions are listed below.

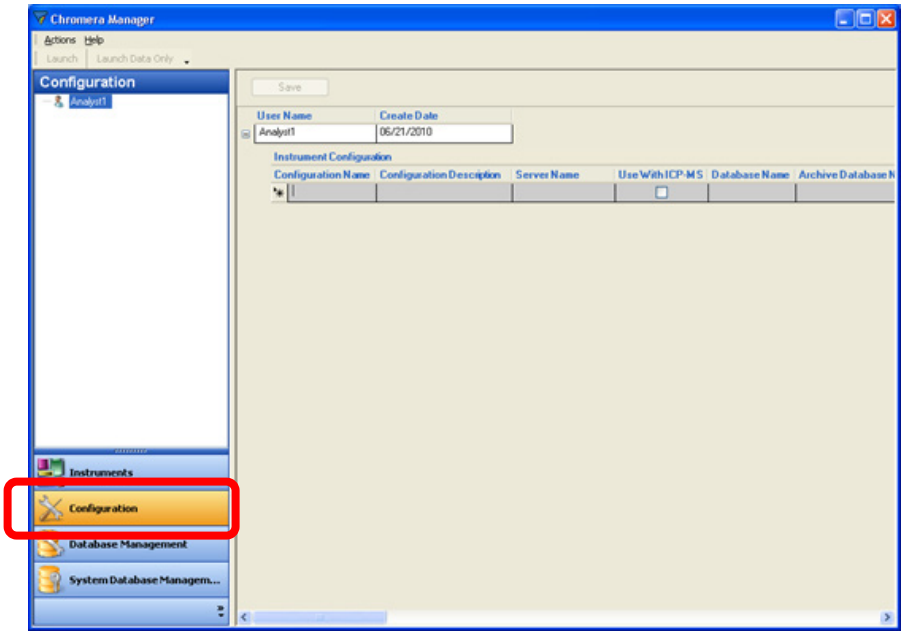
Field	Description
Restore full database	Select to restore the full database.
Restore user configuration	Select to restore only the user configuration.
Restore from file	This field displays the path and name of the file you typed or selected when you clicked the search button.
	Click this search button to display the Save database backup file dialog where you can type a file name for your backup file.
Backup information	This table displays the **Database name** and **Description** (that you entered in the Backup tab)
Properties	Click this button to display the **Restore properties** dialog containing information about your backup file.
Database server	Displays the name of the database server configured for the selected instrument. When you configured this Instrument the Server name was set in **Server name** field in the **Configuration** screen for this Instrument. Refer to Configuration.
System database	Displays the name of the System Database.
Restore	Click this button to start to restore the database. As the operation proceeds the progress bar fills in. The result of the create database operation is indicated in the **Messages** box.
Cancel	Click this button to cancel the restore before the restore completes.
Messages	A box that displays messages resulting from the Restore database command. Any existing messages (from a previous create) will be cleared when the Restore Database button is clicked. If the operation is successful a message similar to the following displays. **Completed restoring database "ChromeraSystem DataBase"**

Instrument Configuration

The following procedure describes how to configure a new instrument.

NOTE: *When configuring more than one pump in an LC system, please make sure that each pump's upper pressure limit is properly set within the method. This will depend on the individual pump's role in the system; be it for column re-equilibration, post-column functions or otherwise.*

1. Click on the **Configuration** button to display the initial **Configuration**.



2. Click in the **Configuration Name** field and type a name that will define the name of the Instrument (an Instrument is a collection of devices). This name can be up to 50 characters and must be unique for this user.

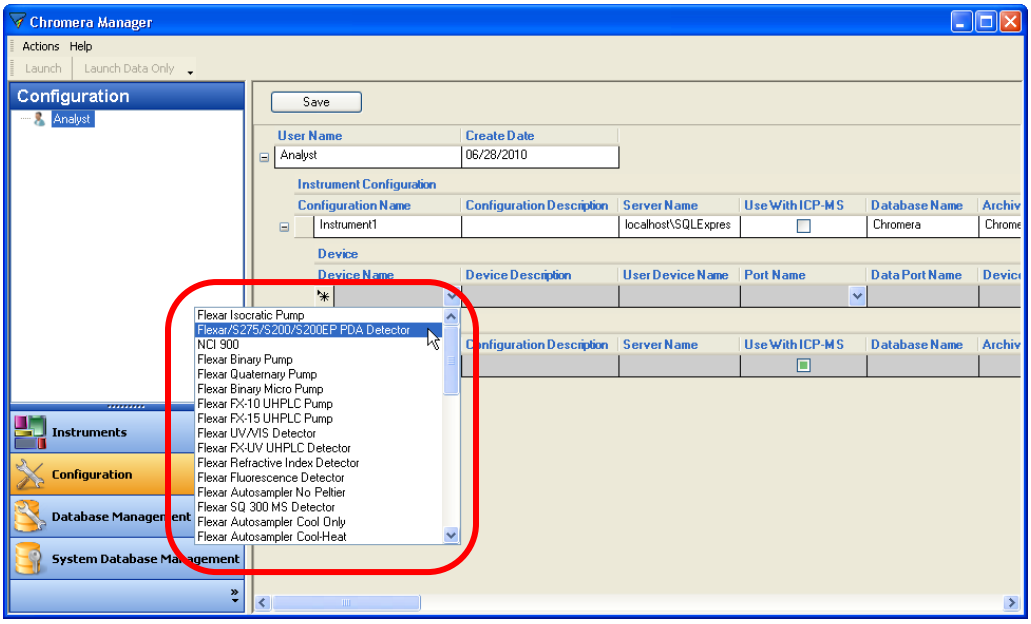
3. Click in **Configuration Description** to type additional information about this Instrument Configuration.
   The moment you click in this field the Server Name, Database Name, Archive Database Name, and Create Date are automatically filled in.

4. Click the **Use With ICP-MS** checkbox if this Instrument Configuration is used when running Chromera from the ICP-MS software.

5. You can leave the default settings for **Server Name**, **Database Name**, and **Archive Database Name** or enter your own.

6. Click the plus button to the left of **Configuration Name** to expand the entry fields so that you can enter the Devices.

7. Click in the **Device Name** field and select a Device Name from the drop-down list.



8. Click in the **Device Description** field and type a description of this device.

9. Initially the **User Device Name** field displays a short name for the device.

   This is an abbreviation for the device type, with a number added if more than one device of that type is present in the configuration. You can modify this by typing a name (using up to 50 characters) by which the device will be known within the software. Each user device name must be unique within the instrument. This name is used (for example) in the Method Editor (tree and grid controls).

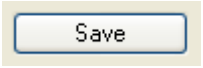
10. Click in the **Port Name** field and select a Port Name from the drop-down list.

11. The **Data Port Name** fills in when you select a device that uses a data port (for example the PDA Detector).

    The **Device Role** fills in.

12. To add another device, click in the next **Device Name** field and select a Device Name from the drop-down list.

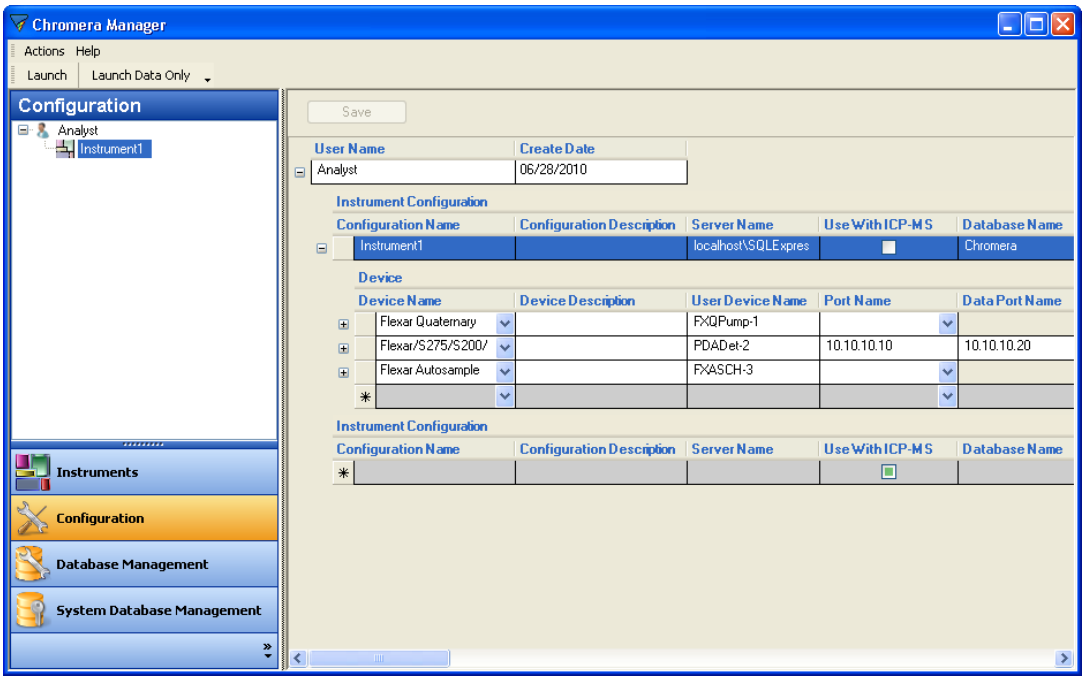
13. Continue to enter the information for the device.

14. When done, click the **Save** button 

to save this **Instrument Configuration**. It is displayed under the user name in the Navigation Pane.

Instrument Configuration

Selecting the **Configuration** button displays the instrument configurations for the logged on (or selected) user in the client area of the screen.



The panel above the buttons in the navigation pane displays the standard user/instrument configurations tree structure for the logged-on user, or for all Chromera users, depending on the logged on users authority.

The selection you make in the tree determines the contents displayed in the client area of the screen. When an instrument is selected in the tree, that instrument ***band*** is selected and expanded to show the devices.

NOTE: *Ordinary users will only see their own names and their own instrument configurations in the tree, while a Chromera Administrator will see all users and all instrument configurations.*

Right-clicking in the instrument tree displays a popup menu where you can copy the selected instrument configuration to all users in the tree.

Band 1: User Information

This band displays information about the user selected in the tree (or the user whose instrument configuration is selected in the tree) within the navigation pane.

Field	Description
User Name	Enter the full name (using up to 50 characters) of the selected user.
User Date	Displays the date the selected user account was created within Windows.

Band 2: Instrument Configuration

This band (**Instrument Configuration)** defines the instrument configurations assigned to the selected user and are displayed when the user row is expanded. A row appears for each instrument configured.

Field	Description
Configuration Name	Type a name that defines the name of the Instrument. This name can be up to 50 characters and must be unique for this user.
Configuration Description	Enter a full description of the instrument.
Server Name	Enter the name of the database host server using any number of characters. The default server is **Localhost\SQLExpress**.
Use With ICP-MS	A checkbox indicating which instrument configuration should be used when Chromera is run from the ICP-MS software. Only one instrument can be checked. Checking any instrument configuration will uncheck any other currently checked. This field only appears for the Speciation application.
Database Name	Enter the name of the active database(s) for this instrument. It can be up to 50 characters. The default name is **Chromera**.
Archive Database Name	Enter the name of the archive database(s) for this instrument. It can be up to 50 characters. The default name is **ChromeraArchive**.
Create Date	Displays the creation date of the Instrument Configuration.
Modify Date	Displays the date of the Instrument Configuration was modified

Band 3: Device Configuration

This band **(Device)** defines the devices assigned to its parent instrument configuration and will be displayed when the parent row is expanded. A row appears for each device configured on the instrument.

Field	**Description**
Device Name	Select the type of device from the drop-down. The list contains all valid devices configured on the system.
Device Description	Enter a full description of the device.
User Device Name	Initially a short name for the device is automatically displayed. This is an abbreviation for the device type, with a number added if more than one device of that type is present in the configuration. You can also enter a name (using up to 50 characters) by which the device will be known within the software. Each user device name must be unique within the instrument.
Port Name	Select the port from the drop-down to which the device is connected. The list contains all valid ports configured on the system. Connections could be Edgeport serial ports (Com 1, Com 2, Com 3, etc.), Nexus connections (ICP-MS Control), or left blank for USB connections.
Data Port Name	This is the IP address that is used with the Photo Diode Array (PDA) detector.

Band 4: Contact Closure Identification

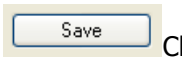
This band identifies the **Contact** closures available on a device that appear as a sub-band under the pumps, Autosamplers, and UV/Visible detectors only.

Field	**Description**
Contact Number	Displays the contact closure ID number (0 or 1).
Contact Name	Displays the standard names for the contact closures (TE1 or TE2)
User Contact Name	A text box where you can enter a custom name (up to 50 characters) to be applied to the contact. This name appears in the Method Editor when timed events for the contact are defined

Band 5: Database Connections

This band (**DB Connections)** defines the databases assigned to the parent instrument configuration and is displayed when the parent instrument row is expanded. Only a single row appears for each instrument. These are the names you see in Database Management.

Field	Description
Server	Enter the name of the database host server using any number of characters. The default server is Localhost\SQLExpress.
Database Name	Enter the name of the active database(s) for this instrument. It can be up to 50 characters. The default name is Chromera.
Archive Database	Enter the name of the archive database(s) for this instrument. It can be up to 50 characters. The default name is ChromeraArchive.



Clicking the **Save** button saves changes made to all of the instrument configuration parameters.

Instrument Configuration Tree

The form of the tree control above the buttons in the navigation pane depends on the logged on user. **Ordinary Chromera users** will only see their own names and their own instrument configurations in the tree, while a **Chromera Administrator** will see all users and all instrument configurations.

Ordinary Users

Administrator

Tree Control Popup Menu

Command	Description
Copy to All Users	Copies the selected instrument configuration to all users in the tree. Enabled when an instrument configuration node is selected in the tree. If the instrument name already exists for one or more user then an error message will be displayed: The configuration could not be copied to these users, as an instrument of that name already exists: <user_name_1> <user_name_2> <user_name_n>
Create Shortcut on Desktop	Creates a shortcut on the Windows desktop that will launch the selected instrument.
Create Data Only Shortcut on Desktop	Creates a shortcut on the Windows desktop that will launch the selected instrument in Data Only mode.

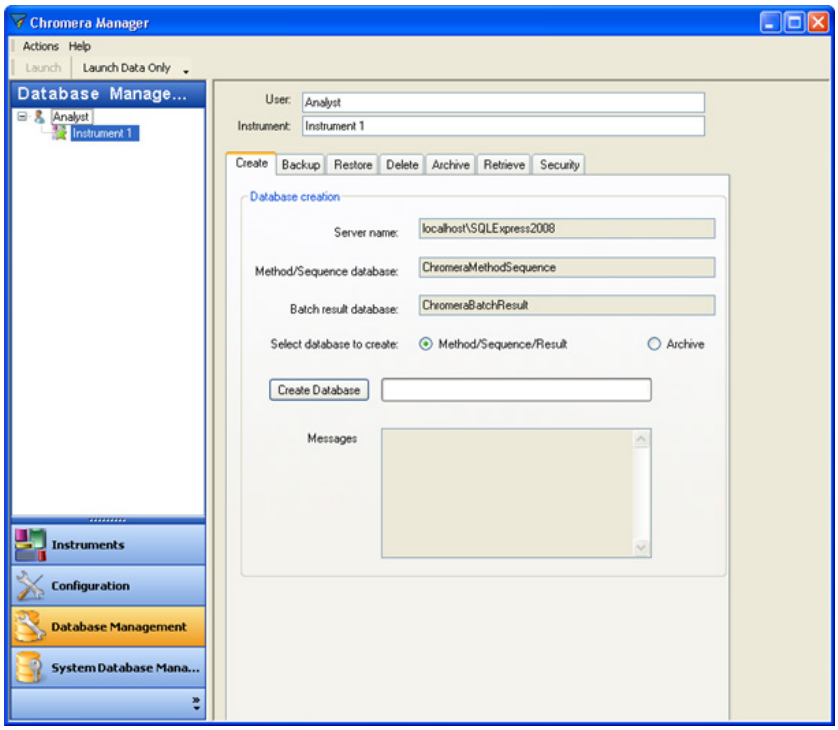
Database Management

Chromera uses a SQL Server Express Edition (capacity >10 GBytes) that includes the use of separate databases for specific data sets linked together to function as a single, large and extensible system. Because of the nature and content of the information contained in these individual databases, they are expected to grow in size at different rates, with the raw data database expected to grow at the fastest rate. To accommodate the fact that, even with a multiple database configuration, individual databases still cannot exceed 10 GBytes in size, a mechanism automatically extends the capacity for raw data storage when an individual raw data database approaches maximum size.

This mechanism will automatically create a new raw data database when necessary, to extend storage capacity by functioning as one single, virtual database

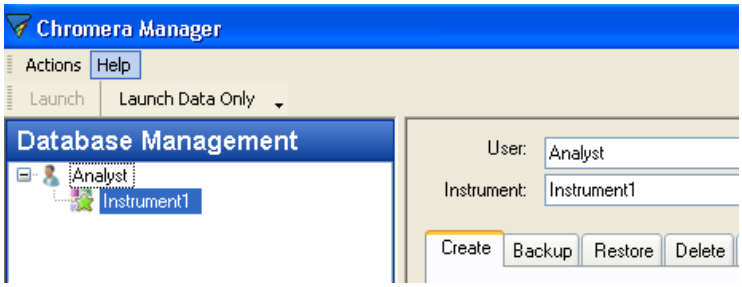
Main Screen

When the **Database Management** button is selected the **large area in the center of the screen** displays tabs of the various database management functions.



The **Configuration** panel (above the buttons in the navigation pane) displays the standard user and instrument configurations for the logged-on user, or for all Chromera users, depending on the logged on users authority as described above. A selection in this panel determines the contents of the certain fields within the display area. The fields above the tabbed control are common to all the database utilities. The controls on each tab will be described in the section relating to that function.

When there is no selection in the "tree" the **User** and **Instrument** fields will be blank. When a user is selected in the tree, the user name displays in the **User** field but the Instrument field will be blank. When an **instrument is selected** in the tree the instrument name displays in the Instrument field (and the "parent" user name will be displayed in the User field).

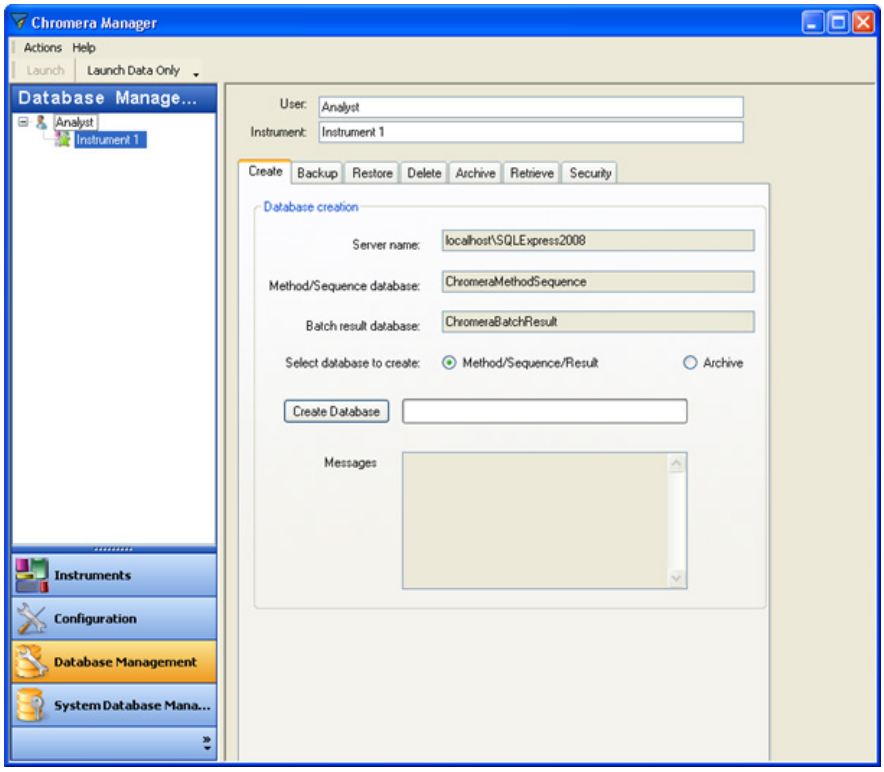


NOTE: *The Chromera Administrator has access to all database management functions whereas a basic Chromera User will have access only to the Create and Backup tabs.*

Field	**Description**
User	Displays the selected user name or the user name associated with the selected instrument.
Instrument	Displays the selected instrument name. The field is automatically populated when Instrument Configuration from Tree view at Left hand pane is highlighted.

Create

This function creates a primary Chromera database set according to the definition in the selected instrument configuration. When an instrument is selected in the tree, the key fields in the **Create** tab are filled in automatically.



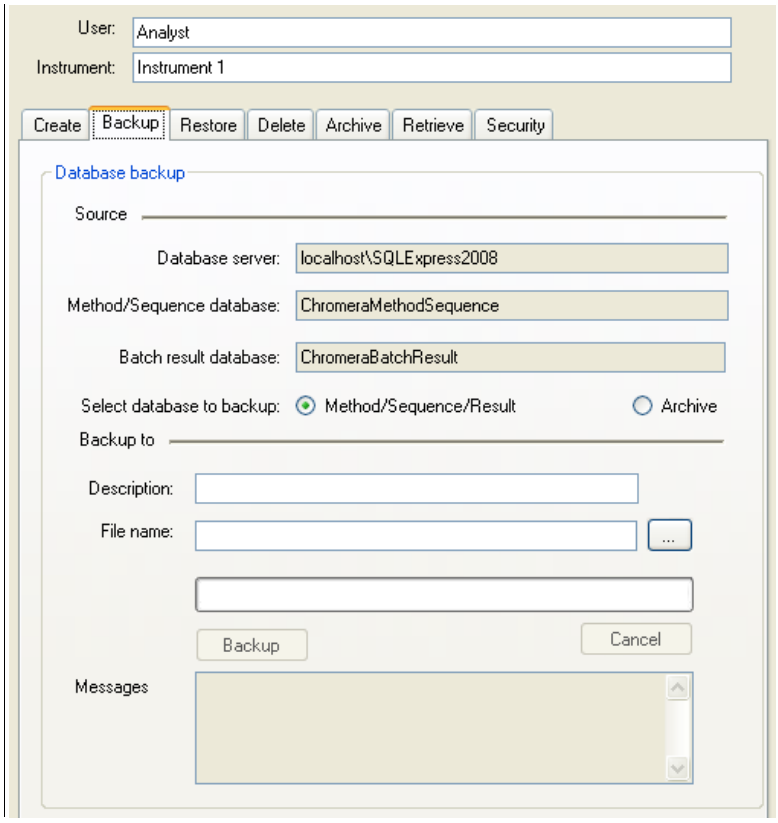
Field descriptions are listed below.

Field	**Description**
Server name	Displays the name of the database server configured for the selected instrument. When you configured this Instrument the Server name was set in **Server Name** field in the **Configuration** screen for this Instrument. Refer to Configuration.
Method/Sequence database	Displays the name of the Method/Sequence database associated with the selected **Instrument**. This is the **Database Name** you entered for this Instrument plus the suffix ***MethodSequence***. For example, if the Database Name is Chromera-1 you will see **Chromera-1MethodSequence.** Refer to Configuration. It is displayed when **Method/Sequence/Result** is selected as the database to be created. It is not displayed when **Archive** is selected.
Batch result database	Displays the name of the Method/Sequence database associated with the selected **Instrument**. This is the **Database Name** you entered for this Instrument plus the suffix BatchResult. For example, if the Database Name is Chromera-1 you will see **Chromera-1BatchResult.** Refer to Configuration.

	It is displayed when **Method/Sequence/Result** is selected as the database to be created. It is not displayed when **Archive** is selected.
Archive database	Displays the name of the **Archive** database associated with the selected instrument. This is the **Archive Database Name** you entered for this Instrument plus the suffix Archive. For example, if the Archive Database Name is Chromera you will see **ChromeraArchive.** Refer to Configuration It is not displayed when **Method/Sequence/Result** is selected as the database to be created. It is displayed when **Archive** is selected.
Select database to create	Select the database you want to create; **Method/Sequence/Result** or **Archive**.
Create Database	Click this button to create the databases associated with the selected instrument, as defined in the fields on the tab. As the operation proceeds the progress bar to the right of the Create Database button is progressively filled in. The result of the create database operation is indicated in the Messages box.
Messages	A box that displays messages resulting from the Create Database command. If the Server or required database name field is empty when the Create Database button is clicked, an error message will be displayed informing the user that an instrument must be selected prior to issuing the Create Database command. Any existing messages (from a previous create) will be cleared when the Create Database button is clicked. If the operation is successful a message indicating this will be displayed.

Backup

This function creates a complete and exact duplicate of the entire database so it can be restored in case the active version becomes corrupted or otherwise unusable. When an instrument is selected in the tree, the key fields in the **Backup tab** are filled in automatically.



The database backup procedure makes a complete and exact copy of the entire database for the purpose of data recovery should a total failure or corruption of one or more components of database occur. **The backup procedure is expected to be performed on a regular basis.**

The Backup function is a single operation, regardless of how many individual databases are involved. The software manages all aspects of this procedure, including all necessary interactions will SQL Server. You are only required to specify the target location for the backup. The software maintains a catalog of backups. You should be advised that, depending upon the size of the database, the procedure can be time consuming. During the backup process the software provides some form of progress indication.

At the completion of the process, a suitable status message is displayed, indicating either that the process completed successfully, or that some problem had occurred. The final status indicates how long the process took and how much data were backed up. (e.g. "xxx Mbytes were backed up in x hours and xx minutes.) This information, which will also be written to a Backup log file, is useful to predict how long backups will take in the future.

Field descriptions are listed below.

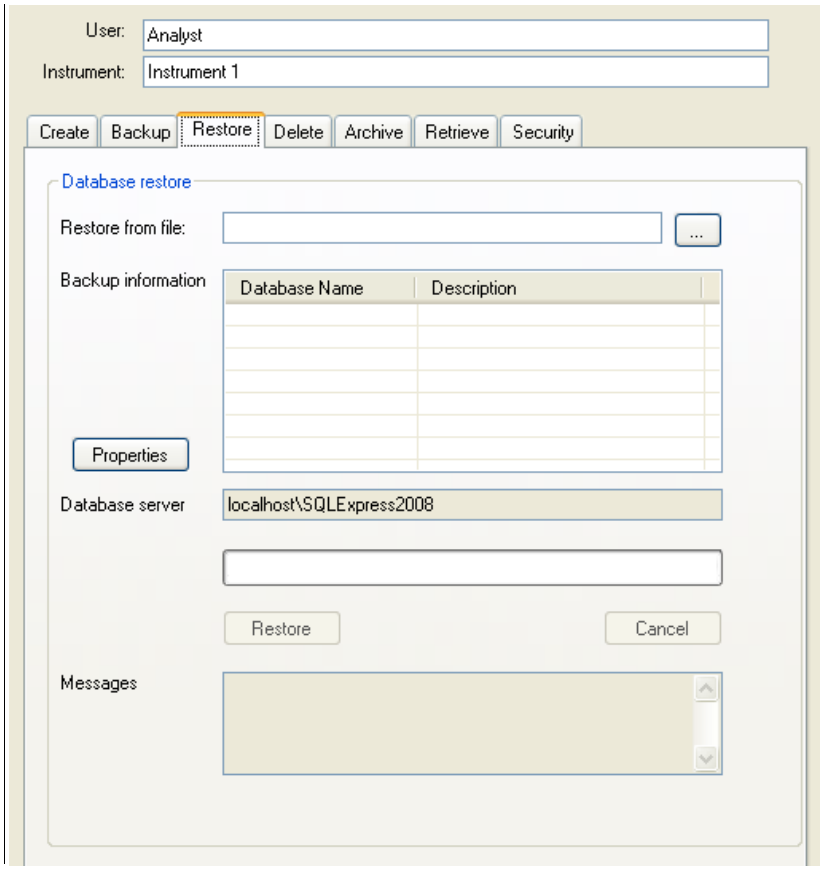
Field	**Description**
Database server	Displays the name of the database server configured for the selected instrument. When you configured this Instrument the Server name was set in **Server Name** field in the **Configuration** screen for this Instrument. Refer to Configuration.
Method/Sequence database	Displays the name of the Method/Sequence database associated with the selected instrument. This is the **Database Name** you entered for this Instrument plus the suffix MethodSequence. For example, if the Database Name is Chromera-1 you will see **Chromera-1MethodSequence. Refer to Configuration.** It is displayed when **Method/Sequence/Result** is selected as the database to backup. It is not displayed when **Archive** is selected.
Batch result database	Displays the name of the Method/Sequence database associated with the selected instrument. This is the **Database Name** you entered for this Instrument plus the suffix BatchResult. For example, if the Database Name is Chromera-1 you will see **Chromera-1BatchResult.** Refer to Configuration. It is displayed when **Method/Sequence/Result** is selected as the database to backup. It is not displayed when **Archive** is selected.
Archive database	Displays the name of the **Archive** database associated with the selected instrument. This is the **Archive Database Name** you entered for this Instrument plus the suffix Archive. For example, if the Archive Database Name is Chromera you will see **ChromeraArchive.** Refer to Configuration. It is not displayed when **Method/Sequence/Result** is selected as the database to backup. It is displayed when **Archive** is selected.
Select database to backup	Select the database you want to backup; **Method/Sequence/Result** or **Archive**.

Backup to ----------	
Description	Enter a name in the text box to identify the backup set. Any number of characters may be entered.
File name	Enter a name in the text box to define the fully qualified name of the backup file.
	Click this button to display a standard File Open dialog, enabling you to select or define the fully qualified name of the file in which the backup database set is stored.

Backup	Click this button to create the databases associated with the selected instrument, as defined in the preceding fields. When this button is clicked the software will attempt to create the backup of the indicated Chromera database(s) defined in the fields on the tab. As the operation proceeds the progress bar above the Backup button is progressively filled-in. The result of the create database operation will be indicated in the Messages box.
Cancel	Click this button to cancel a backup operation while it is in progress. This button is only enabled when a backup operation is in progress. When this button is clicked the software attempts to terminate the backup operation. As the cancel operation proceeds the progress bar above the Cancel button will be progressively filled-in. The result of the cancel operation will be indicated in the Messages box.
Messages	Displays messages resulting from the Backup command. If the Server or required database name is empty when the Backup button is clicked, an error message is displayed informing you that an instrument must be selected prior to issuing the Backup command. Any existing messages (from a previous backup) are cleared when the Backup button is clicked. As each active database is successfully backed up a message indicating this will be displayed.

Restore

This function replaces any existing active version of the database with a backup copy, because some catastrophe has rendered the original useless and unrecoverable. When an instrument is selected in the tree, some key fields in the **Restore tab** will be filled in automatically.



The Restore process is the reverse of the Backup process. It is intended to be used in the event of a corruption or failure of the active database, when no other repair mechanism can be used to reconstruct the damaged one. It is not intended to be used a routine procedure, but rather as a disaster recovery process. It must be made clear that **the restore process is destructive and that any and all information in the active database will be overwritten**.

Unlike the backup process, restore clearly requires that the database is idle when it is performed. The software will automatically determine if acquisition is occurring, and will display a message indicating that a restore cannot occur at that time. All Chromera instances, except for the database utilities, must be closed. You will be notified of these requirements before the restore can proceed.

Once it has been determined that the restore can proceed, you will be able to select, from any of the possible backup copies that may exist, the actual backup to be restored. Please be advised that, depending upon the size of the database, the procedure can be time consuming. Since the restore process is destructive, that is, it will completely overwrite the existing database, an explicit warning message will be displayed making it clear that this process will completely overwrite the existing database. You will be required to acknowledge this warning message and explicitly request to proceed before the restore is executed.

At the completion of the restore process, a status message is displayed, indicating either that the process completed successfully, or that some problem had occurred. The final status displays how long the process took and how much data were actually restored. (e.g. "xxx

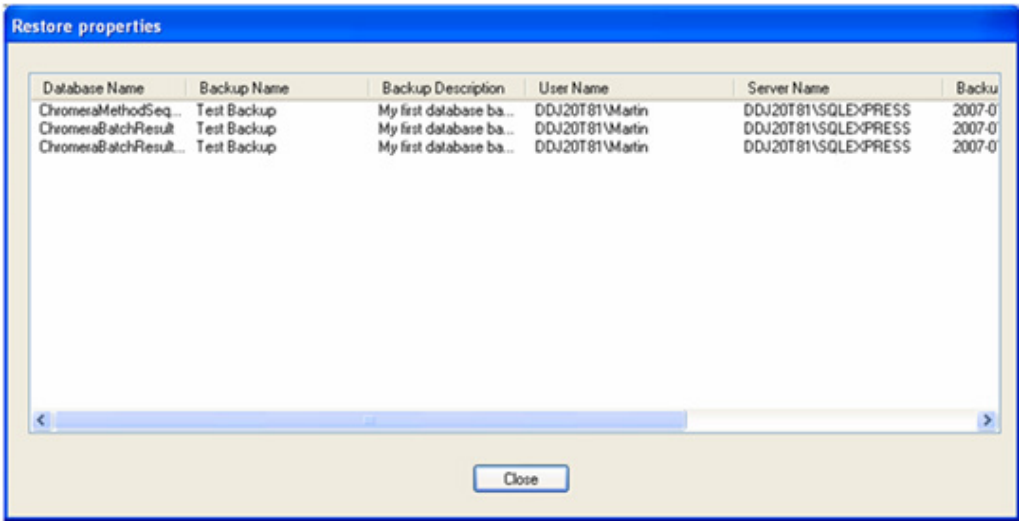
Mbytes were restored to x databases in x hours and xx minutes.) This information will also be written to a Restore log file.

Field descriptions are listed below.

Field	**Description**
Restore from file	Enter a name in the text box to define the fully qualified name of the backup file to be the source of the new active databases.
	Click this button to display a standard **File Open** dialog, enabling you to select the file from which the backup database set will be restored.
Backup information	A table that displays information about the contents of the selected backup file. For each database contained in the backup file the database (file) name and description are displayed. The table is populated when a backup file has been specified.
Properties	Click this button to display the complete properties of the selected backup file.
Database server	Displays the name of the database server configured for the selected instrument. When you configured this Instrument the Server name was set in **Server Name** field in the **Configuration** screen for this Instrument. Refer to Configuration.
Restore	Click this button to restore the databases from the specified backup file and make them the active databases for the selected instrument. As the operation proceeds the progress bar to the right of the Restore button is progressively filled-in. The result of the create database operation will be indicated in the Messages box.
Cancel	Click this button to cancel a restore operation while it is in progress. This button will only be enabled when a restore operation is in progress. As the cancel operation proceeds, the progress bar to the right of the Cancel button will be progressively filled in. The result of the cancel operation will be indicated in the Messages box.
Messages	Displays messages resulting from the Restore command. If the **Restore from file** or **Database serve**r field is empty when the Restore button is clicked, an error message will be displayed informing the user that an instrument must be selected prior to issuing the Restore command. Any existing messages (from a previous restore) will be cleared when the Restore button is clicked. As each active database is successfully restored a message indicating this is displayed.

Restore Properties Dialog

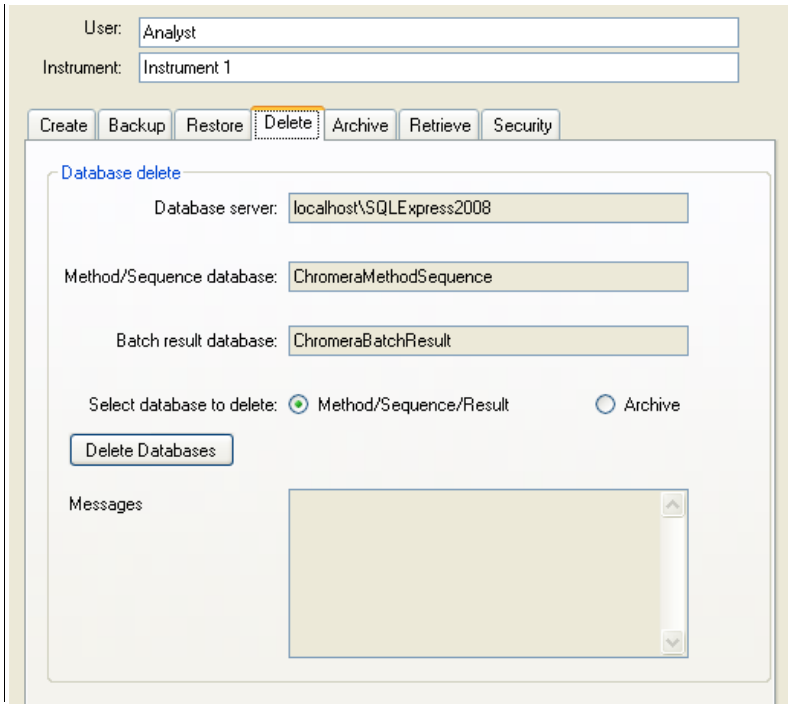
The **Restore Properties** dialog displays the complete properties of the selected backup file. It contains a simple table showing a row for each database in the Chromera set and columns displaying the following:



- The database name
- The name given to the backup by the user
- The description applied to the backup by the user
- The complete domain name of the user who created the backup (domain/computer + user ID)
- The name of the server on which the backup resides
- The date/time when the backup process was started
- The date/time when the backup process was completed
- The size of the backup database

Delete

This function deletes the existing active database set for the selected instrument because it is no longer useful and/or needed. A copy has been made of it if required. When an instrument is selected in the tree, some key fields in the **Delete tab** will be filled in automatically.



Field descriptions are listed below.

Field	**Description**
Database server	Displays the name of the database server configured for the selected instrument. When you configured this Instrument the Server name was set in **Server Name** field in the **Configuration** screen for this Instrument. Refer to Configuration.
Method/Sequence database	Displays the name of the Method/Sequence database associated with the selected instrument. This is the **Database Name** entered for this Instrument plus the suffix MethodSequence. For example, if the Database Name is Chromera-1 you will see **Chromera-1MethodSequence** When you configured this Instrument the Database Name was set in **Database Name** field in the **Configuration** screen for this Instrument. Refer to Configuration. It is displayed when **Method/Sequence/Result** is selected as the database to be created. It is not displayed when **Archive** is selected.

Batch result database	Displays the name of the Method/Sequence database associated with the selected instrument. This is the **Database Name** you entered for this Instrument plus the suffix BatchResult. For example, if the Database Name is Chromera-1 you will see **Chromera-1BatchResult.** Refer to Configuration. It is displayed when **Method/Sequence/Result** is selected as the database to be created. It is not displayed when **Archive** is selected
Archive database	Displays the name of the **Archive** database associated with the selected instrument. This is the **Archive Database Name** you entered for this Instrument plus the suffix **Archive**. For example, if the Archive Database Name is Chromera you will see **ChromeraArchive.** Refer to Configuration. It is not displayed when **Method/Sequence/Result** is selected as the database to be created. It is displayed when **Archive** is selected.
Select database to delete	Select the database you want to delete; **Method/Sequence/Result** or **Archive**.
Delete Databases	Click this button to delete the databases associated with the selected instrument, as defined in the preceding fields. When this button is clicked a confirmation dialog is displayed and then, assuming your confirm the deletion, the software attempts to delete the databases defined in the fields on the tab. As the operation proceeds the progress bar to the right of the Delete Databases button will be progressively filled-in. The result of the delete databases operation will be indicated in the Messages box.
Messages	Displays messages resulting from the Delete Databases command. If the Server or required database name empty when the Delete Databases button is clicked, an error message will be displayed informing the user that an instrument must be selected prior to issuing the Delete Databases command. Any existing messages (from a previous delete) are cleared when the Delete Databases button is clicked. If the operation is successful a message indicating this is displayed.

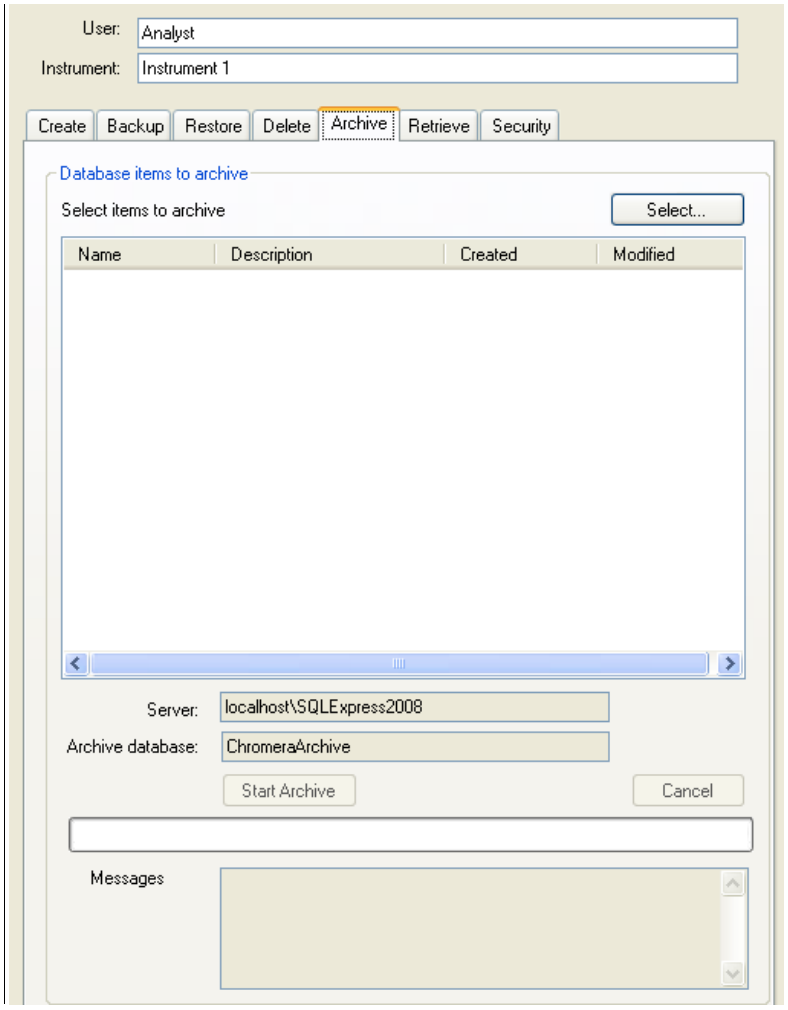
Archive

This function moves selected batches from the primary Chromera database set (as defined in the selected instrument configuration) into a protected database that is to be saved in perpetuity (or at least for some pre-determined period of time, i.e. its record retention period). The archive database can be created if it does not exist, or the batches can be added to an existing archive. When an instrument is selected in the tree, the key fields in the Archive tab will be filled in automatically.

The purpose of the Archive utility is to remove select completed, signed-off, or otherwise old data from the system, and to preserve that data in perpetuity (or at least for some pre-determined period of time, i.e. its record retention period) for future access.

Under no circumstances will this procedure allow an existing archive database to be overwritten or data within an existing archive to be overwritten. Data can only be written to a newly created database or appended to the end of an existing archive. Archives are stored as operational database systems, so that it will be possible to browse data, and potentially display it, should it prove necessary to retrieve the data for any reason.

An archive database cannot be configured as the active database; the only ways to access an archive database and through the database utility functions **Archive and Retrieve**.



Field descriptions are listed below.

Field	**Description**
Select …	Click this button to display the standard Data Selector window in 'multiple batch' selection mode, enabling you to select one or more result batches to be archived. When you have selected one or more batches and closed the Data Selector, information about the selected batches appears in the table.
<table of data selected for archive>	This table displays the Name, Description, Created, and Modified for each batch selected for archiving.
Server	Displays the name of the database server configured for the selected instrument. When you configured this Instrument the Server name was set in **Server Name** field in the **Configuration** screen for this Instrument. Refer to Configuration.
Archive database	Displays the name of the **Archive** database associated with the selected instrument. This is the **Archive Database Name** you entered for this Instrument plus the suffix Archive. For example, if the Archive Database Name is Chromera you will see **ChromeraArchive** When you configured this Instrument the Archive Database Name you entered in **Archive Database Name** field in the **Configuration** screen for this Instrument. Refer to Configuration..
Start Archive	When this button is clicked the software will first display a message: "Archiving will remove the selected items from the active database. Do you want to continue?". By clicking **Yes** the software will attempt to archive the batches defined in the fields above. Clicks **No** simply returns you to the archive screen with no action. As the operation proceeds the progress bar underneath the **Start Archive** button will be progressively filled in. The result of the archive operation is indicated in the Messages box.
Cancel	Click this button to cancel an archive operation while it is in progress.
Messages	If any required field is empty when the **Start Archive** button is clicked, an error message displays informing you that an instrument must be selected (to determine the Server) and an archive database must exist prior to issuing the command Any existing messages (from a previous operation) will be cleared when the **Start Archive** button is clicked. If the selected operation is successful a message indicating this will be displayed.

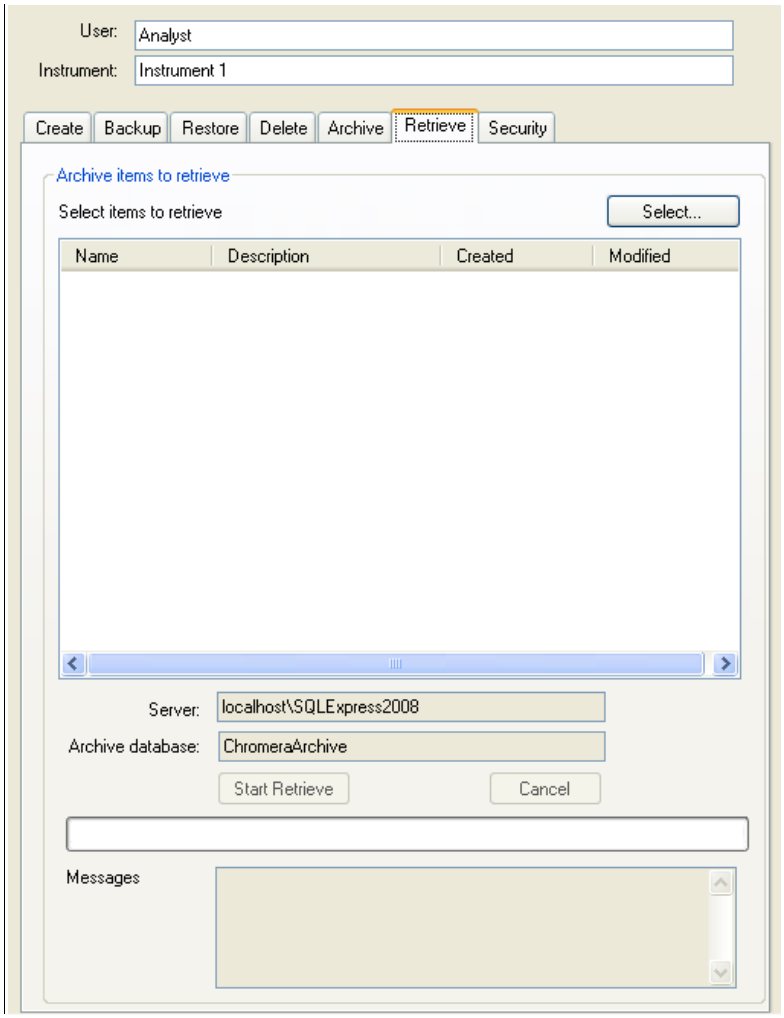
To archive a database:

1. Select the **Archive** tab in Database Management.
2. Click the **Select** button to display a table of items to archive.
3. Click on a single item in the table or Ctrl-click to select more than one item in the table.
4. Click the Start Archive button. The message Archiving will remove the selected items from the active database. Do you want to continue? appears.
5. Click **Yes** to continue or **No** not to continue.

The Messages box displays information while archiving. When complete the message displays **Copying of records from "ChromeraBatchResult" to "ChromeraArchive" successful**.

Retrieve

The **Retrieve tab** provides you with the ability to copy selected batches from a specified archive database for the purpose of browsing and/or reviewing archived data, and optionally copying that data to the active database.



Field descriptions are listed below.

Field	**Description**
Select …	Click this button to display the standard Data Selector window in multiple batch selection mode, enabling you to select one or more result batches from the archive. When you have selected one or more batches and closed the Data Selector, information about the selected batches will appear in the table
<table of data selected for archive>	A table that displays the Name, Description, Creation Data/Time and Last Modified Data/Time for each batch selected from the archive to be restored to the online database.
Server	Displays the name of the database server configured for the selected instrument. When you configured this Instrument the Server name was set in **Server Name** field in the **Configuration** screen for this Instrument. Refer to Configuration.
Archive database	Displays the name of the **Archive** database associated with the selected instrument. This is the **Archive Database Name** you entered for this Instrument plus the suffix Archive. For example, if the ArchiveDB is Chromera you will see **ChromeraArchive.** When you configured this Instrument the Archive Database Name you entered in **Archive Database Name** field in the **Configuration** screen for this Instrument. Refer to Configuration.
Start Retrieve	Click this button to start the software retrieving the specified batches from the archive and copy them to the active database set, as defined for the specified instrument. As the operation proceeds the progress bar underneath the Start Retrieve button will be progressively filled in. The result of the retrieve operation will be indicated in the Messages box.
Cancel	Click this button to cancel a retrieve operation while it is in progress.
Messages	If an error occurs during the retrieve process a message is displayed here. Any existing messages (from a previous retrieve) will be cleared when the Start Retrieve button is clicked. If the retrieve operation is successful a message indicating this will be displayed.

To retrieve a database:

1. Select the **Retrieve** tab in Database Management.
2. Click the **Select** button to display a table of items to retrieve.
3. Click on a single item in the table or Ctrl-click to select more than one item in the table.
4. Click the **Start Retrieve** button.

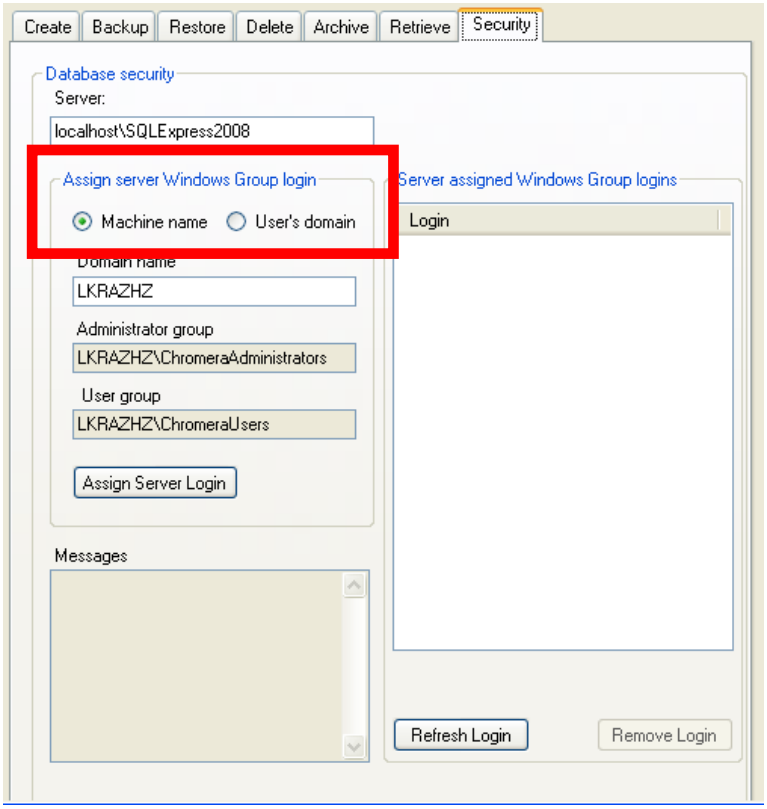
The Messages box displays information while retrieving. When complete the message displays **Copying of records from "ChromeraArchive" to "ChromeraBatchResult" successful**.

Security

NOTE: ***For Speciation analysis users only.*** *If you are using Chromera v2.x, there is no Security tab setting and no System Database.*

When Chromera Manager is started for the very first time you will need to first go to the **Security** tab in **Database Management**. The purpose of this tab is to assign the ChromeraAdministrators and ChromeraUsers groups security permissions to SQL Server.

- In the **Assign server Windows Group login** section, by default, the radio button **Machine name** is selected. This is the typical setting when SQL Server is installed on a desktop computer.



Optional Settings

If your user groups are on a domain, **User's domain** (the other option), this is used when the ChromeraAdministrators and ChromeraUsers groups have been created on a network domain. When this is selected the software will detect the user's **Domain name**.

1. If there is another domain name to be used other than what is assigned to the user the user can enter this text in the Domain name text box.

   As you type a **Domain name** the text boxes for **Administrator group** and **User group** will add the Domain name text entered.

2. Click on **Assign Sever Login** button to assign these values to SQL Server.

3. A message appears in the **Messages** text box if successful or not.

   The area under **Server assigned Windows Group logins** displays the current Windows Groups that have been assigned to SQL Server. This can be seen by clicking on the **Refresh Login** button. Clicking on the **Remove Login** button will delete any of the selected logins in this window.

Event Logs Database Management

Event Log Databases are independent from all the other databases. This database is similar in setup and management to the existing Chromera System database. It is accessed by clicking the **Events Logs Database Management** button in the Chromera Manager Navigation Bar. Unlike the System Database, the Event Log Database is created automatically the first time Chromera is started, so event logging can commence from Chromera's initial invocation.

The one major difference in this database is that since the purpose of the Event Log is to capture all of the relevant operation of Chromera, the system has been designed with the preservation of an existing Event Log in mind. For example, if you were to Delete the existing Event Log Database, you will first be prompted with the option to Archive the database, so that the existing can be preserved, and a new one created. In that way, any number of Archive databases can be created over time, which can then be opened and reviewed as desired. But unlike a Chromera Batch database, there is no need to Retrieve archived Event Log data "into" the current Event Log database, because there is no "manipulation" of event data to performed, as there would be for retrieving an archived batch, in order to reprocess it, or to extract a method from it. Therefore, it will be possible to simply open and connect to an archived Event Log Database, without affecting the currently active one.

The Event Logs Database Management function enables you to maintain your event log information. When you first install Chromera you will need to first create an event log database before you run event logging.

You should regularly back up this database to maintain your event log information in the event of a problem. The Event Log Database Management functions are:

Create Backup Restore Delete Archive Retrieve

How to Interact with the Event Viewer

There is only one, single Event Log Database for all of Chromera. It is stored in the folder –

C:\Program Files\Microsoft SQL Server\MSSQL10_50.SQLEXPRESS2008\MSSQL\DATA

- along with most other Chromera databases.

- Each time Chromera Manager is launched, a new **SessionID** is created and the events that occur during that session are recorded in the Event Log Database under that SessionID.

- Each time a Chromera Instrument instance or a Data Only instance is launched, a new **SessionID** is created and the events that occur during that session are recorded in the Event Log Database under that SessionID.

NOTE: *User and System Events cannot be configured/modified while a Chromera instance is already running. The Configure User Events option will be grayed out. Close any open Chromera instances to enable the configuration option in the Chromera Manager Actions menu.*

Preparing to Capture Events in a Log (Chromera Manager)

To create a new Event Log database, follow this procedure:

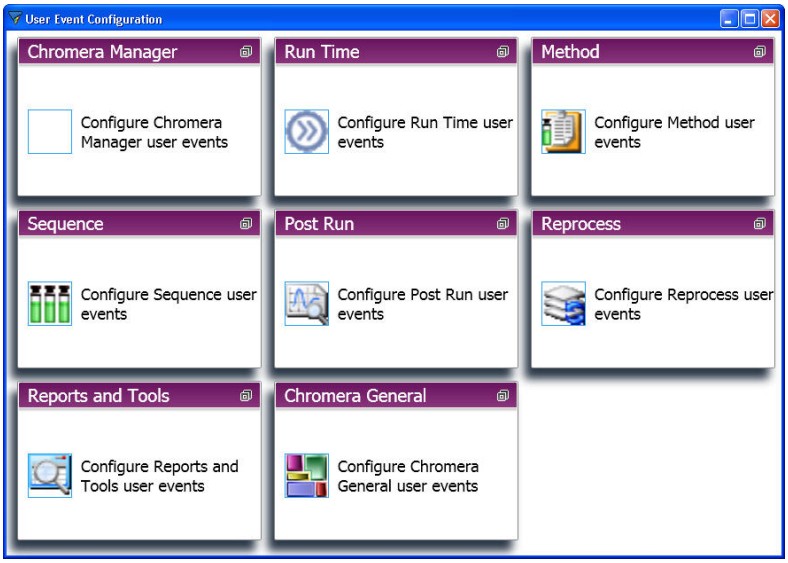
1. Delete the existing **Event Log Database** through the **Event Logs Database Management** section of the Chromera Manager.

2. Select **Yes** to the prompt to Archive the existing database if you need to preserve previous event logs. Otherwise, the existing Event Log Database and all events will be deleted.

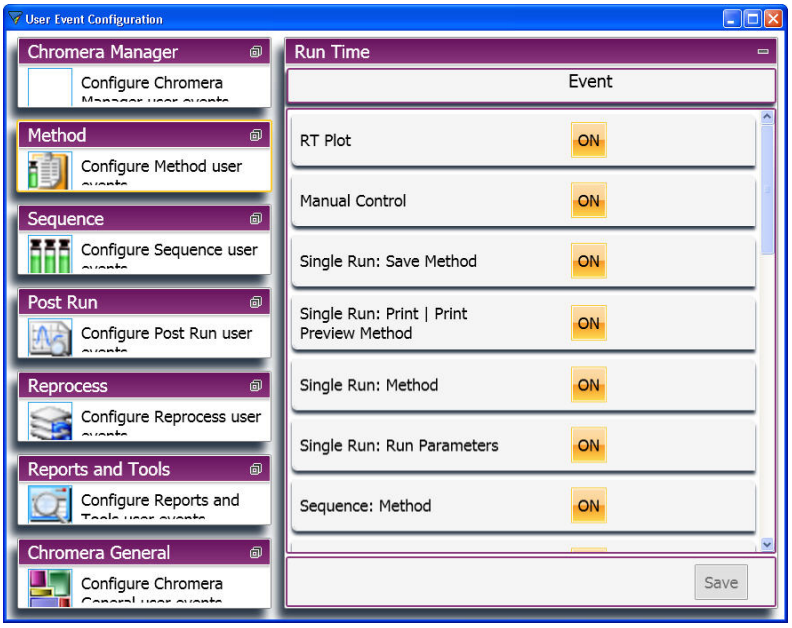
3. Create a new Event Log Database through the Event Logs Database Management section of the Chromera Manager.

To ensure that the User and System events are enabled (they should all be ON by default) follow this procedure:

1. From the Chromera Manager **Actions** menu, select **Configure User Events**.



2. With the **User Event Configuration** window open, click through each of the Chromera environment sections to verify all events for that environment are set to ON.



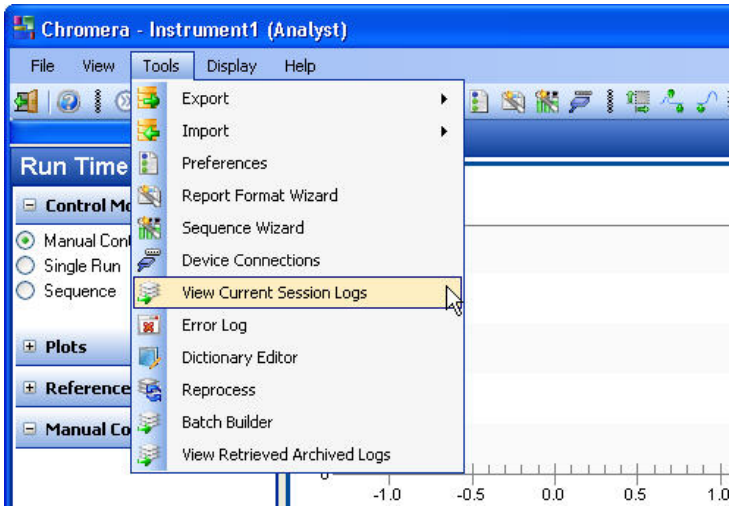
3. **Save** any changes and close **User Event Configuration**.

4. Launch Chromera.

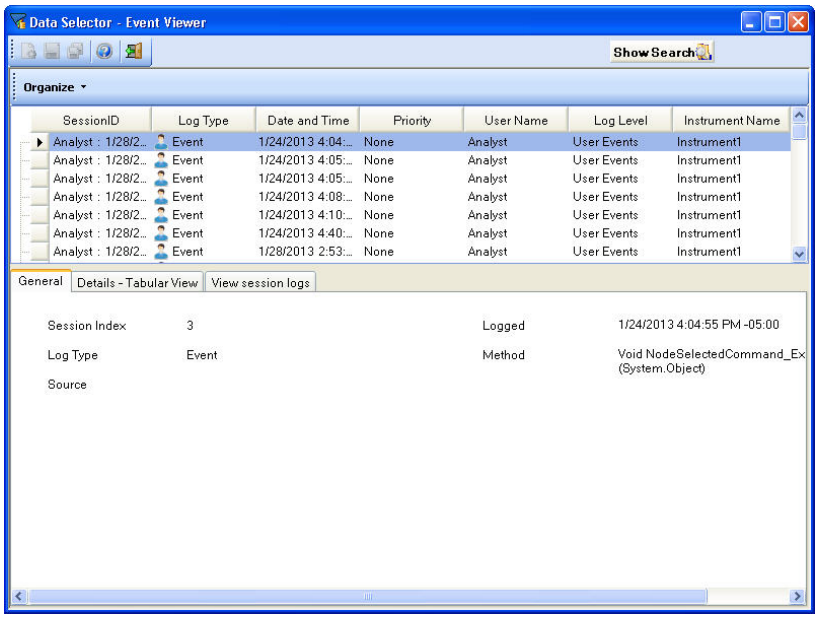
Viewing and Outputting the Event Log through the Data Selector

To view the Event Log through the Data Selector, follow this procedure:

1. Select **View Current Session Logs** from the Chromera **Tools** menu. (Or from the **Actions** menu in **Chromera Manager**.)

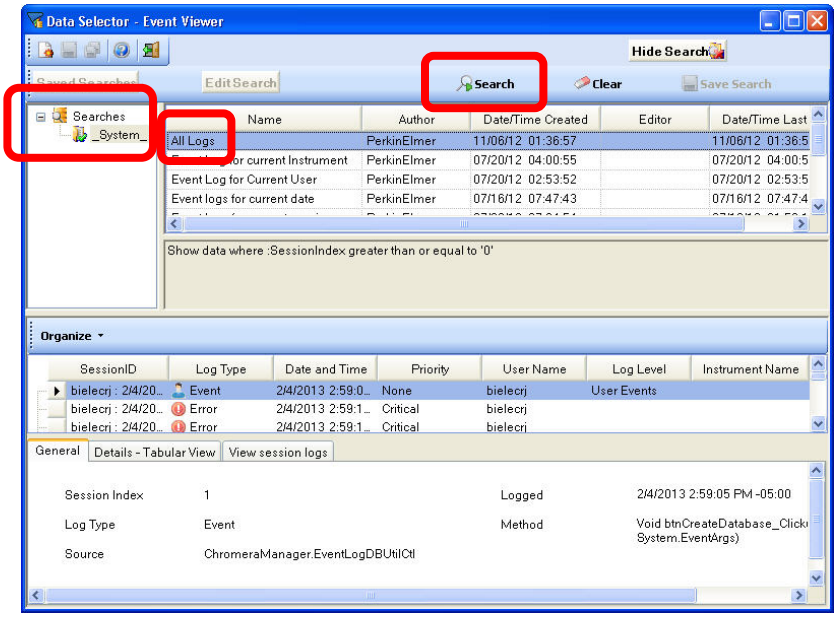


   The **Data Selector - Event Viewer** screen appears.



   The default is to display only the events from the current **SessionID**. Therefore, by default, only the events that have occurred since the current instance of Chromera was launched will be visible.

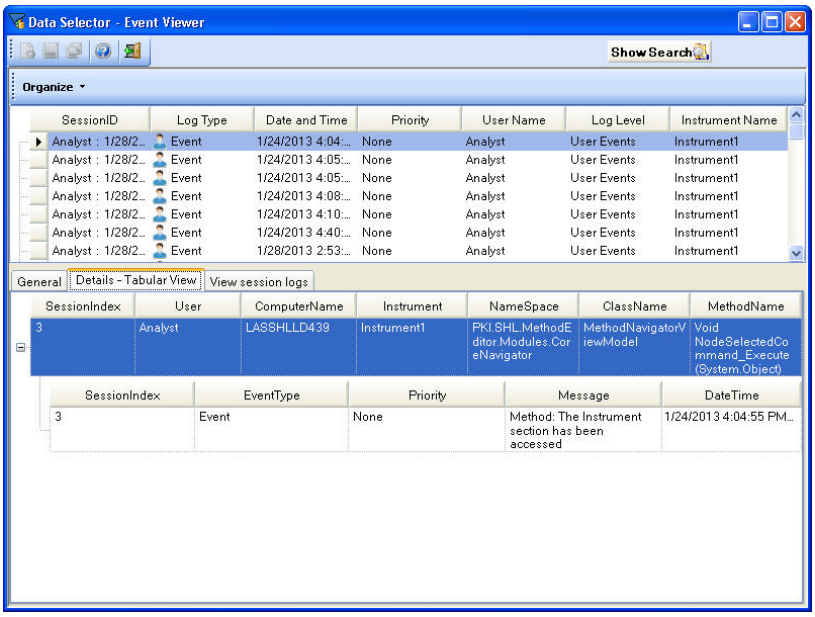
2. Click the **Show Search** button and select **_System_** from the **Searches** directory to choose the desired collection of events to display, and then click the **Search** button to return all of the items for that selection.



3. Select **All Logs**; then clicking the **Search** button displays all of the events for all of the **SessionIDs** in the database.

   The other searches return the events that their **Names** imply.

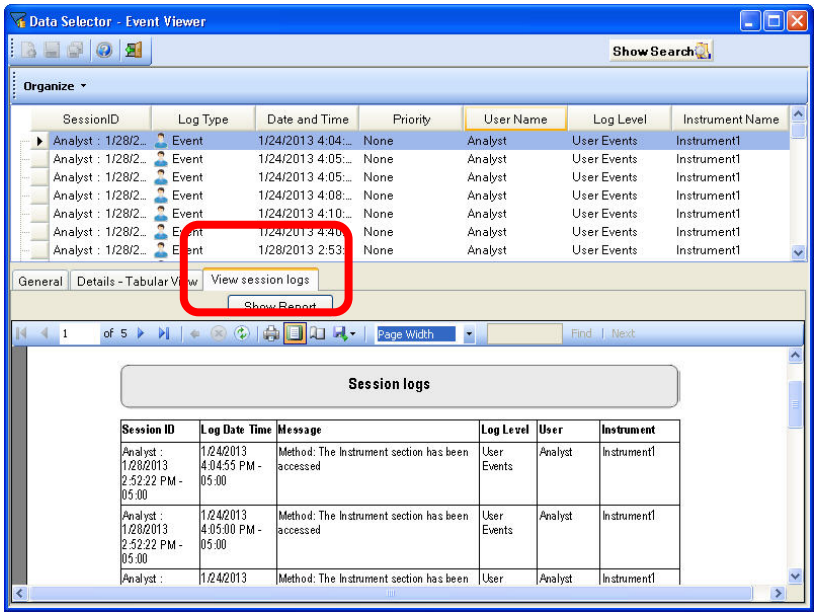
4. Select the **Details - Tabular View** tab to display the contents of individual events while scrolling through the list.



The **Message** field contains the relevant information about the selected event. Move through the list using the Up and Down arrow keys or scroll bar

To output the Event log, follow this procedure:

1. Select the **View Session Logs** tab, and then click the **Show Report** button to print the complete list of events from the selected search.



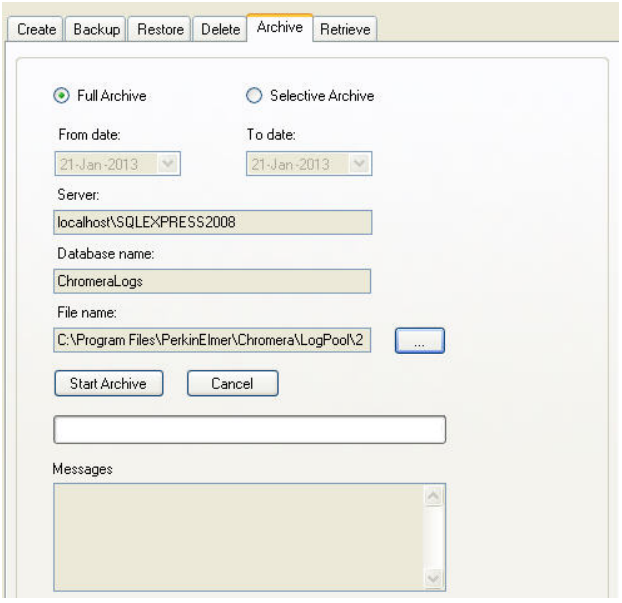
2. Click the **Export** button on the Toolbar, and select **Excel**, **PDF**, or **Word** as the file type to export.

   Selecting an Excel file type allows the greatest flexibility for viewing, sorting, and filtering the exported data.

Using Event Log Archives (Chromera Manager)

To create an archive of the Event Log for future viewing, follow this procedure:

1. From the Chromera Manager, select the **Archive** tab from the **Event Logs Database Management** section.



2. Choose the option for **Full Archive** to copy the complete database, with all events, or just a **Selective Archive**, to copy only the events from a specified date range.

NOTE: *Both of these options will remove the associated events from the active Event Log database.*

3. Select a name and a location for the .archive file. The default is to create a file name from the date/timestamp of the archive range, and to save into the folder C:\Program Files\PerkinElmer\Chromera\LogPool.

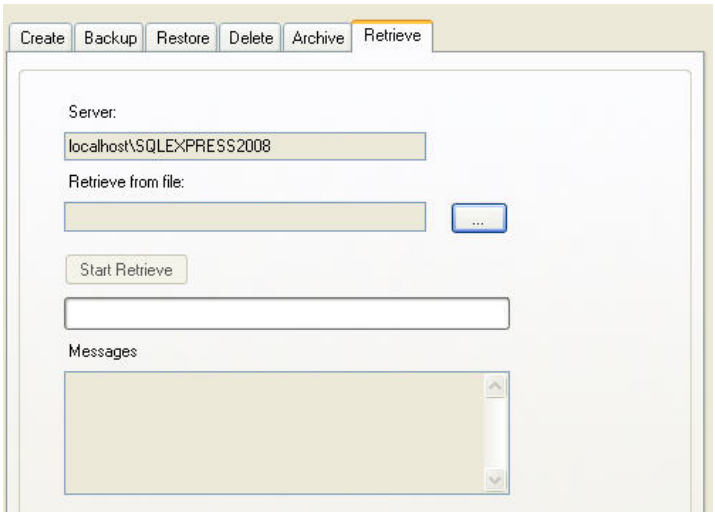
4. Click the **Save** button, and then **Start Archive**.

   This will copy the selected records to the .archive file, and then delete them from the current Event Log Database. The .archive file then can be copied to another computer for subsequent review.

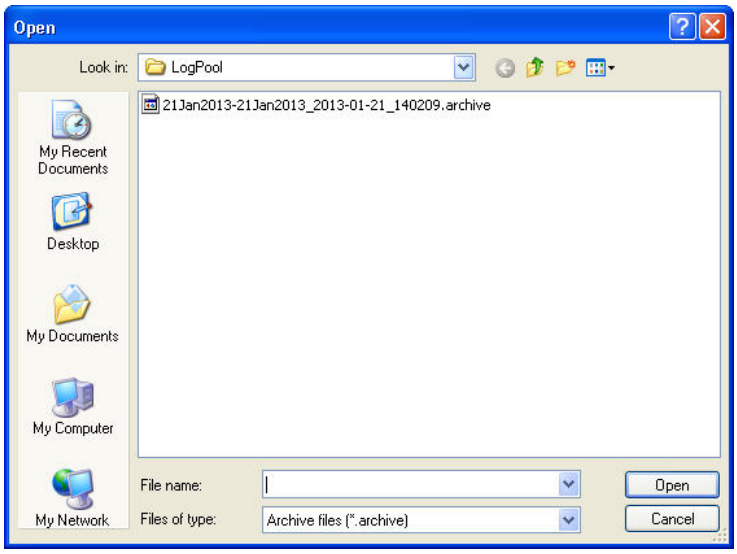
To view an Archive Event Log file, follow this procedure:

1. Copy the **xxx.archive** file to the **LogPool** folder (the default location) if it is not already there.

2. From the Chromera Manager, select the **Retrieve** tab from the **Event Logs Database Management** section.

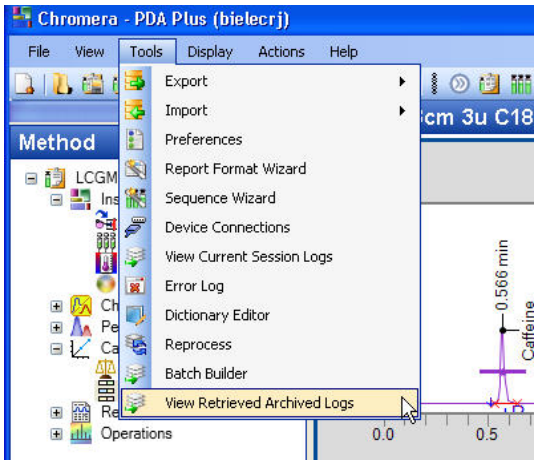


3. Select the appropriate .archive file from the **LogPool** folder and click the **Open** button.

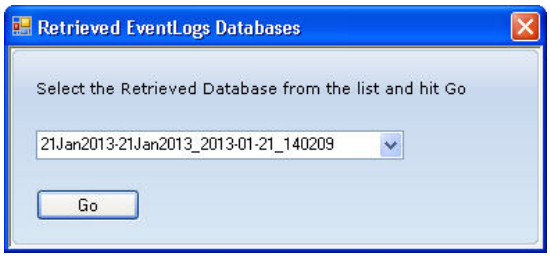


This will convert the .archive file back into a database formatted file. It WILL NOT copy the archived records into the active Event Log Database.

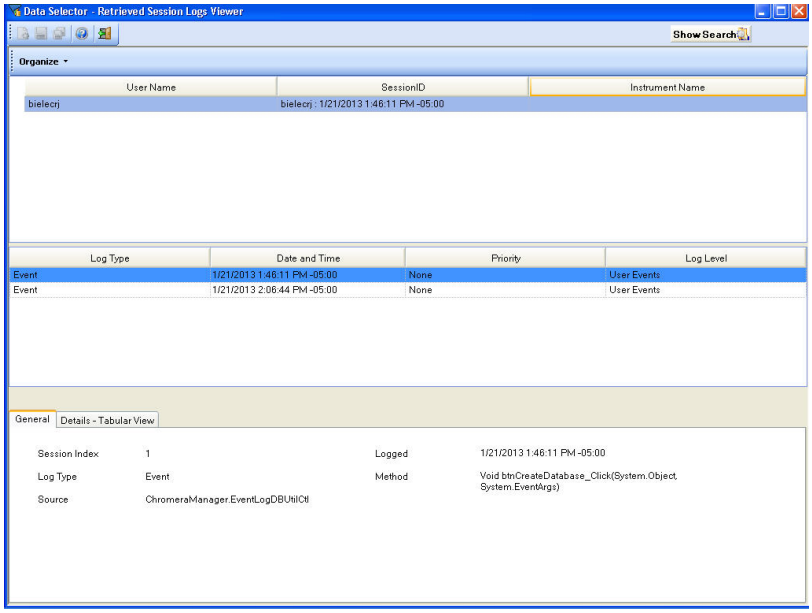
4. Launch Chromera and select **View Retrieved Archive Logs** from the **Tools** menu.



5. Select the desired database from the list and click the **Go** button.



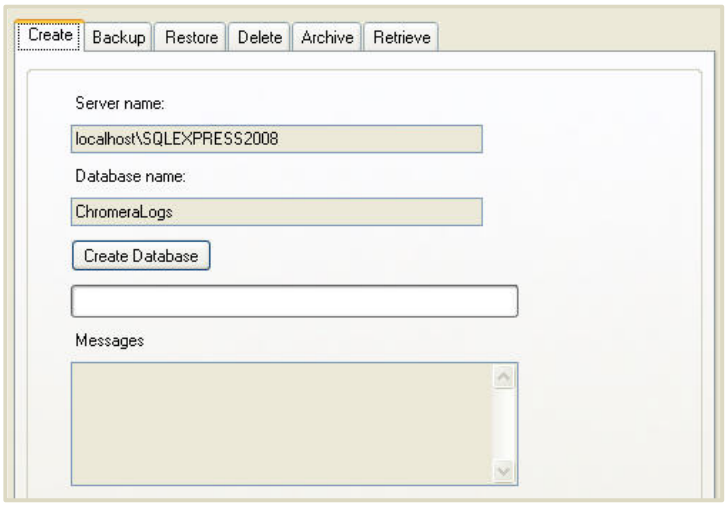
This allows browsing of the events from the Retrieved database in exactly the same manner as browsing the active Event Log Database.



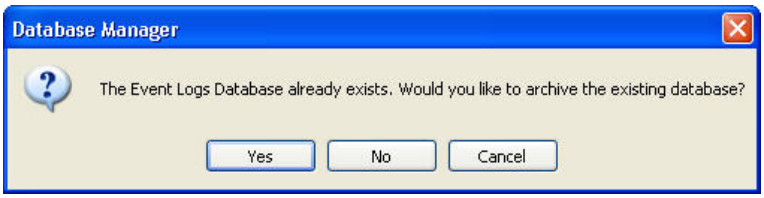
How to Create an Event Logs Database

NOTE: *During the very first installation of Chromera, if no Event Log Database had previously existed, the databases will be created automatically during installation. There will be no user intervention required.*

1. Click on the **Event Logs Database Management** button to display the available database settings with the Create tab information displayed.



2. Click the **Create Database** button to create a new empty database.
   If the Event Logs database already exists, the following message displays.



   - If **Cancel** is selected, the Create function is terminated, and nothing further occurs.
   - If **No** is selected, the existing Event Log Database is deleted, and a new, empty database is created in its place.
   - If **Yes** is selected, the **Save As** dialog appears for you to create a filename to store the Archive of the current database in the **LogPool** directory.

     A default name for the database is provided in the form of a timestamp indicating the beginning date for the event log, to the current date and time. The file type for the archive file is ".archive", and it is stored in the folder **C:\Program Files\ PerkinElmer\Chromera\LogPool**.

3. Observe the Message box to see the message, **Event Logs Database created successfully**.

The **Create** tab field descriptions are listed below.

Field	Description
Server name	Displays the name of the database server configured for the selected instrument. When you configured this Instrument the Server name was set in **Server name** field in the **Configuration** screen for this Instrument. Refer to Configuration.
Database name	Displays the name of the Database that will be created.
Create Database	Click this button to create the database. As the operation proceeds the progress bar below the **Create Database** button fills in. The result of the create database operation is indicated in the **Messages** box.
Messages	A box that displays messages resulting from the Create Database command. If the Server or required database name field is empty when the Create Database button is clicked, an error message will be displayed informing the user that an instrument must be selected prior to issuing the Create Database command. If the operation is successful a message indicating this will be displayed.

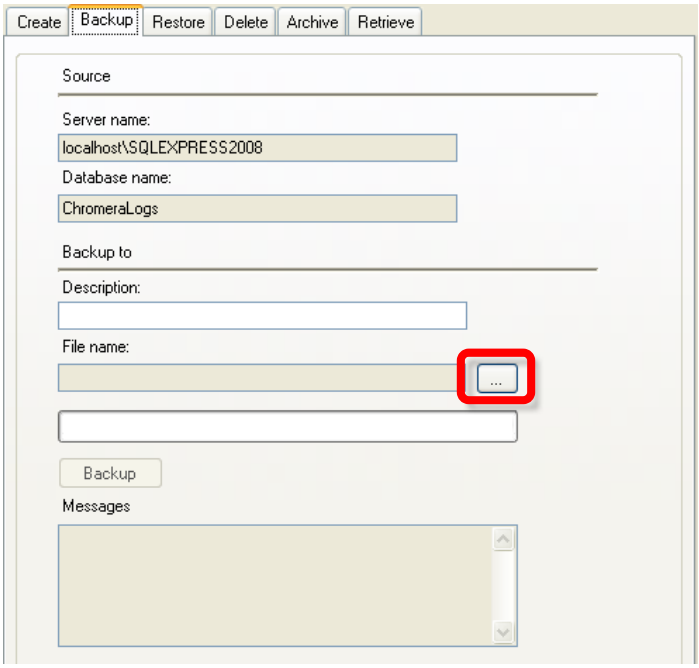
How to Backup an Event Logs Database

Backup creates a complete copy of the Event Log Database for safety and disaster recovery. The Restore command is used to load data from a Backup file into an active Chromera database. A new, empty database must be created first, before the Restore can be performed.

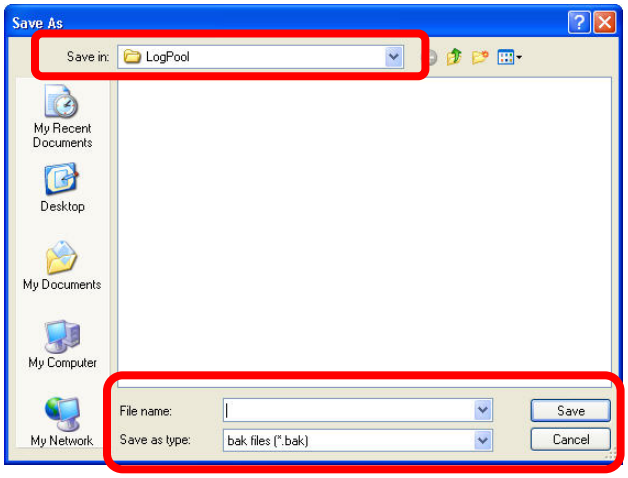
1. Click on the **Event Logs Database Management** button to display the available database settings.

2. Click on the **Backup** tab.

3. Click the **File Name** ... search button shown below.

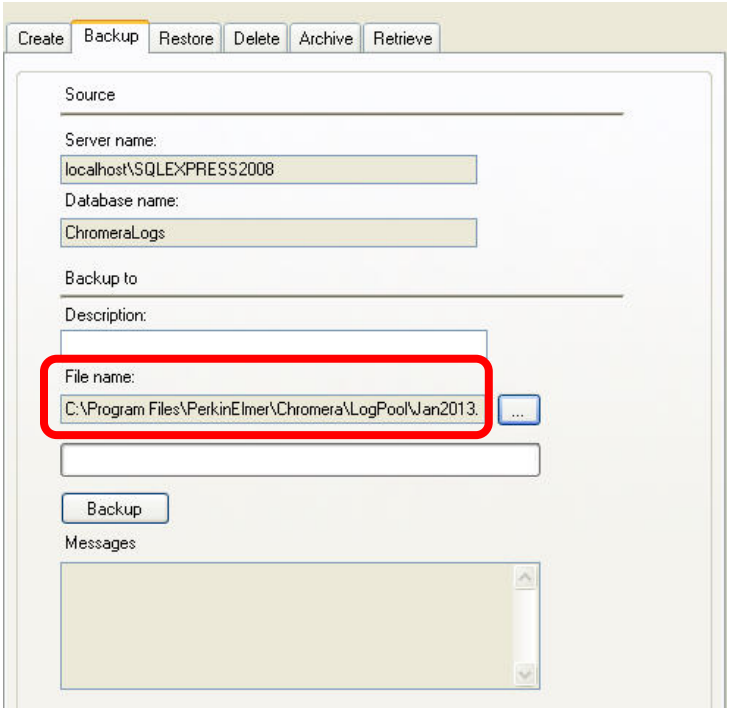


This opens the **Save As** dialog for you to create/type a **File name** for the backup file.



The file will have the extension "**.bak**" and will be stored in the folder "**C:\Program Files\PerkinElmer\Chromera\LogPool**".

4. Click the **Save** button.
   This name is displayed under **File name** as shown below.



5. Click the **Backup** button.
   Observe the Message box to see the message, **Event Log Database Backup successfully completed**.
   The **Backup** tab field descriptions are listed below.

Field	Description
Source	
Server name	Displays the name of the database server configured for the selected instrument. When you configured this Instrument the Server name was set in the **Server name** field of the **Configuration** screen for this Instrument. Refer to Configuration.
Database name	Displays the name of the database where the logs are saved.
Backup to	
Description	Type a brief description of your file.
File name	Displays the file name you created for your backup file with the path where it is stored.
...	Click this search button to display the Save As dialog where you can type a file name for your backup file.
Backup	Click this button to start the backup and display the progress bar below it.
Messages	A box that displays messages resulting from the Backup command. If the operation is successful a message indicating this will be displayed.

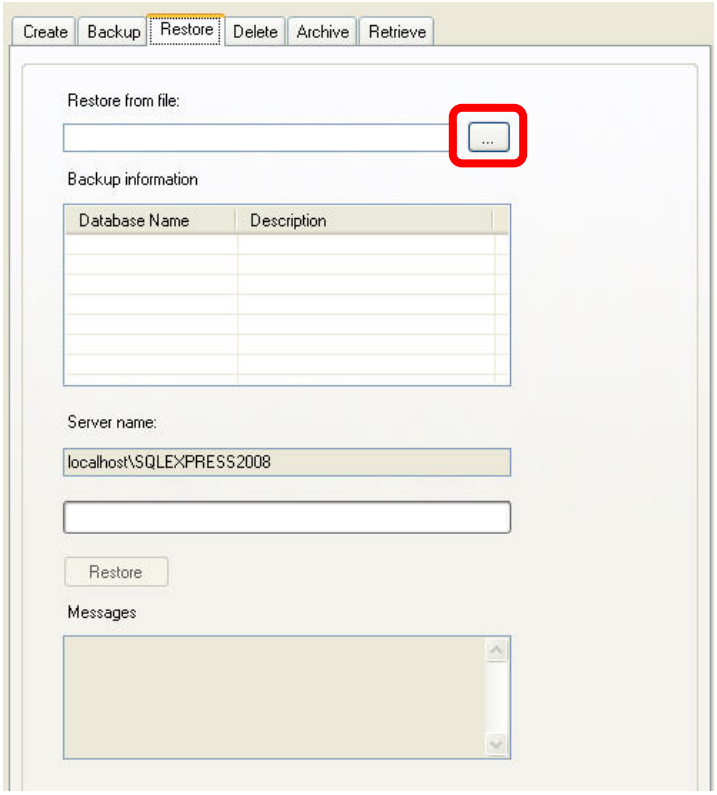
How to Restore an Event Logs Database

The Restore command is used to load data from a Backup file into an active Chromera database. A new, empty database must be created first, before the Restore can be performed. This is intended for recovery after an active database failure. This action replaces/overwrites an existing database.

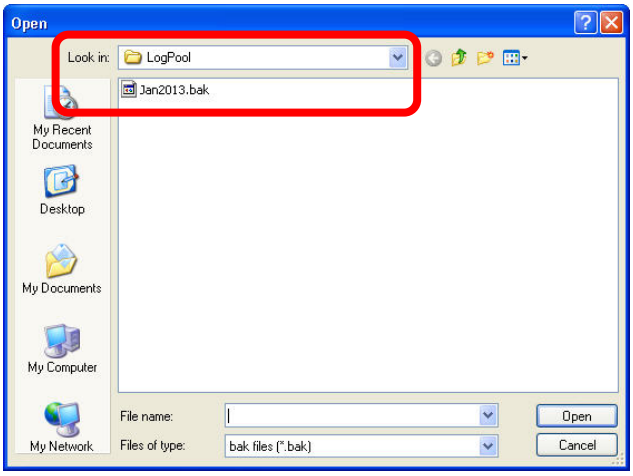
1. Click on the **Event Logs Database Management** button to display the available database settings.

2. Click the **Restore** tab.

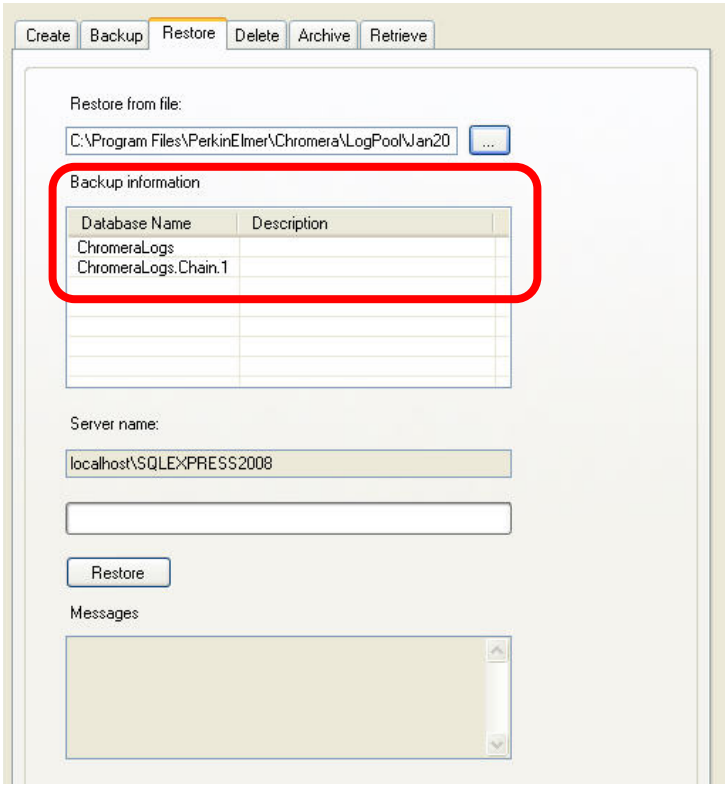
3. Click the **Restore from file** ... search button shown below.



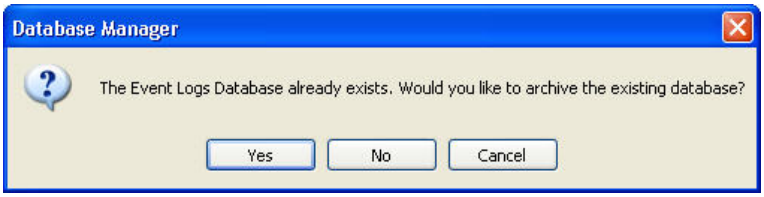
This opens the **Open** dialog for you to search for the back up **File name** you wish to open.



4. Click on the file you want to open. Then click the **Open** button.
   The **Backup information** Database Names are displayed in the table.



5. Select a Database Name and click the **Restore** button.
   If the Event Logs database already exists, the following message displays.



   - If **Cancel** is selected, the Create function is terminated, and nothing further occurs.
   - If **No** is selected, the existing Event Log Database is deleted, and a new, empty database is created in its place.
   - If **Yes** is selected, the **Save As** dialog appears for you to create a filename to store the Archive of the current database in the LogPool directory.

     A default name for the database is provided in the form of a timestamp indicating the beginning date for the event log, to the current date and time. The file type for the archive file is ".archive", and it is stored in the folder **C:\Program Files\PerkinElmer\Chromera\LogPool**.

6. Observe the Message box to see the message, Event Logs Database Restored successfully.

The **Restore** field descriptions are listed below.

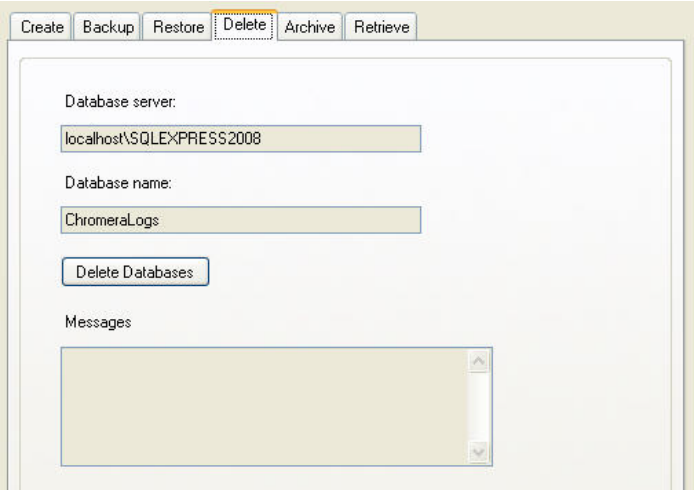
Field	Description
Restore from file	This field displays the path and name of the file you typed or selected when you clicked the search button.
	Click this search button to display the Save As dialog where you can type a file name for your backup file.
Backup information	This table displays the **Database name** and **Description** (that you entered in the Backup tab).
Database server	Displays the name of the database server configured for the selected instrument. When you configured this Instrument the Server name was set in **Server name** field in the **Configuration** screen for this Instrument. Refer to Configuration.
Restore	Click this button to start to restore the database. As the operation proceeds the progress bar fills in. The result of the create database operation is indicated in the **Messages** box.
Messages	A box that displays messages resulting from the Restore database command. Any existing messages (from a previous create) will be cleared when the Restore button is clicked. If the operation is successful a message similar to the following displays. **Events Logs Database Restored successfully.**

How to Delete an Event Logs Database

Removes the collection of Event Log Database files from the folder **C:\Program Files\Microsoft SQL Server\MSSQL10_50.SQLEXPRESS2008\MSSQL\DATA**.

1. Click on the **Event Logs Database Management** button to display the available database settings.

2. Click the **Delete** tab.



3. Click the **Delete Database** button.
   This removes a database completely from the hard drive and SQL Express. **You cannot recover deleted data.**

4. Observe the Message box to see the message, Events Logs Database successfully Deleted.
   The **Delete** tab field descriptions are listed below.

Field	Description
Database server	Displays the name of the database server configured for the selected instrument. When you configured this Instrument the Server name was set in **Server name** field in the **Configuration** screen for this Instrument. Refer to Configuration.
Database name	Displays the name of the Database that will be deleted.
Delete Databases	Click this button to delete the database. As the operation proceeds the progress bar below the **Delete Database** button fills in. The result of the create database operation is indicated in the **Messages** box.
Messages	A box that displays messages resulting from the Delete Database command. If the Server or required database name field is empty when the Delete Database button is clicked, an error message will be displayed informing the user that an instrument must be selected prior to issuing the Delete Database command. If the operation is successful a message indicating this will be displayed.

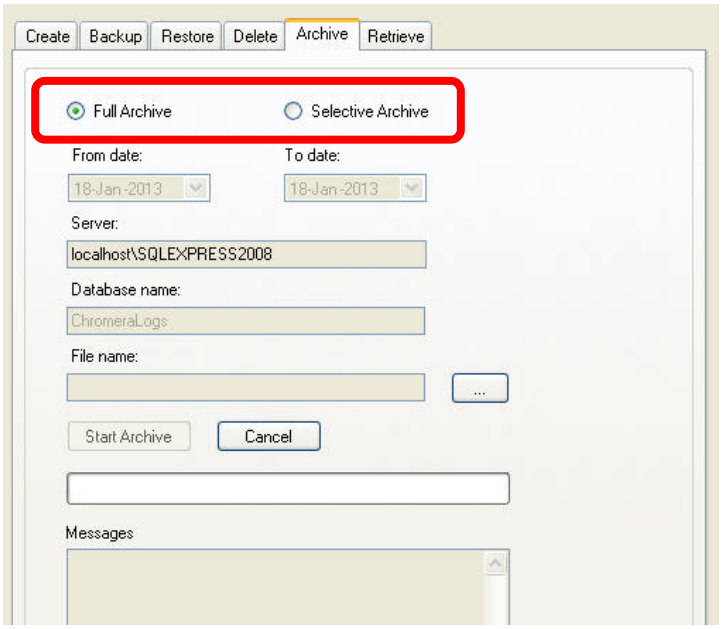
How to Archive an Event Logs Database

You have a choice to archive the Full Archive or a Selective Archive. Archiving removes selected data from the active Event Log Database and saves it in external file that can be Retrieved and reviewed in the future.

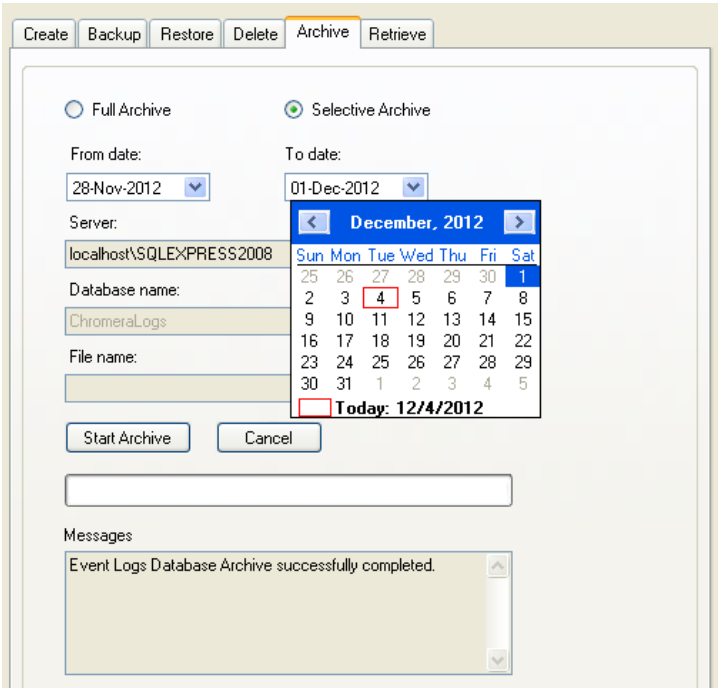
1. Click on the **Event Logs Database Management** button to display the available database settings.

2. Click the **Archive** tab.

3. Select **Full Archive** or **Selective Archive**.
   The **Full Archive**, as the name implies, archives the entire Events Log database.

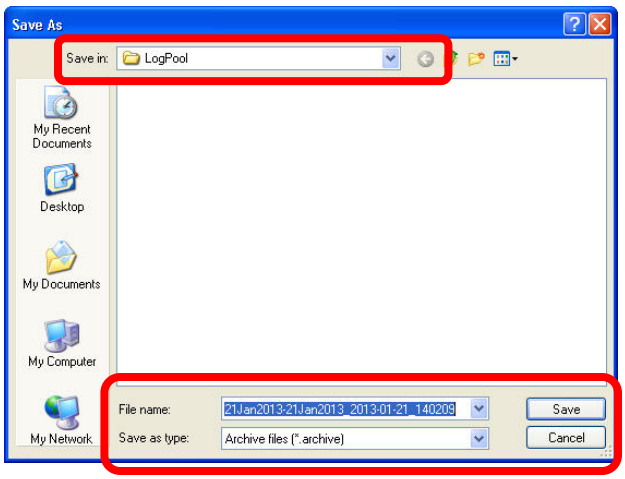


The **Selective Archive** enables you to select a date range (**From date** and **To date**) to archive.



4. Click the **File Name** search button shown in the above screens.

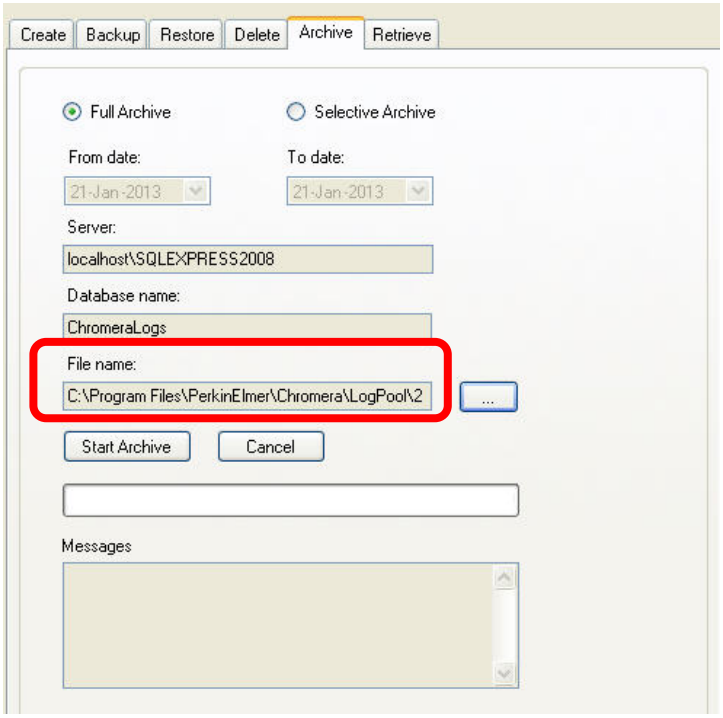
   This opens the **Save As** dialog for you to create/type a **File name** for the a file.



   The file will have the extension "**.archive**" and will be stored in the folder **C:\Program Files\PerkinElmer\Chromera\LogPool**.

5. Click the **Save** button.

   This name is displayed under **File name** as shown below.



6. Click the **Start Archive** button.

   The selected Event Log entries will be removed from the active Chromera Event Log and saved to the identified Archive file.

   Observe the Message box to see the message, **Archiving of Event Logs Database Database successfully completed**.

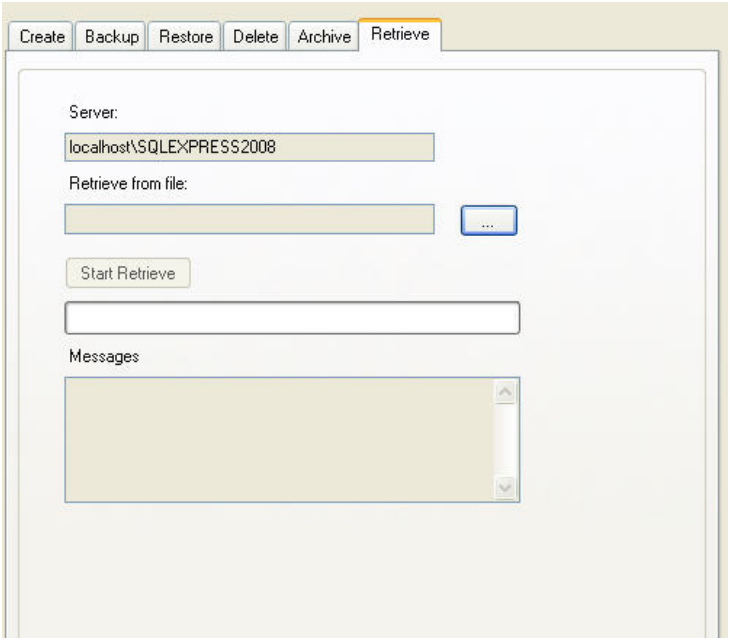
The **Archive** tab field descriptions are listed below.

Field	Description
Full Archive	As the name implies, archives the entire Events Log database.
Selective Archive	Enables you to select a date range (**From date** and T**o date**) to archive.
Server	Displays the name of the database server configured for the selected instrument. When you configured this Instrument the Server name was set in the **Server name** field of the **Configuration** screen for this Instrument. Refer to Configuration.
Database name	Displays the name of the database where the logs are saved.
File name	Displays the file name you created for your archive file with the path where it is stored.
	Click this search button to display the Save As dialog where you can type a file name for your archive file.
Start Archive	Click this button to start the archive process and display the progress bar below it.
Messages	A box that displays messages resulting from the Archive command. If the operation is successful a message indicating this will be displayed.

How to Retrieve an Event Logs Database

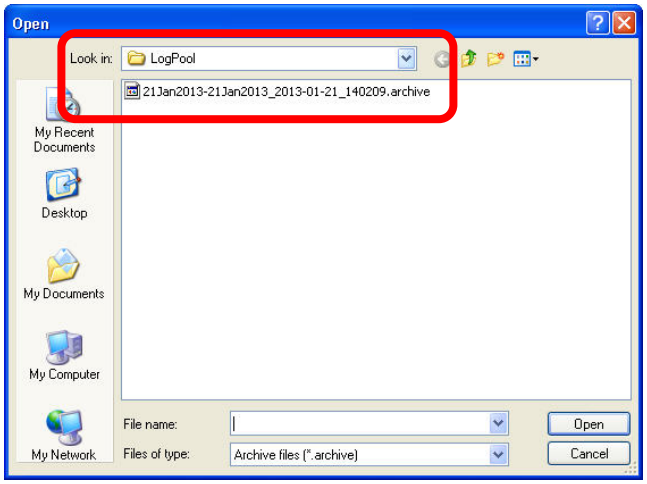
1. Click on the **Event Logs Database Management** button to display the available database settings.

2. Click on the **Retrieve** tab.

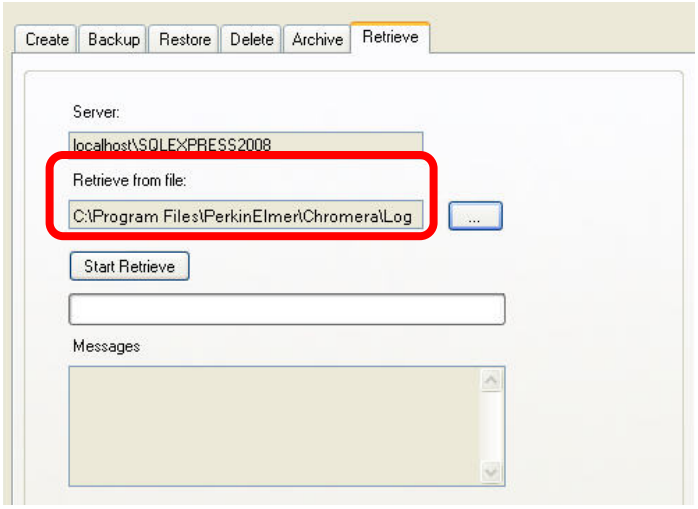


3. Click the **Retrieve from file** search button.

   This opens the **Open** dialog for you to search for the archieve **File name** to open.



4. Click on the file you want to open. Then click the **Open** button.
   The archive file name displays in the Retrieve from file field.



5. Click the **Start Retrieve** button.

   Observe the Message box to see the message, **Events Logs Database Retrieve successfully completed**.

   The retrieved records will not be copied back into the active Event Log database. They will remain in the retrieved Archive database. Once the retrieval has completed successfully, return to Chromera to actually open and review the archived Events.

   The **Retrieve** tab field descriptions are listed below.

Field	Description
Server	Displays the name of the database server configured for the selected instrument. When you configured this Instrument the Server name was set in the **Server name** field of the **Configuration** screen for this Instrument. Refer to Configuration.
Retrieve from file	This field displays the path and name of the file you typed or selected when you clicked the search button.
...	Click this search button to display the Open dialog where you can select a file name from the list of files.
Start Retrieve	Click this button to start to retrieve the database. As the operation proceeds the progress bar fills in. The result of the create database operation is indicated in the **Messages** box.
Messages	A box that displays messages resulting from the Restore database command. Any existing messages (from a previous create) will be cleared when the Restore button is clicked. If the operation is successful a message similar to the following displays. **Events Logs Database Retrieve successfully completed.**

Launching Chromera

The main Chromera application can be launched from any view (Instruments, Configuration, or Database Management) in Chromera Manager. To launch an online instance of Chromera select the required instrument and then:

- Choose **Launch** in the Actions menu
- Click the **Launch** button in the toolbar
- Choose **Launch** in the popup menu displayed by right-clicking on the instrument node in the tree
- Double-click on the instrument node in the tree

To launch an offline (data only) instance of Chromera select the required instrument and then:

- Choose **Launch – Data Only** in the Actions menu
- Click **Launch – Data Only** button in the toolbar
- Choose **Launch - Data Only** in the popup menu displayed by right-clicking on the instrument node in the tree

NOTE: *When the main Chromera application is launched, Chromera Manager will minimize to the system tray (displaying the core Chromera icon). It can be restored by double-clicking on the icon or by selecting the Restore command from the popup menu displayed by right-clicking on the icon.*

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