TIBCO OpenSpirit®

# TIBCO OpenSpirit® Runtime

## User's Guide

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TIBCO

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# OpenSpirit Concepts

OpenSpirit is a framework that provides multi-vendor application and data interoperability that is targeted at the upstream oil and gas business. OpenSpirit removes technology barriers that, prior to OpenSpirit, prevented applications from working directly with data residing in competing application data stores or in incompatible computing platforms.

OpenSpirit also provides an event bus that enables applications from different software vendors to cooperate in work flows as if they were produced by a common software vendor.

The following sections of this guide describe concepts that are important to understand before planning the installation of your OpenSpirit environment.

## OpenSpirit Runtime

The OpenSpirit runtime is the software infrastructure and services needed to connect applications to data and to other applications. The OpenSpirit runtime is typically installed on all computers in your enterprise that are used to run applications that connect to the OpenSpirit runtime and on computers hosting data stores that feed the applications with data. Typical network configurations of the OpenSpirit runtime are illustrated in the next section of this installation guide titled OpenSpirit Runtime Configurations. Additional OpenSpirit concepts are introduced in the configuration section.

## Application Adapter

A software component that connects a software application to the OpenSpirit runtime is called an *application adapter*. Applications that have an OpenSpirit application adapter are called an *OpenSpirit enabled application*.

Application adapters are typically created by the same company that creates the software application. However, some applications provide mechanisms to enable customers and other companies to plug additional capabilities into their application.

The ***TIBCO OpenSpirit© Adapter for Petrel*** and the ***TIBCO OpenSpirit© ArcGIS Extension*** are examples of application adapters that were not developed by the same company that created the application. They were developed by TIBCO Software, Inc.

Application adapters can connect to the OpenSpirit runtime in a variety of ways. They can connect to read data and/or write data that resides in a data store that has OpenSpirit *data connector* support. Application adapters can also interact with other OpenSpirit enabled applications using various application interaction events such as data selection, cursor tracking, and GIS spatial feature events.

Application adapters typically check out a Universal Application Adapter (UAA) license when they connect to the OpenSpirit runtime. UAA licenses are checked out per-concurrent user for a given application type. Application adapters may also require a license from the

software company that developed and sells the application adapter. Check with your application adapter supplier regarding the license requirements of a particular adapter.

Information about application adapters that are available from OpenSpirit business partners can be found in the OpenSpirit section of the TIBCO web site.

## Data Connector

A software component that publishes a *data store* to the OpenSpirit runtime is called a *data connector*. Publishing a data store to the OpenSpirit runtime makes its data available to OpenSpirit enabled applications. Applications can query, create, modify, and delete data residing in the data store.

Currently all OpenSpirit data connectors are developed by TIBCO. OpenSpirit data connectors are licensed by data store type on a per-concurrent user basis. See the Data Source Configuration Tool section of the OpenSpirit Desktop help document for information about the data stores that are supported by OpenSpirit data connectors.

## OpenSpirit Tools

OpenSpirit tools are software components included in the OpenSpirit runtime. There are also some optional OpenSpirit tools that are purchased separately and installed into the OpenSpirit runtime. The OpenSpirit tools are accessed from the OpenSpirit Desktop and are organized into three categories; administrator tools, data manager tools, and tools used in a variety of work flows that have been grouped into a category called data browsing tools. Refer to the OpenSpirit Desktop help guide for a list of the available OpenSpirit tools.

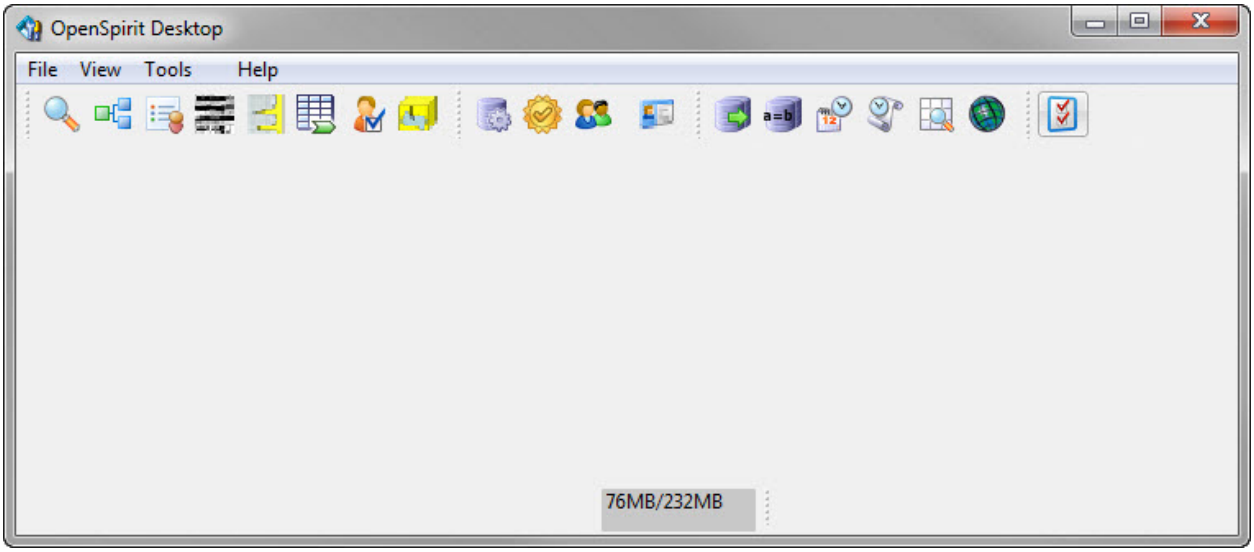
The next section of this guide introduces additional OpenSpirit concepts that are fundamental to how OpenSpirit software is installed and configured.

# OpenSpirit Desktop Concepts

## Topics

# OpenSpirit Desktop

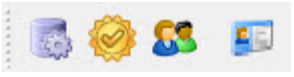
The OpenSpirit Desktop provides a variety of tools used to perform data browsing, data management, and administration of the OpenSpirit runtime environment. The tools are grouped into one of three task oriented tool bars.



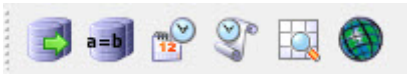

## Data Browser Tool Bar

The Data Browser tool bar  contains tools used to browse data. This includes tools used to browse and select data, graphically display data, create and manage sessions, monitor and manage OpenSpirit data server processes, and manage data access credentials.

## Administrator Tool Bar

The Administrator tool bar  contains tools used to administer the OpenSpirit runtime environment. This includes tools used to manage OpenSpirit users, create and modify data source configurations, license management, and OpenSpirit runtime environment configuration. Access to administrator tools may be restricted to designated OpenSpirit administrators according to user rights policies.

## Data Manager Tool Bar

The Data Manager tool bar  contains tools used to perform data management functions. This includes tools used to customize Data Selector model

views, tools used to build and run data copy jobs, and tools used to build and run spatial data scan jobs. Access to data manager tools may be restricted to designated data manager users according to user rights policies set by the OpenSpirit runtime administrator.

The Copy Manager tools and Scan Utility tool are optional components that are installed and licensed separately. They will not be present in the tool bar if the optional product has not been installed into your OpenSpirit runtime.

Each of the OpenSpirit tools are described in their own section of this help guide.

# Launching the OpenSpirit Desktop

The following information describes the standard ways to start the OpenSpirit Desktop. Your company may provide custom menus or scripts for you to use to start the OpenSpirit desktop. Please consult with your local OpenSpirit system administrator about using any customized start procedures.

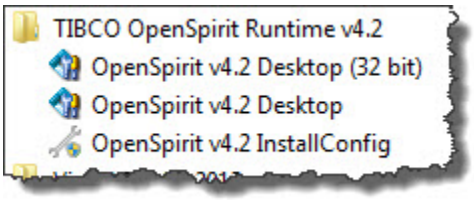
Many tools provided by the OpenSpirit Desktop make use of information that is stored in the OpenSpirit metadata repository. The OpenSpirit metadata repository is a database that is bundled with each OpenSpirit master installation. The metadata repository contains information such as OpenSpirit user preference settings, data source locations and connection information, OpenSpirit license path, etcetera. A primary function of the OpenSpirit shared services daemon is to provide OpenSpirit enabled applications and data connectors with access to the metadata repository. The OpenSpirit shared services must be running for applications and data connectors to be able to access the metadata repository.

The OpenSpirit Desktop will not run if it is unable to communicate with the OpenSpirit shared services daemon. This can happen if the shared services daemon is not running, or if there is a network outage that prevents communicating with the computer used to run the shared services daemon. The following error dialog will be displayed if the desktop cannot connect to the shared services daemon.


Contact your local OpenSpirit administrator to resolve issues with the OpenSpirit shared services daemon if this window appears when starting the OpenSpirit Desktop.

# Starting on Microsoft Windows Platforms

An entry is created in the Windows start menu or on the Windows desktop when OpenSpirit is installed on a computer running a Microsoft Windows operating system. The entry is titled ***OpenSpirit v#.# Desktop*** where ***v#.#*** is the version of OpenSpirit installed on your system. 64 bit versions of Microsoft Windows will contain a second start menu entry titled ***OpenSpirit v#.# Desktop (32 bit)***. The 32 bit entry is used to start the OpenSpirit Desktop in 32 bit mode.




Click on the start menu entry to run the OpenSpirit Desktop. The desktop can also be started using the ***ospdesktop.bat*** file provided in the ***bin*** folder of your Microsoft Windows OpenSpirit software installation.

The 32 bit version of the OpenSpirit Desktop is required when building Scan Utility jobs using certain scan output types. Normally you will want to use the 64 bit version of the OpenSpirit Desktop when running on a 64 bit version of the Microsoft Windows operating system.

# Starting on Linux Platforms

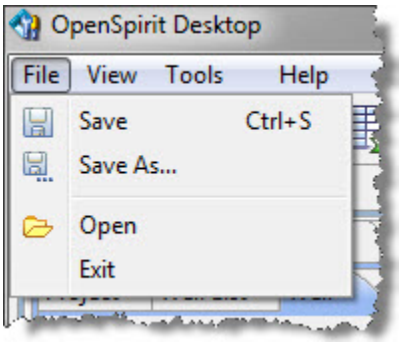
The OpenSpirit desktop is started on Linux using the ***ospdesktop*** script that resides in the ***bin*** directory of your OpenSpirit software installation. You must have the ***DISPLAY*** environment variable set properly in order to successfully run the script. It is also required to have an ***OSP_CONFIG*** environment variable set that points to the directory containing your OpenSpirit configuration settings. The environment variable is not required if your configuration settings directory resides in the default location under your OpenSpirit software installation directory. Consult with your local OpenSpirit administrator about the proper ***OSP_CONFIG*** environment variable setting to use.

# Desktop Overview

Along the top of the Main Window you will find the menus and the tool bars.

## File Menu

The File menu contains options used to open and save files and an option to exit the OpenSpirit Desktop. See the file extension table below for a list of desktop tools that have information that can be opened or saved using the File menu options.




## Save Menu Option

The Save menu option is enabled when the currently selected tool that is open in the desktop has information that can be saved and the information has changed since the last save. For example, the OpenSpirit Data Selector tool will enable the Save option if any changes are made to the information in the Data Selector, such as changing any display options, changing a row selection, etcetera. Clicking on an enabled Save option will save the currently selected tool's information to the default file name and location. The default file name is determined by the currently active tool.

The default location that files are saved in differs according to the host operating system the desktop is running on. The default save directory for the operating systems supported by OpenSpirit is indicated in the following table.

| Operating System | Default Save Directory* |
|---|---|
| Linux | $HOME/OpenSpirit/v#.#/Desktop |
| Microsoft Windows | %LOCALAPPDATA%\OpenSpirit\v#.#\Desktop |

** Substitute the major and minor version number of the OpenSpirit Runtime you are using for the "**#.#**" component of the directory path.*

## Save As... Menu Option

The Save As menu option is enabled when the currently selected tool that is open in the desktop has information that can be saved. Clicking on the Save As option displays a file

selector window that can be used to select the directory that the file should be written to and the name to give the file.

## Open Menu Option

The Open menu option is always enabled. Clicking on the Open option displays a file selector window that can be used to select a file created by a previous Save or Save As operation.

The following table lists the file name extensions of save files created by OpenSpirit desktop tools. The table indicates the desktop tool used to view the save file and describes how the file is created and its purpose.

### Desktop Tool File Name Extensions

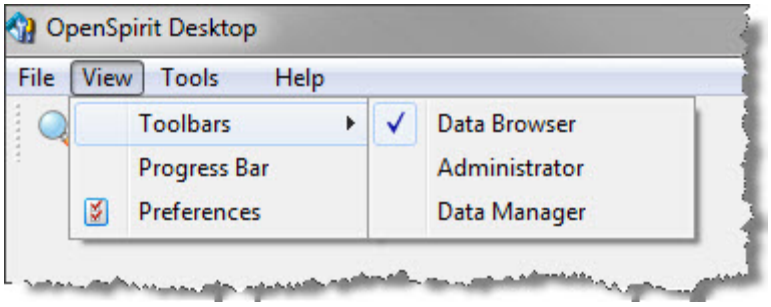
| File Name Extension | Desktop Tool used to View | Description |
|---|---|---|
| **.ospdataselector** | Data Selector | This file is produced when clicking on the ***Save*** or ***Save As*** icon in the Data Selector tool bar or in the desktop's File menu if the active tool is a Data Selector. The file contains the current state of the Data Selector, including the rows that are currently selected. |
| **.ospselections** | Data Selector | This file is produced by a copy or scan job and contains the rejection list produced by that job. The file is stored in the OpenSpirit master installation's metadata repository when the copy or scan job completes. The file can be exported from the metadata repository by clicking on the ***Send to support*** icon in the Job Run History tool. This produces a zip file that contains the rejection file along with other files related to the job run. A Data Selector is opened to display the rejection list when this file is opened using the desktop's ***Open*** menu option. |
| **.ospmodelview** | Model View Manager | This file is produced when clicking on the ***Export*** icon in the Model View Manager tool. Selecting this file using the desktop's ***Open*** menu option will initiate an import of the model view into the OpenSpirit master installation's metadata repository and will open the Model View Manager if it is not already open. An overwrite prompt will appear if the model view already exists. |
| **.ospcopyrep** | Copy Job Execution Report | This job execution report file is produced by a copy job. The file is stored in the OpenSpirit master installation's metadata repository when the copy job completes. The file can be exported from the metadata repository by clicking on the ***Send to support*** icon in the Job Run History tool. This produces a zip file that contains the report file along with other files related to the job run. A Copy Job Execution Report tool is opened to display the report when this file is opened using the desktop's ***Open*** |

| | | |
|---|---|---|
| | | menu option. The execution report and the job messages can be viewed using the Copy Job Execution Report tool. |
| **.ospcopydiag** | Copy Job Diagnostic Log | This file is produced if a copy job is executed with the log level set to ***DEBUG***. The file contains all of the information found in the execution report along will the debug messages produced by the job. This file is not stored in the OpenSpirit master installation's metadata repository. The file is however included in the zip file produced when clicking on the ***Send to support*** icon on the Job Run History if the zip file is created from the same account and host computer used to run the copy job. |
| **.ospcopyjob** | Copy Job Manager | This file is produced by clicking on the ***Export*** icon in the Copy Job Manager tool bar. Selecting this file using the desktop's ***Open*** menu option will initiate an import of the copy job into the OpenSpirit master installation's metadata repository. The job will only be imported if it doesn't already exist in the metadata repository. The copy job will appear in the Copy Job Manager's job list.<br>Note, the Copy Job Manager is not automatically opened when opening the copy job file. Click on the Copy Job Manager tool bar icon if the Copy Job Manager is not already open. The imported job can then be viewed by selecting it from the list of copy jobs and clicking on the ***View copy job*** icon. |
| **.ospscanrep** | Scan Job Execution Report | This job execution report file is produced by a scan job. The file is stored in the OpenSpirit master installation's metadata repository when the scan job completes. The file can be exported from the metadata repository by clicking on the ***Send to support*** icon in the Job Run History tool. This produces a zip file that contains the report file along with other files related to the job run. A Scan Job Execution Report tool is opened to display the report when this file is opened using the desktop's ***Open*** menu option. The execution report and the job messages can be viewed using the Scan Job Execution Report tool. |
| **.ospscandiag** | Scan Job Diagnostic Log | This file is produced if a scan job is executed with the log level set to ***DEBUG***. The file contains all of the information found in the execution report along will the debug messages produced by the job. This file is not stored in the OpenSpirit master installation's metadata repository. The file is however included in the zip file produced when clicking on the ***Send to support*** icon on the Job Run History if the zip file is created from the same account and host computer used to run the scan job. |
| **.ospscanjob** | Scan Job Manager | This file is produced by clicking on the ***Export*** icon in the Scan Job Manager tool bar. Selecting this file using the desktop's ***Open*** menu option will initiate an |

| | | |
|---|---|---|
| | | import of the scan job into the OpenSpirit master installation's metadata repository. The job will only be imported if it doesn't already exist in the metadata repository. The scan job will appear in the Scan Job Manager's job list.<br>Note: the Scan Job Manager is not automatically opened when opening the scan job file. Click on the Scan Job Manager tool bar icon if the Scan Job Manager is not already open. The imported job can then be viewed by selecting it from the list of scan jobs and clicking on the ***View scan job*** icon. |

# View Menu

The View menu contains options used to turn the desktop tool bars on or off and turn the Progress Bar on or off. It also contains an option to open the desktop preference settings window.




## Toolbars Menu Option

The Toolbars menu option opens a sub-menu that contains menu options to turn each of the desktop's tool bars on or off.

## Data Browser Menu Option

The Data Browser menu option is found in the Toolbars sub-menu. This menu option is used to display the tool bar that contains icons used to open tools commonly used in data browsing work flows. A check mark icon is shown next to the menu option if the tool bar is visible. The check mark is not shown if the tool bar is not currently visible. Selecting the menu option toggles the tool bar on or off.

## Administrator Menu Option

The Administrator menu option is found in the Toolbars sub-menu. This menu option is used to display the tool bar that contains icons used to open tools commonly used in OpenSpirit system administration work flows. A check mark icon is shown next to the

menu option if the tool bar is visible. The check mark is not shown if the tool bar is not currently visible. Selecting the menu option toggles the tool bar on or off.

## Data Manager Menu Option

The Data Manager menu option is found in the Toolbars sub-menu. This menu option is used to display the tool bar that contains icons used to open tools commonly used in data management work flows. A check mark icon is shown next to the menu option if the tool bar is visible. The check mark is not shown if the tool bar is not currently visible. Selecting the menu option toggles the tool bar on or off.

## Progress Bar Menu Option

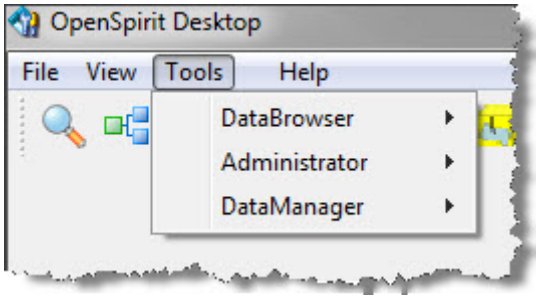
The Progress Bar menu option is used to display the Progress View tool. A check mark icon is shown next to the menu option if the Progress View tool is visible. The check mark is not shown if the Progress View tool is not currently visible. Selecting the menu option toggles the Progress View tool on or off.

## Preferences Menu Option

The Preferences menu option opens the OpenSpirit Desktop Preference window.

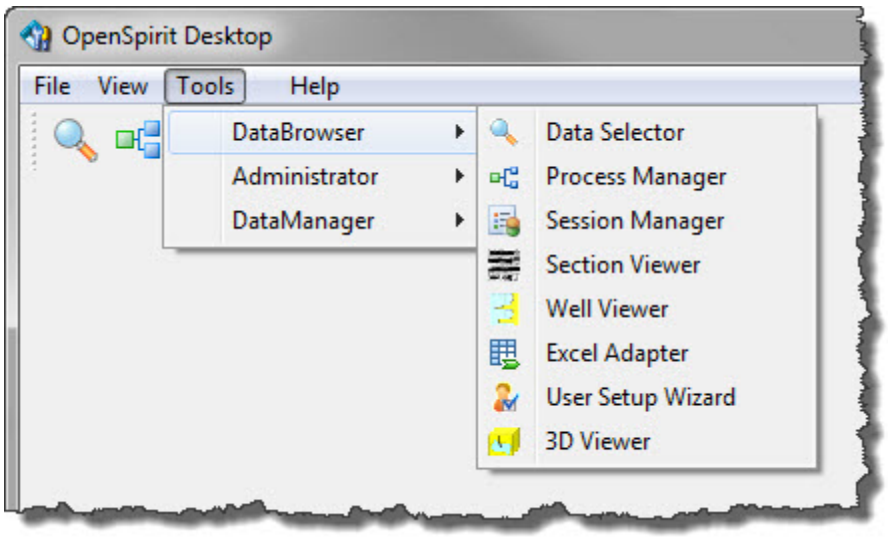
# Tools Menu

The Tools menu provides access to the options that are also provided in the desktop's tool bars. It is provided as a convenience to enable you to quickly access an option that resides in a tool bar that is not currently turned on for display. Selecting one of the tool categories opens a sub-menu containing menu options for all the icons found in the corresponding tool bar.



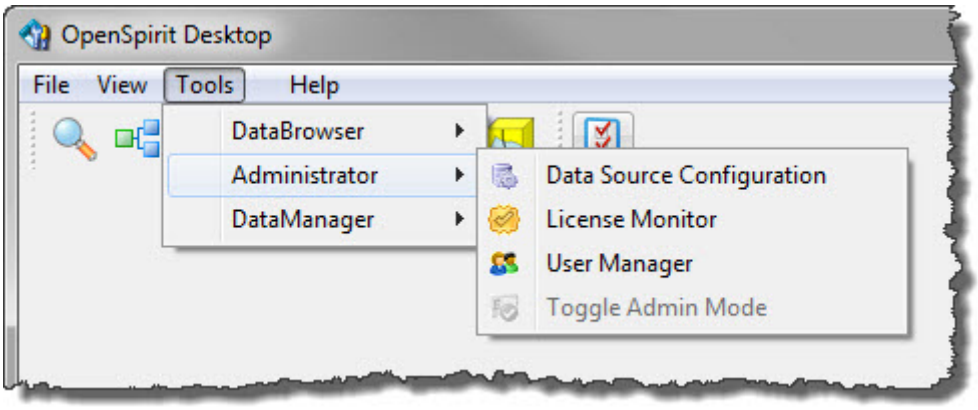

## DataBrowser Menu Option

The DataBrowser menu option opens a sub-menu containing options to open the data browsing tools. The data browser tools are described in the Data Browser Tool Bar section below.



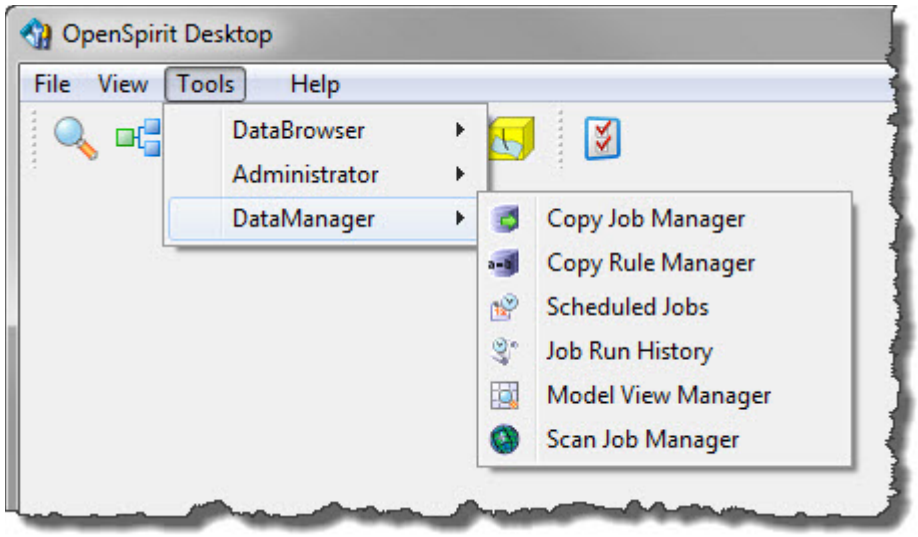

## Administrator Menu Option

The Administrator menu option opens a sub-menu containing options to open the administrator tools. The administrator tools are described in the Administrator Tool Bar section below.




## DataManager Menu Option

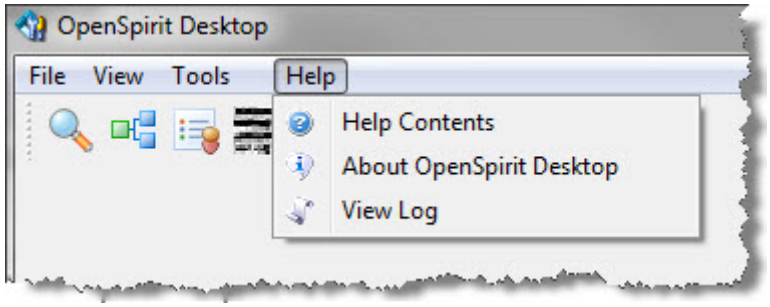
The DataManager menu option opens a sub-menu containing options to open the data manager tools. The data manager tools are described in the Data Manager Tool Bar section below.




The Copy Job Manager and Copy Rule Manager menu items will only appear if the TIBCO OpenSpirit Copy Manager product is installed. The Scan Job Manager menu item will only appear if the TIBCO OpenSpirit Scan Utility product is installed.

# Help Menu

The Help menu contains options to display this help document, information about your OpenSpirit installation, and the log file containing messages generated by the OpenSpirit Desktop.




## Help Contents Menu Option

The Help Contents menu option opens this help document.

## Help About OpenSpirit Desktop Menu Option

The Help About OpenSpirit Desktop menu option opens a window containing information about your OpenSpirit installation environment.

## View Log Menu Option

The View Log menu option opens a window that displays the log file created by the OpenSpirit Desktop. The log file may contain helpful information if you run into problems using one of the desktop tools.

# Data Browser Tool Bar

The Data Browser tool bar contains icons used to open tools that are primarily used in data browsing work flows.


The OpenSpirit Section Viewer, Well Viewer, 3D Viewer, and Excel Adapter are launched from the OpenSpirit desktop, but they run as independent applications.

## Data Selector

The Data Selector tool is a data selection and query utility that presents a tabular summary of selected attributes associated with the data types that are supported by the OpenSpirit Framework. The Data Selector can be used to browse data from any data source supported by the OpenSpirit framework. The Data Selector is also used to send data selection events to applications that support listening for OpenSpirit data selection events.

## Process Manager

The Process Manager tool is used to monitor and control processes that have been started by the OpenSpirit framework to service data requests. The tool shows all processes owned by the user and provides access to the process log file and settings. The tool can also be used to shut the processes down.

## Session Manager

The Session Manager tool is used to create, view, modify, and delete OpenSpirit sessions owned by the user.

## Section Viewer

The Section Viewer is used to graphically display 2D seismic lines and 3D seismic sections. The viewer can also display 2D and 3D horizon and fault cross sections.

## Well Viewer

The Well Viewer is used to graphically display well logs and well markers. The viewer supports dynamic addition and removal of well tracks.

## Excel Adapter

The Excel Adapter is used to import data into Microsoft Excel spreadsheets. It is a separately licensed tool.

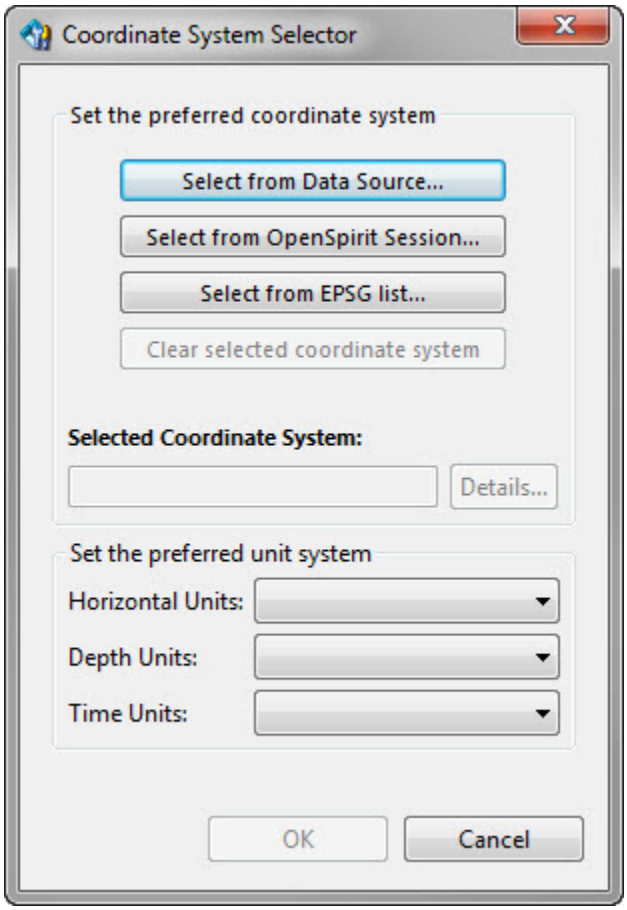
## User Setup Wizard

The User Setup Wizard is used to enter host and account preferences for running OpenSpirit data connectors and data source credentials and preference settings.

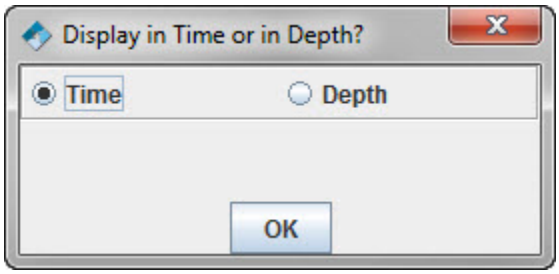
## 3D Viewer

The 3D Viewer is used to graphically display well, seismic, interpretation, and culture data in a three dimensional view.


A coordinate selection window appears when launching the 3D Viewer. The window is used to select the coordinate system and units that will be used to define the 3D Viewer's coordinate space. You should select an appropriate projected coordinate reference system for the data you intend to view.




A second window will appear after clicking on the coordinate system selection window's **Ok** button to ask if the 3D Viewer should display data using seismic time or depth for its vertical display axis.




The 3D Viewer will appear ready to accept data selection events after clicking on the Time/Depth window's **Ok** button.

# Administrator Tool Bar

The Administrator tool bar contains icons used to open tools that are primarily used in work flows for administering the OpenSpirit environment.

## Data Source Configuration

In order for OpenSpirit to access data in the various vendor data sources, you must “tell” OpenSpirit about each source, which is known as configuring the data sources. Information entered in this tool provides the OpenSpirit framework with the necessary information to locate and access data in vendor data stores, such as OpenWorks, GeoFrame, PPDM, etc..

## License Monitor

The License Monitor tool is used to view the features that are available in your OpenSpirit license and to monitor their usage. The License Monitor can also be used to force check in licenses when running the OpenSpirit Desktop in admin mode.

## User Manager

The User Manager tool is used to view and modify information about registered OpenSpirit users. It is also used to manage OpenSpirit access rights.

## Admin Mode

The Admin Mode tool bar button is used to toggle admin mode on and off in the OpenSpirit Desktop. See the Changing to Admin Mode section of this guide for information about admin mode.

# Data Manager Tool Bar

The Data Manager tool bar contains icons used to open tools that are primarily used in data management work flows.

## Copy Job Manager

The Copy Job Manager tool is used to create and schedule jobs to copy data from one or more OpenSpirit data sources to a target data store. This is a separately licensed tool and will only appear in the tool bar if it has been installed. The OpenSpirit administrator may restrict access to this tool to specifically authorized users.

## Copy Rule Manager

The Copy Rule Manager tool is used to create and modify the data source type specific rules used by the Copy Job Manager when copying data. This is a separately licensed tool and will only appear in the tool bar if it has been installed. The OpenSpirit administrator may restrict access to this tool to specifically authorized users.

## Scheduled Jobs tool

The Scheduled Jobs tool is used to view and manage Copy and Scan jobs that have been scheduled to run at a future time.

## Job Run History tool

The Job Run History tool is used to view Copy and Scan jobs that are currently running or have run in the past.

## Model View Manager tool

The Model View Manager tool is used to create and modify Model Views used by the Data Selector and Scan Job Manager tools.

## Scan Job Manager tool

The Scan Job Manager tool is used to create and schedule jobs to scan spatial data residing in OpenSpirit data sources and write the spatial data to ESRI SDE, shape files, or ESRI File GeoDatabase. This is a separately licensed tool and will only appear in the tool bar if it has been installed.

## Copy Manager tool

The Copy Manager tool is used to copy data from one or more OpenSpirit data sources to a target data source. This is a separately licensed tool and will only appear in the tool bar if it has been installed.

# Desktop Tool Bar

The Desktop tool bar is always displayed.

## Desktop Preferences

The Desktop Preferences settings window is opened using this tool bar icon.

# Changing to Admin Mode

*Admin Mode* enables public OpenSpirit resources to be created, edited, and deleted. Examples of public resources are public data source configurations, OpenSpirit users, public sessions, and public model views. *Admin Mode* should only be used by individuals that have been assigned responsibility to configure and administer your OpenSpirit environment.

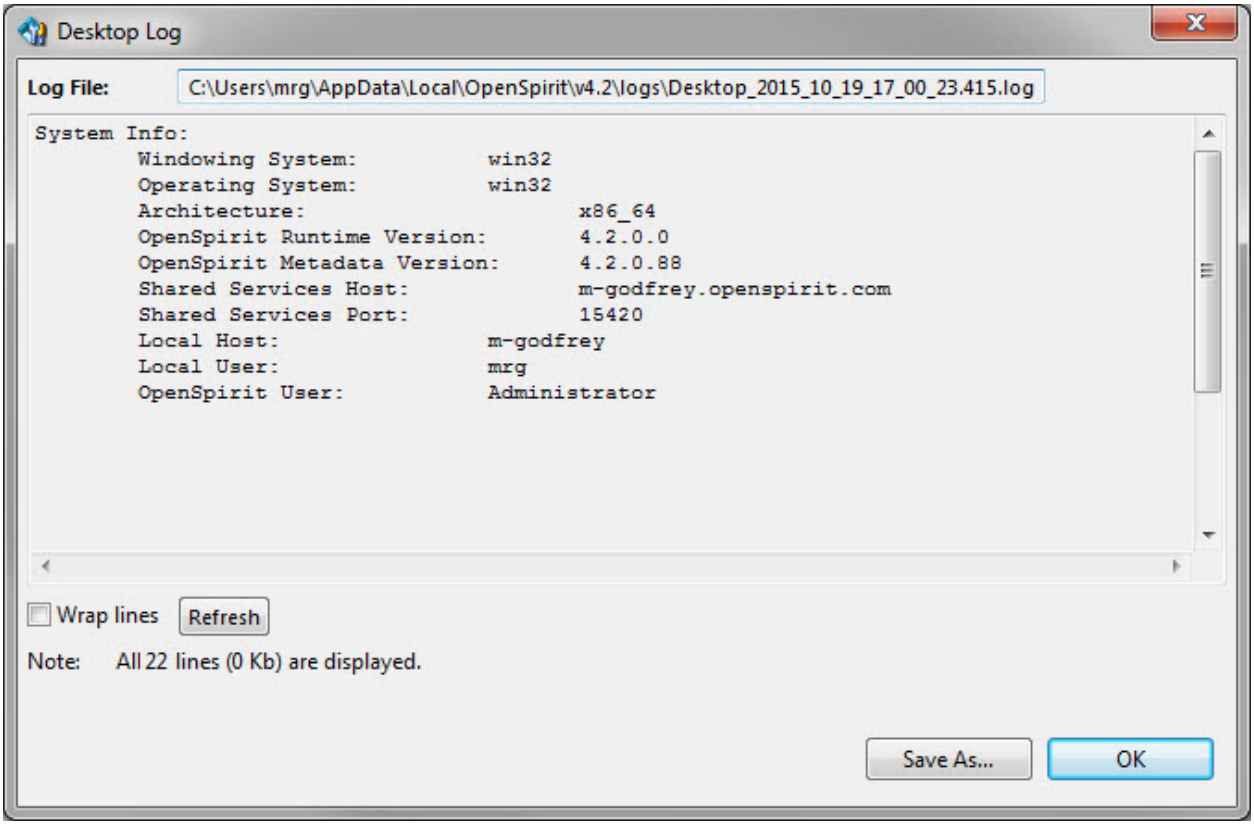
The OpenSpirit Desktop will open in normal mode when it is started by a user other than the OpenSpirit administrator. *Admin Mode* can be enabled when running the OpenSpirit Desktop using a non-admin account by pressing the *Toggle Admin Mode tool bar* icon  or by selecting the ***Tools >Administrator > Toggle Admin Mode*** menu option. This will open a prompt for the administrator password unless your account has been granted the ***Administer OpenSpirit Runtime*** right by your OpenSpirit administrator. The button appears with a green check mark  when the desktop enters admin mode.

 Be careful when running in admin mode. You are able to delete information that may be difficult or impossible to recover.

The OpenSpirit Desktop opens automatically in *Admin Mode* when it is run using the OpenSpirit Administrator account. The *Toggle Admin Mode tool bar* icon will appear disabled  when using the OpenSpirit administrator account because the desktop is always in admin mode when running from the OpenSpirit administrator account.

# Desktop Log

The Desktop Log window is accessed from the OpenSpirit Desktop by choosing the ***Help > View Log*** menu item. The Desktop Log window displays informational messages generated by the OpenSpirit Desktop tools. The ***Desktop Log Level*** setting on the ***OpenSpirit Desktop*** preferences page controls the amount of detail that appears in the Desktop Log window. The log messages are written to a file named ***Desktop.log*** in your OpenSpirit logs folder.




The location and name of the Desktop's log file is shown at the top of the log window.

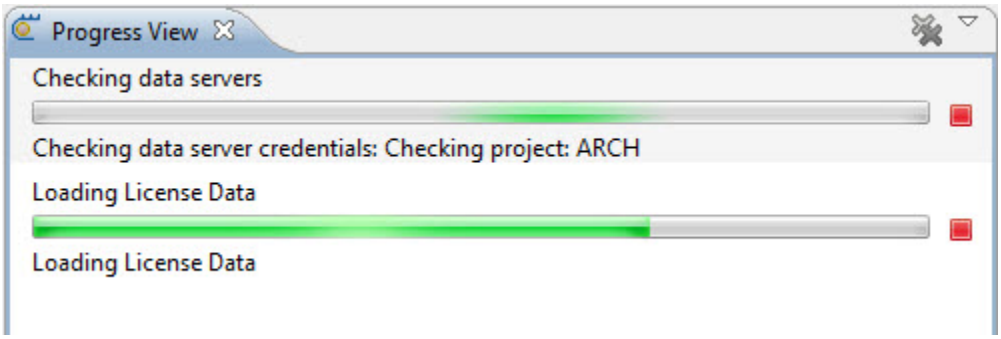
Click on the ***Refresh*** button at the bottom left of the Desktop Log window to show any new entries that may have been written to the log file since the log window was opened.

Check the ***Wrap lines*** option to wrap long lines and eliminate the horizontal scroll bar.

Click on the ***Save As...*** button to save the current content of the log file to another file of your choosing. New entries will continue to be written to the original log file. The save as option creates a copy of the log file, it does not rename or replace it.

# Progress View

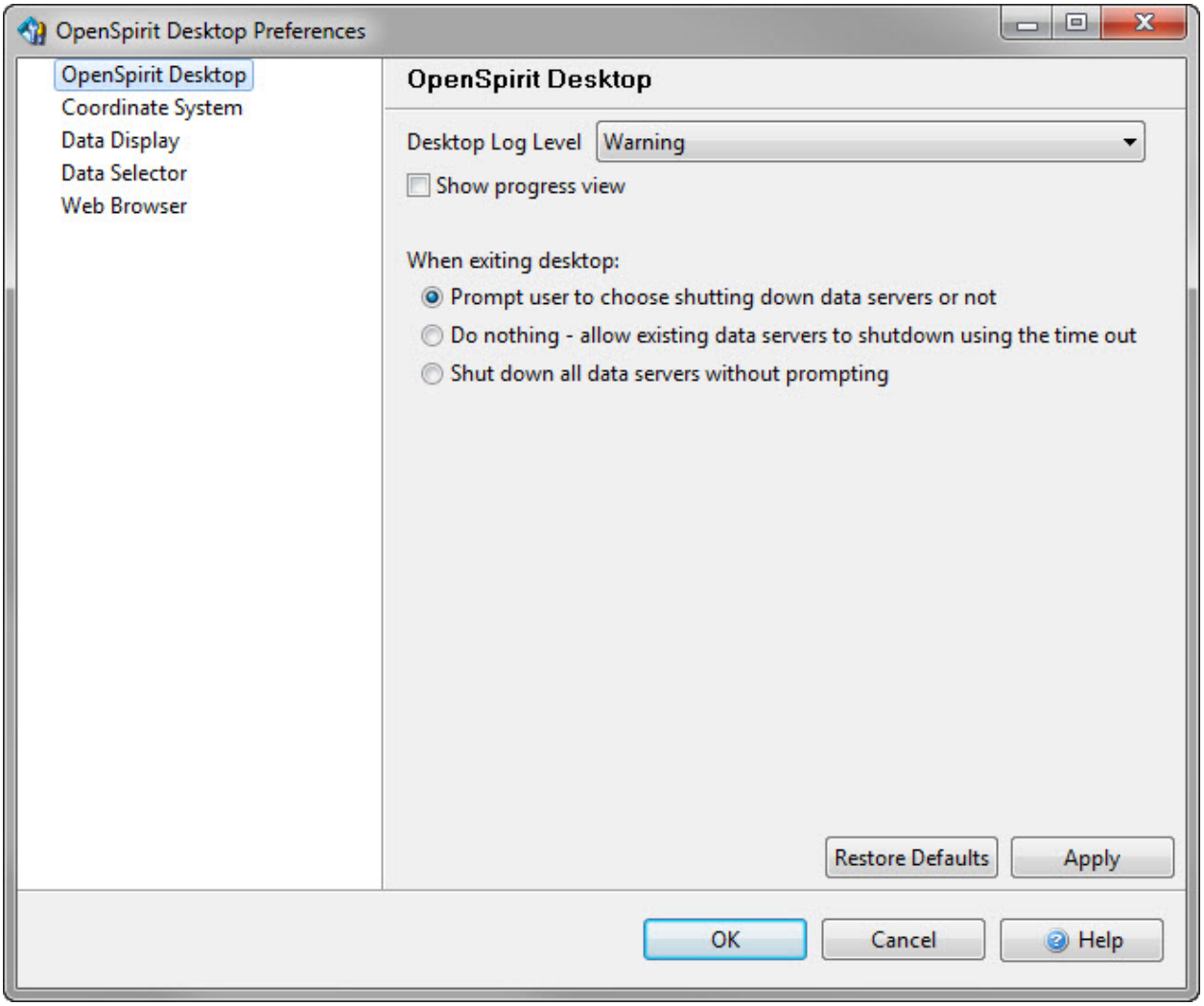
The Progress View is displayed by selecting the ***View -> Progress Bar*** menu option or by checking the ***Show progress view*** option in the OpenSpirit Desktop Preferences page. The ***Progress View*** is a window that displays progress of desktop operations that take significant time to complete. A progress bar appears in the Progress View window for each long running operation. A rectangular red icon is displayed to the right of each progress bar. Clicking on the red icon will cancel the long running operation. Note, you may have to re-size the Progress View window vertically in order to see all the progress bars.



# Desktop Preference Settings

## Desktop Preferences

The Desktop Preferences dialog is accessed from the OpenSpirit Desktop by choosing the ***View > Preferences*** menu item or by clicking on the preferences  icon in the Desktop's tool bar. The list of available preference pages is displayed along the left side of the preferences dialog. The contents of this list will vary depending on which OpenSpirit Desktop tools have been installed into your desktop. The right side of the preferences dialog shows the content of the selected preference page. Changes made to a preference page can be immediately saved by pressing the ***Apply*** button. The ***Restore Defaults*** button will revert the preference settings on the displayed page to the factory default values. Pressing the ***Ok*** button will apply any changes made to any of the preference pages and dismiss the dialog. Pressing the ***Cancel*** button will discard any unapplied changes to any preference pages and dismiss the dialog. Pressing the ***Help*** button will display this help document.



Selecting the ***OpenSpirit Desktop*** item on the left panel displays the page for setting the desktop logging level, the option to show the progress bar as a view window, and the desktop exiting behavior setting.

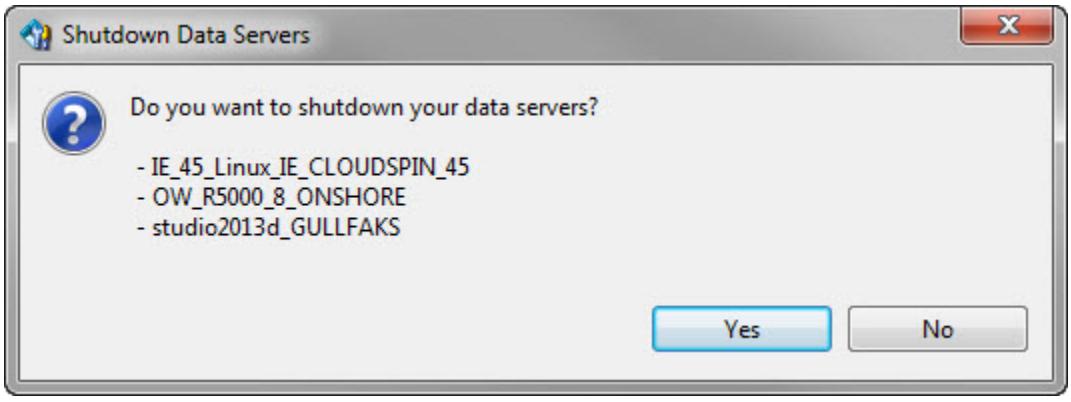
The ***Desktop Log Level*** setting controls the amount of information that will be available for viewing in the Desktop Error Log window. You should avoid setting this to ***All*** or ***Debug*** unless instructed to do so by OpenSpirit support in order to avoid overwhelming the desktop with a massive amount of log message.

The meaning of each log level is described in the following table.

| Log Level | Description |
|---|---|
| ERROR | Produces the least amount of log file output. This level should only be used if you have no interest in anything but failures. |
| WARN | Produces less output than INFO. Consider using this level if you are trying to keep the log file size down and are not interested in details of successful operations. Only failure information is reported. |
| INFO | The default level. This is the recommended log level. It produces a reasonably detailed amount of information. |
| DEBUG | Produces a large amount of output. You typically should not use this level unless instructed by OpenSpirit support. Large numbers of program execution messages needed to diagnose problems are produced when this log level is used. |
| ALL | Produces a tremendous amount of output. This level should never be used unless instructed by OpenSpirit support. Volumes of very detailed program execution messages needed to diagnose difficult problems are produced when using this log level. This log level may produce multi-gigabyte log files. |

The ***Show progress view*** option controls display of the Progress View window.

The ***When exiting desktop*** option controls the data server process shutdown behavior when exiting the desktop. The default value for this option is to prompt when exiting the desktop.




The prompt lists your data server processes that are currently running and asks if you would like to shut them down. Click on the ***Yes*** button to shut down the data servers, click on the ***No*** button to leave them running.

Choosing the ***Do nothing*** desktop preference option prevents the shutdown prompt when exiting the desktop and leaves data connectors running.

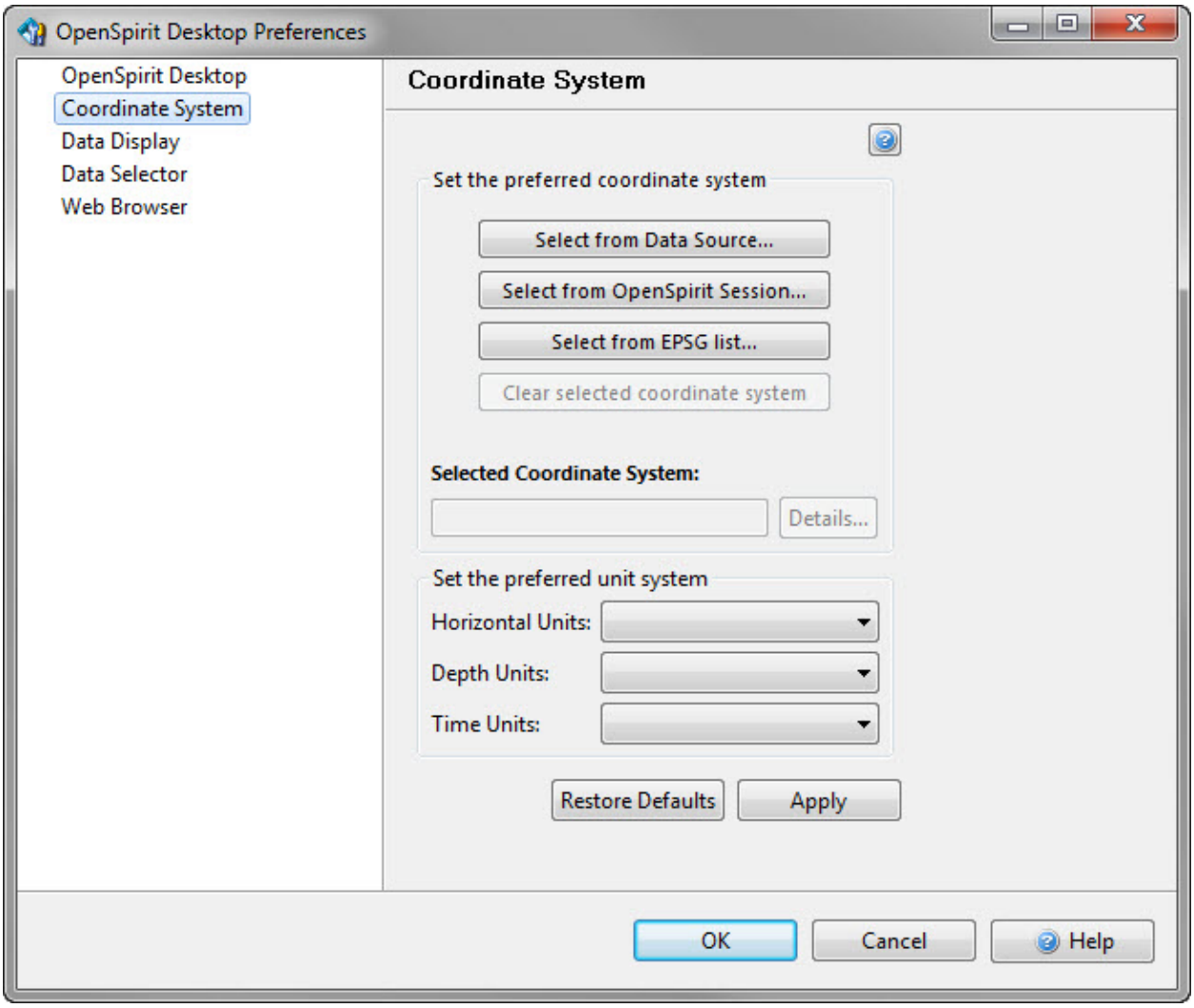
 Data connectors will time out and shut down after a period of inactivity. See the OpenSpirit Installation and Configuration Help guide for more information about data server inactivity timeout.

Choosing the ***Shut down all data servers without prompting*** option will shut down all of your data server processes when exiting the desktop without prompting for confirmation.

 Use care when choosing the ***Shut down all data servers without prompting*** option. Data servers that are busy performing a copy job, a scan job, or servicing an application such as Petrel will be shut down without warning and will likely cause errors in the job they are performing.

## Coordinate System Preferences

Selecting the ***Coordinate System*** item on the left panel displays the page for setting the desktop's coordinate system and unit display preferences. These settings are honored by the data display tools that are run in the desktop, such as the Data Selector, Scan Job Manager, and Copy Job Manager. The coordinate system and unit display settings are optional. Data will be displayed in the data store's default coordinate system and units if desktop preferences are not set.




## Set the preferred coordinate system

A display coordinate system can be selected in three different ways. A coordinate system can be selected from a data source, from an existing OpenSpirit session, or from the set of predefined *EPSG* coordinate systems. Setting a coordinate system preference will cause all spatial data displayed in the OpenSpirit desktop tools to be transformed to the selected coordinate system for display. Data that cannot be transformed due to coordinate system incompatibilities will not appear (i.e. it will be displayed as if it were null).

The desktop coordinate system preference will only affect data represented as one of the OpenSpirit geometry types (e.g. Point, LineString, Polygon, etc..). X/Y or Lat/Long values that appear in native data models as individual values will not be transformed to the selected coordinate system.

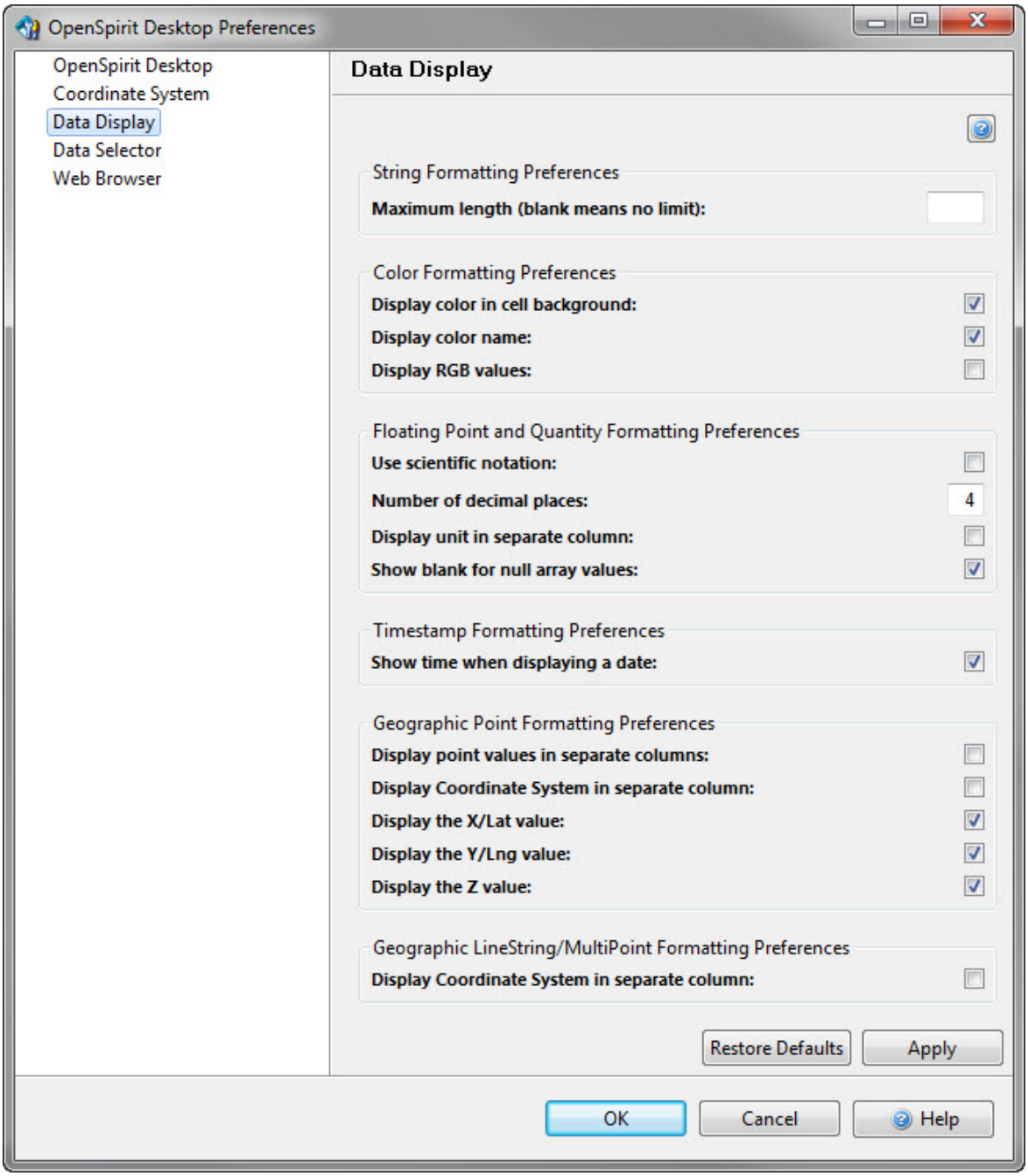
## Set the preferred unit system

Preferences for horizontal units, depth units, and seismic travel time units will cause values that represent horizontal distance values, depth measurements, or seismic travel time to be converted for display. Measurement fields must be tagged in the data model as having one of these unit measurement types in order to be unit converted for display.

For example, the OpenSpirit data model's well log has an attribute called Top Index which may contain measured depth values or it may contain seismic travel time values. The Top Index attribute therefore is not constrained to a particular unit measurement and values will not be unit converted to the desktop unit preferences. The OpenSpirit data model's well pick has an attribute called MD Value which can only contain measured depth values. The MD Value attribute is assigned a "length vertical" unit measurement which results in the values being unit converted to the desktop's depth unit preference.

# Data Display Preferences

Selecting the ***Data Display*** item on the left panel displays the page for setting preferences in how various data values are displayed in the desktop.




Data display preferences can also be set on individual attributes in the Data Selector or in a Model View which will override the desktop display preference setting. This behavior may give the impression that the Desktop Data Display preferences are not working. Check your Data Selector column preferences and your Model View settings for attributes that do not appear to honor the desktop settings.

## String Formatting Preferences

Display of character string data values can be limited to a fixed number of characters. Leave the setting blank to display the full content of character string data values.

 String values are truncated to the maximum length when using copy/paste to copy rows from the Data Selector to another application. You may loose information during copy/paste if a maximum length preference is set.

 Note, the Data Selector column widths are not increased to show the entire string value if the maximum length is set to blank or a large number. You may need to widen columns by stretching the column header with your mouse in order to see the entire string.

## Color Formatting Preferences

Color data values can be displayed using it as a background color

| Well Bore UWI | Color | Pick Name |
|---|---|---|
| 490251042700 | | F1WCBench3Top |
| 490251042700 | | Frontier2 Wall Creek |
| 490251042700 | | F1WCBench2Top |
| 490251042700 | | Frontier1 Wall Creek |

displaying the name of the color,

| Well Bore UWI | Color | Pick Name |
|---|---|---|
| 490251042700 | red | 73-AX-15 |
| 490251042700 | yellow | 73-AX-15 |
| 490251042700 | medium orchid | 73-AX-15 |
| 490251042700 | green | 73-AX-15 |

displaying the red, green, and blue (RGB) component values of the color,

| Well Bore UWI | Color | Pick Name |
|---|---|---|
| 490251042700 | RGB(255,0,0) | 73-AX-15 |
| 490251042700 | RGB(255,255,0) | 73-AX-15 |
| 490251042700 | RGB(193,77,205) | 73-AX-15 |
| 490251042700 | RGB(0,255,0) | 73-AX-15 |

or any combination of the three.

| Well Bore UWI | Color | Pick Name |
|---|---|---|
| 490251042700 | red RGB(255,0,0) | 73-AX-15 |
| 490251042700 | yellow RGB(255,255,0) | 73-AX-15 |
| 490251042700 | medium orchid RGB... | 73-AX-15 |
| 490251042700 | green RGB(0,255,0) | 73-AX-15 |

## Floating Point and Quantity Formatting Preferences

Display of floating point numeric values can be customized in several ways. Selecting the ***Use scientific notation*** option will cause floating point numeric values to be displayed using scientific notation (e.g. 9.273E4 ) rather than the default decimal notation (e.g. 92730.0).

The number of fractional digits displayed to the right of the decimal can be controlled using the ***Number of decimal places*** option. Enter an integer between zero and ten inclusive.

 The ***Number of decimal places*** setting determines the precision of numeric values when using copy/paste to copy rows from the Data Selector to another application. You may lose precision during copy/paste if an insufficient number of decimal places is used.

 The floating point number preferences are also used to display spatial data.

Selecting the ***Display unit in separate column*** option will cause measurement values to display their unit in a separate table column

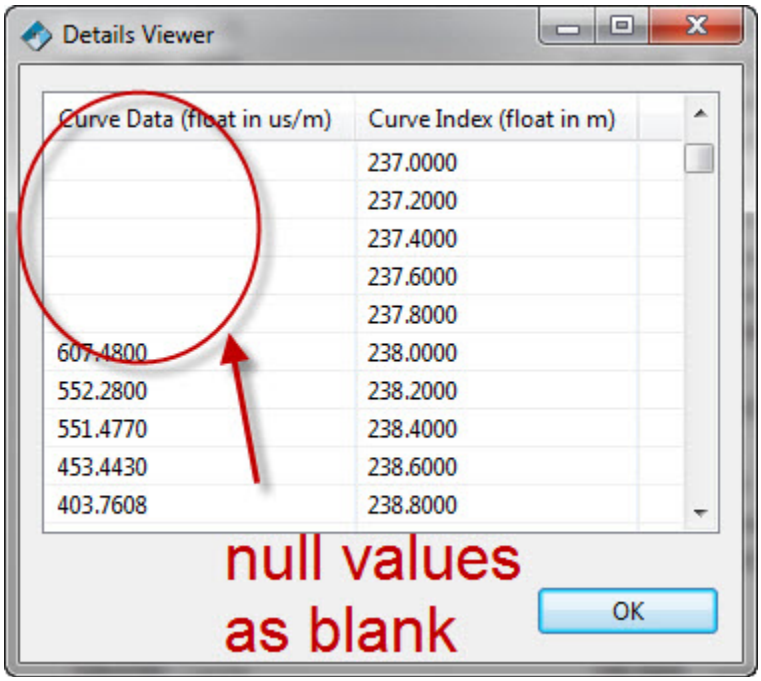
| Max Curve Value | Max Curve Value (unit) | Min Curve Value | Min Curve Value (unit) |
|---|---|---|---|
| 165.5700 | us/ft | 77.3090 | us/ft |
| 7,262.4102 | mS/m | 0.5000 | mS/m |
| 2,000.0000 | ohm.m | 0.1080 | ohm.m |
| 0.1499 | ft3/ft3 | 0.0000 | ft3/ft3 |
| 9,225.2227 | mS/m | 0.5000 | mS/m |

rather than the default of displaying the unit in the same column as the numeric value.

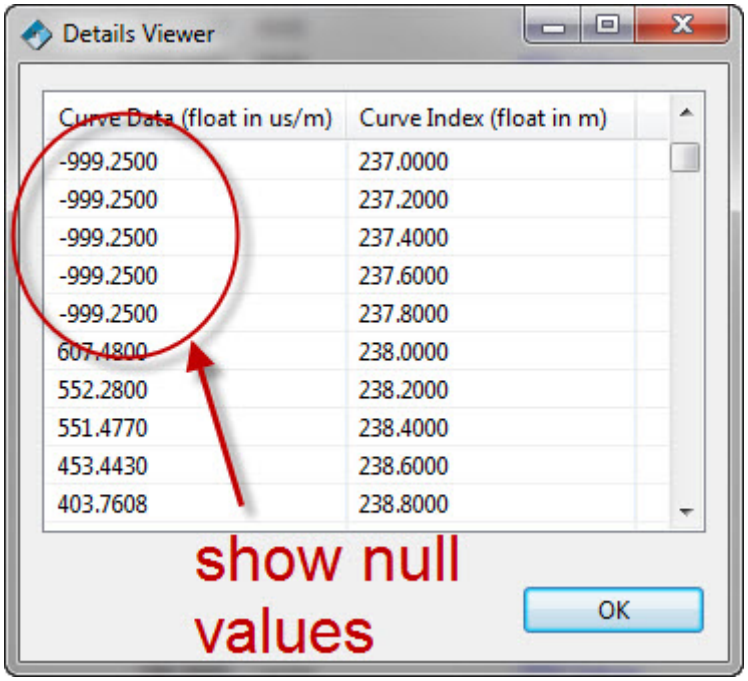
| Max Curve Value | Min Curve Value |
|---|---|
| 165.5700 us/ft | 77.3090 us/ft |
| 7,262.4102 mS/m | 0.5000 mS/m |
| 2,000.0000 ohm.m | 0.1080 ohm.m |
| 0.1499 ft3/ft3 | 0.0000 ft3/ft3 |
| 9,225.2227 mS/m | 0.5000 mS/m |

Separate unit column display enables sorting by unit and can help when using copy/paste to copy table rows into other applications such as Microsoft Excel. It will also cause the numeric portion of the measurement to be right aligned in the column to aid in visual comparison of row values.

The ***Show blank for null array values*** option controls the display of null values in the array details popup window. Select this option to display null values as a blank entry.

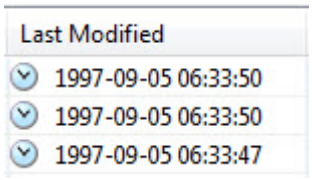



Deselect this option to show the numeric value used to represent null values in the array.



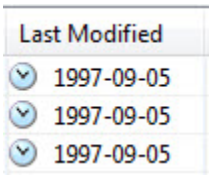

## Timestamp Formatting Preferences

Select the ***Show time when displaying a date*** option to display the time of day portion of timestamp values.



| Last Modified |
| --- |
| 1997-09-05 06:33:50 |
| 1997-09-05 06:33:50 |
| 1997-09-05 06:33:47 |

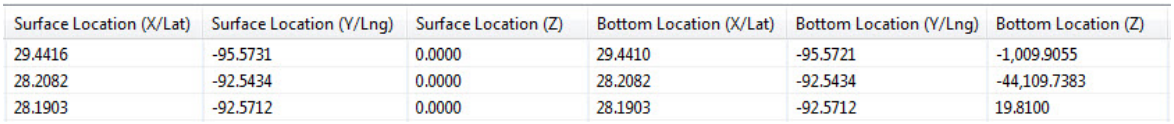
Deselect this option to show only the year, month, day portion of the timestamp.



| Last Modified |
| --- |
| 1997-09-05 |
| 1997-09-05 |
| 1997-09-05 |

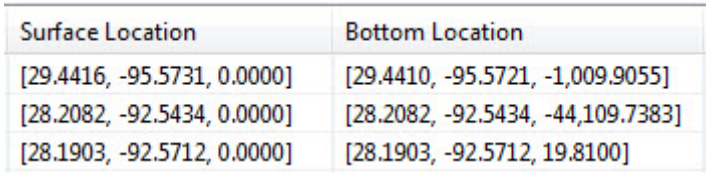
## Geographic Point Formatting Preferences

Select the ***Display point values in separate columns*** option to display the x, y, and z components of Point spatial data in separate columns.



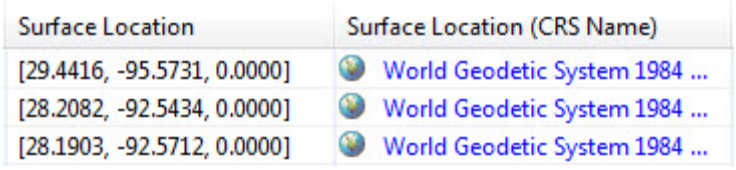
| Surface Location (X/Lat) | Surface Location (Y/Lng) | Surface Location (Z) | Bottom Location (X/Lat) | Bottom Location (Y/Lng) | Bottom Location (Z) |
| --- | --- | --- | --- | --- | --- |
| 29.4416 | -95.5731 | 0.0000 | 29.4410 | -95.5721 | -1,009.9055 |
| 28.2082 | -92.5434 | 0.0000 | 28.2082 | -92.5434 | -44,109.7383 |
| 28.1903 | -92.5712 | 0.0000 | 28.1903 | -92.5712 | 19.8100 |

Deselect this option to display the x, y, and z components of Points in the same column.



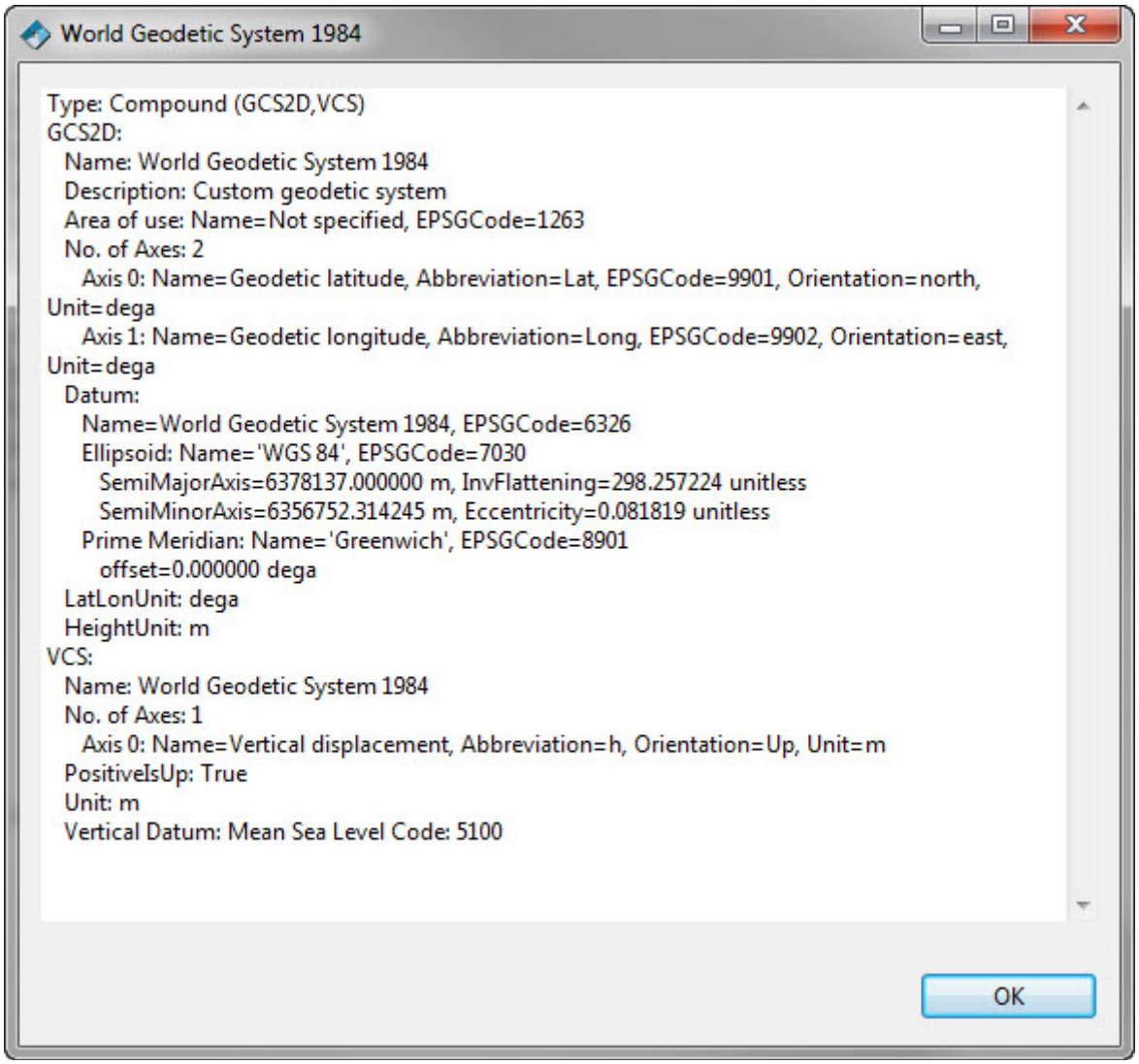
| Surface Location | Bottom Location |
| --- | --- |
| [29.4416, -95.5731, 0.0000] | [29.4410, -95.5721, -1,009.9055] |
| [28.2082, -92.5434, 0.0000] | [28.2082, -92.5434, -44,109.7383] |
| [28.1903, -92.5712, 0.0000] | [28.1903, -92.5712, 19.8100] |

Select the ***Display Coordinate System in separate column*** option to display an additional column containing the name of the Point's coordinate system.



| Surface Location | Surface Location (CRS Name) |
| --- | --- |
| [29.4416, -95.5731, 0.0000] | World Geodetic System 1984 ... |
| [28.2082, -92.5434, 0.0000] | World Geodetic System 1984 ... |
| [28.1903, -92.5712, 0.0000] | World Geodetic System 1984 ... |

The coordinate system name is shown as a hyper link that will pop up a coordinate system details display window when clicked on.




Deselect the ***Display the X/Lat value*** option to inhibit display of the X or Latitude portion of the Point.

Deselect the ***Display the Y/Lng value*** option to inhibit display of the Y or Longitude portion of the Point.

Deselect the ***Display the Z value*** option to inhibit display of the Z portion of the Point.

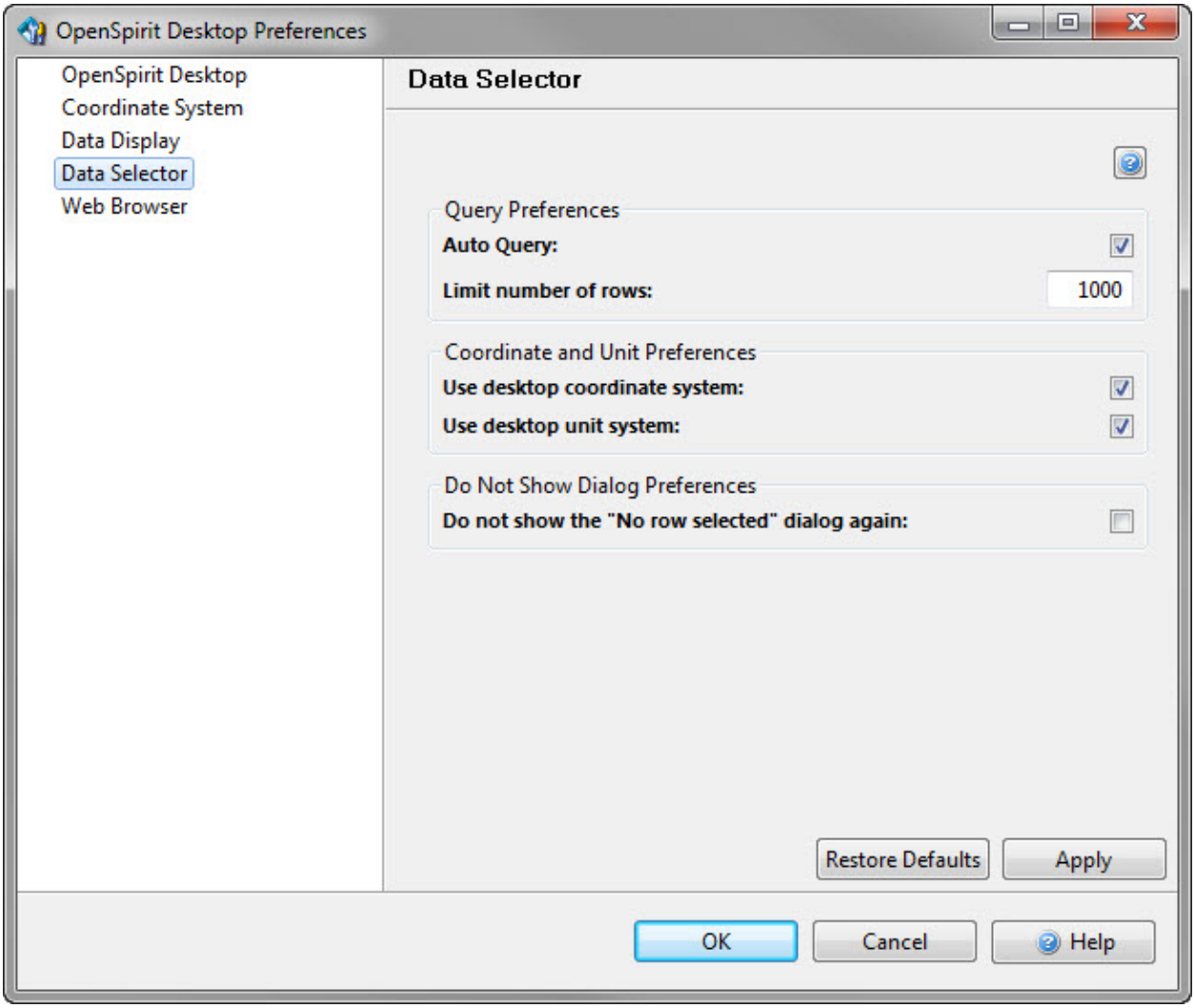
Deselecting all three is not allowed.

## Geographic LineString/MultiPoint Formatting Preferences

Select the ***Display Coordinate System in separate column*** option to display an additional column containing the name of the LineString's coordinate system.

# Data Selector Preferences

Selecting the ***Data Selector*** item on the left panel displays the page for setting preferences that control the behavior of the Data Selector tool.




## Query Preferences

Select the ***Auto Query*** option to have the Data Selector automatically execute queries when first displaying a data type tab or when making any change that requires data to be re-read from the data source. Consider deselecting this option when using the Data Selector to browse data sources that contain a large quantity of data. You must click on the query icon  to retrieve data when the auto query option is deselected.

The ***Limit number of rows*** setting provides protection when browsing data sources that contain large numbers of data items. This setting is used as the default row limit for the individual data type tabs in the Data Selector. This setting establishes an upper bound on the number of rows that will be returned by query and displayed in the Data Selector. This

can protect you against executing queries that return far more rows than you are interested in browsing. Enter zero for the row limit or blank out the value entirely to display all rows without imposing limit.

## Coordinate and Unit Preferences

Selecting the ***Use desktop coordinate system*** option will cause the Data Selector to attempt conversion of all spatial data to the coordinate system selected in the ***Coordinate System*** desktop preferences. This option has no effect if coordinate system preference has not also been set. This option is provided to enable coordinate conversion to be easily turned off in the Data Selector without having to remove your desktop coordinate system selection.

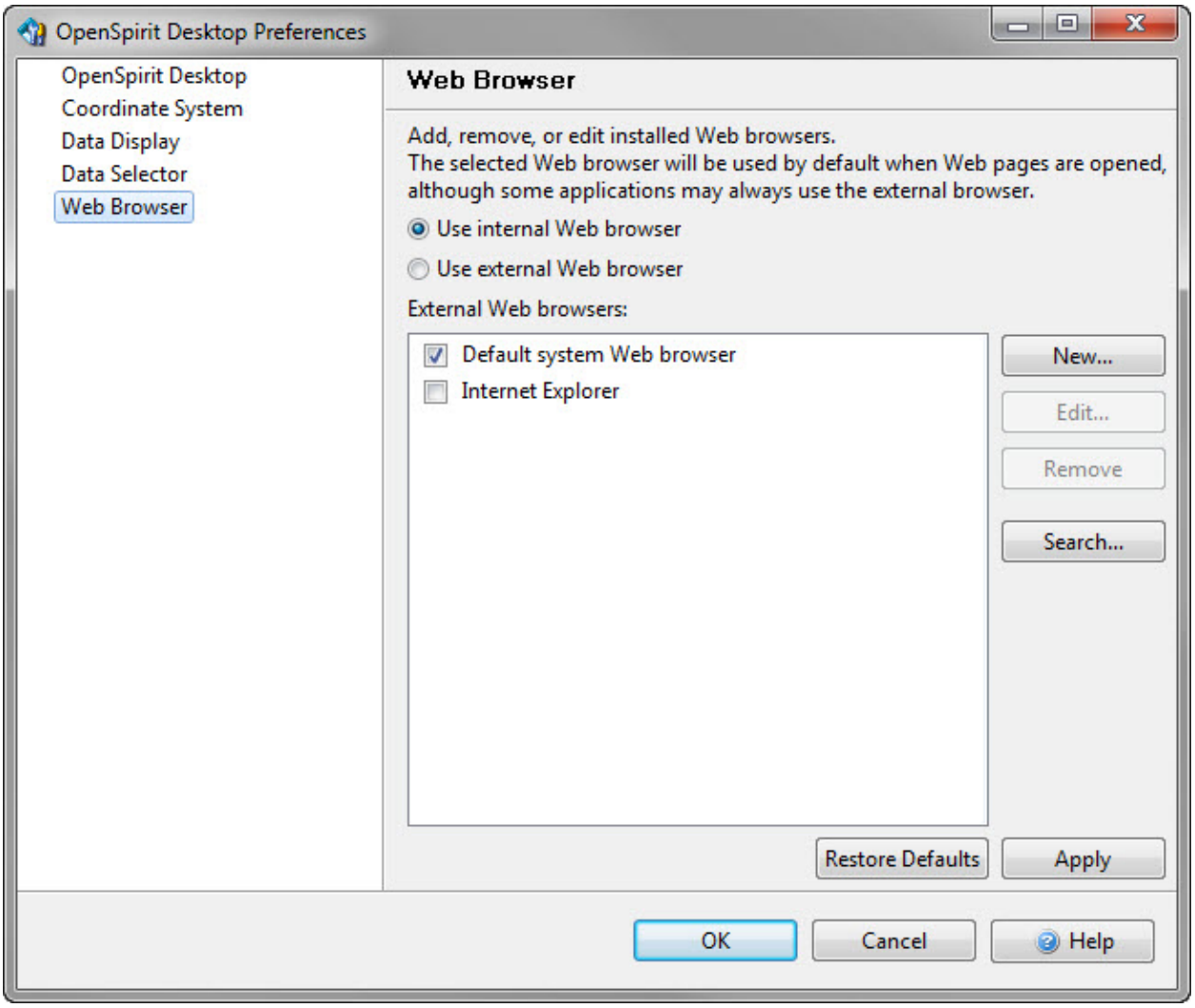
Selecting the ***Use desktop unit system*** option will cause the Data Selector to attempt conversion of all measurement data to the units selected in the ***Coordinate System*** desktop preferences. This option has no effect if unit preferences have not also been set. This option is provided to enable unit conversion to be easily turned off in the Data Selector without having to remove your desktop unit selections.

## Do Not Show Dialog Preferences

The ***Do not show the "No row selected" dialog again*** option is used to restore display of the No row selected warning dialog if the ***Do not show this dialog again*** option was checked the last time the dialog appeared. Un-check this option if you would like to have the warnings displayed.

# Web Browser Preferences

Selecting the ***Web Browser*** item on the left panel displays the page for controlling the web browser used to display web content selected from within the OpenSpirit Desktop. You can choose the desktop's internal browser, or you can select one of the external browsers discovered by the desktop. You can also use the ***New*** button to add additional external web browsers that the desktop was not able to discover on its own.


OpenSpirit Desktop Preferences
OpenSpirit Desktop
Coordinate System
Data Display
Data Selector
Web Browser
Web Browser
Add, remove, or edit installed Web browsers.
The selected Web browser will be used by default when Web pages are opened, although some applications may always use the external browser.
Use internal Web browser
Use external Web browser
External Web browsers:
Default system Web browser
Internet Explorer
New...
Edit...
Remove
Search...
Restore Defaults
Apply
OK
Cancel
Help

# Data Browsing Tools

## Topics

# User Setup Wizard Overview

The User Setup Wizard is used to select the computers and accounts that will be used to run OpenSpirit data connectors. The User Setup Wizard is also used to enter any required or optional settings needed by OpenSpirit data connectors when establishing connections to a data source or project, such as database accounts and passwords. It is also used to enter your email account information if you would like to receive email messages when your copy jobs and scan jobs complete.

The User Setup Wizard is accessed from the OpenSpirit Desktop by clicking on the User Setup Wizard tool bar icon  or by choosing the ***Tools > DataBrowser > User Setup Wizard*** menu item. The User Setup Wizard also opens automatically when starting the OpenSpirit Data Selector if it has never run to completion.

Automatic opening of the wizard when starting the Data Selector ceases once the wizard has been dismissed by pressing its ***Ok*** button.

The User Setup Wizard is composed of three panels. One panel is used to enter the default host and account used to run data connectors on each operating system platform. The second panel is used to enter data source specific settings. The third panel is optionally used to enter email settings. Press the ***Ok*** button to dismiss the User Setup Wizard once the settings have been entered.

The following sections of this help guide describe the three wizard panels.

# Host Account Settings

OpenSpirit has the capability to remotely start application data connector processes (GeoFrame, OpenWorks, EPOS, etc.) to run on a different Linux host. This capability is commonly used when running applications on Windows. The Host Account Settings panel is used to provide OpenSpirit with the host, account, and password information needed to start data connector processes to service requests for data made by OpenSpirit enabled applications.

Currently Linux is the only operating system platform that the OpenSpirit framework can remotely start data connector processes on. Remote process creation on hosts running a Windows operating system is not supported.


Data connectors can be remotely started on a Windows host by manually starting an OpenSpirit Locator on the remote host. Locators are manually starting using the ***locatorservice.bat*** script which can be found in the ***bin\etc*** folder of an OpenSpirit Windows installation. The Locator must be run using the same Windows account that will be requesting the data. Locator processes that are started manually do not automatically time out. Care should be taken to insure the Locator process was started in a way that can survive the user logging out of the remote computer and all resources required by the data connector processes that will be started by the Locator are available, such as mounted network drives containing project data.

The appearance of the Host Account Settings panel will vary depending on the Remote Startup Method setting selected by your OpenSpirit administrator when configuring your OpenSpirit master installation. The possible Remote Startup Methods are described in the following table.

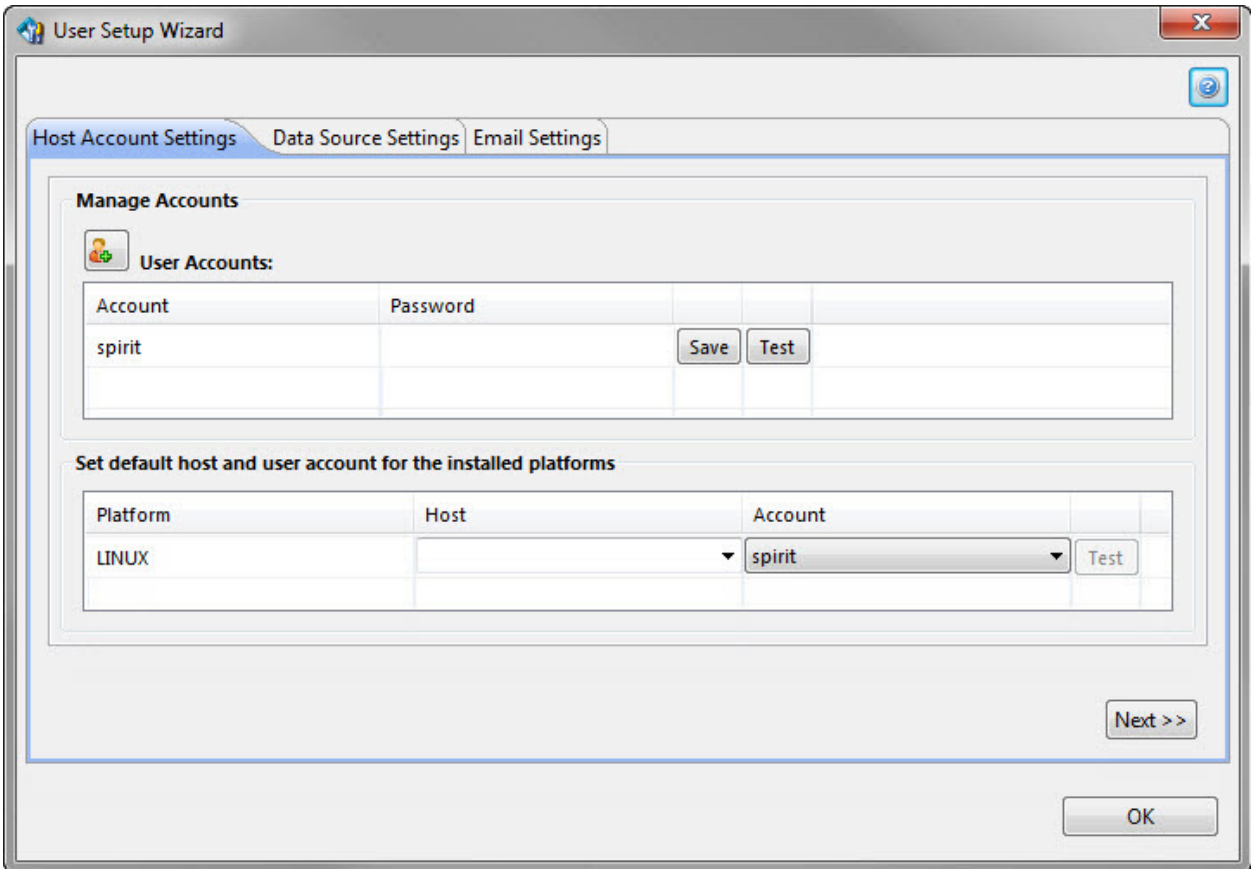
| Remote Startup Method | Startup Method Description |
|---|---|
| **SSH with Password Authentication** | Processes are started using the Secure Shell network protocol using account name and password authentication. Account passwords entered into the User Setup Wizard are encrypted and saved by the OpenSpirit framework. The passwords are then available whenever the framework needs to create a new process to honor a data connection request. |
| **SSH with Password Authentication (interactive)** | Processes are started using the Secure Shell network protocol using account name and password authentication. Passwords are not entered into the User Setup Wizard. Users are prompted for the account password when the OpenSpirit framework needs to create a new process to honor a data connection request.<br>  Any OpenSpirit Scan Utility or Copy Manager jobs that are scheduled to run when the user is not available to respond to a password prompt will fail. You should make sure an OpenSpirit Process Starter, also know as a Locator, is already running without a time out on any host computers that are needed by the job. |

| Remote Startup Method | Startup Method Description |
|---|---|
| **REXEC** | Processes are started using the Remote Process Execution network protocol using account name and password authentication. Account passwords entered into the User Setup Wizard are encrypted and saved by the OpenSpirit framework. The passwords are then available whenever the framework needs to create a new process to honor a data connection request. |
| **REXEC (interactive)** | Processes are started using the Remote Process Execution network protocol using account name and password authentication. Passwords are not entered into the User Setup Wizard. Users are prompted for the account password when the OpenSpirit framework needs to create a new process to honor a data connection request<br>  Any OpenSpirit Scan Utility or Copy Manager jobs that are scheduled to run when the user is not available to respond to a password prompt will fail. You should make sure an OpenSpirit Process Starter, also known as a Locator, is already running without a time out on any host computers that are needed by the job. |
| **External Executable** | This startup method delegates the job of starting processes to a program or script that is external to OpenSpirit. The external executable will most commonly use Kerberos or SSH with public key authentication which will not require a password. |

The following sections describe the three different appearances of the Host Account Settings panel determined by the Remote Startup Method setting of your OpenSpirit configuration.

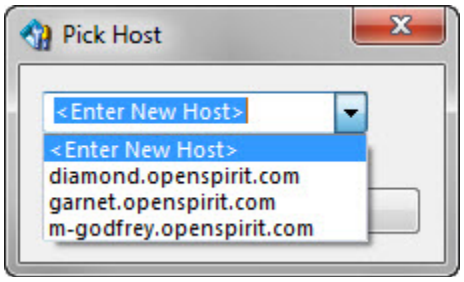
# Appearance when using SSH or REXEC with saved password authentication

The Host Account Settings panel of the User Setup Wizard contains a user accounts section and a platform default host and account section when using the SSH with Password Authentication or the REXEC remote startup method.




## User Accounts

The User Accounts section of the Host Account Settings panel is used to provide the account password to be used by the OpenSpirit framework to create data connector processes on a different host computer from the application. Initially the account being used to run the OpenSpirit Desktop appears in the User Accounts list. Enter the account password and press the Save button if the same account name is to be used to run remote data connector processes. It is a good practice to also press the Test button after saving the password. This will open a prompt to select a host computer to use when performing the test. Select one of the available hosts or select the ***<Enter New Host>*** option to type in the name of a different host. It is recommended to perform the test using the same host that will be used to run data connectors.

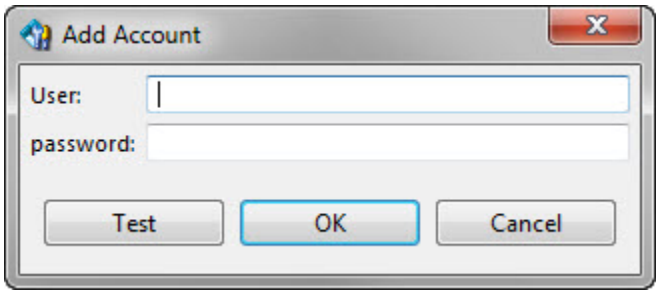


The ***<Enter New Host>*** option to type in a new host name will not appear if your OpenSpirit installation was configured to not allow host discovery. Consult with your OpenSpirit administrator if host discovery has been disabled and the host you would like to use does not appear in the host selection list.

The test button will change to a green check if the test succeeds. An error message will appear and the test button will change to a red stop sign if the test fails. Re-enter the password and press the Save button followed by the Test button to correct the password error. Consult your OpenSpirit administrator if you are unable to successfully pass the test. There may be an IT infrastructure problem preventing the remote protocol from working on the host selected to perform the test.

Additional accounts can be added to the account list if it is necessary to run a data connector using a different account. This is done by clicking on the add account icon. This will open a window that can be used to enter the user name and password of another account that you would like to use to run data connector processes.

The Add Account window is not creating a new account. It is merely allowing you to tell the OpenSpirit framework about the existence of an existing account.

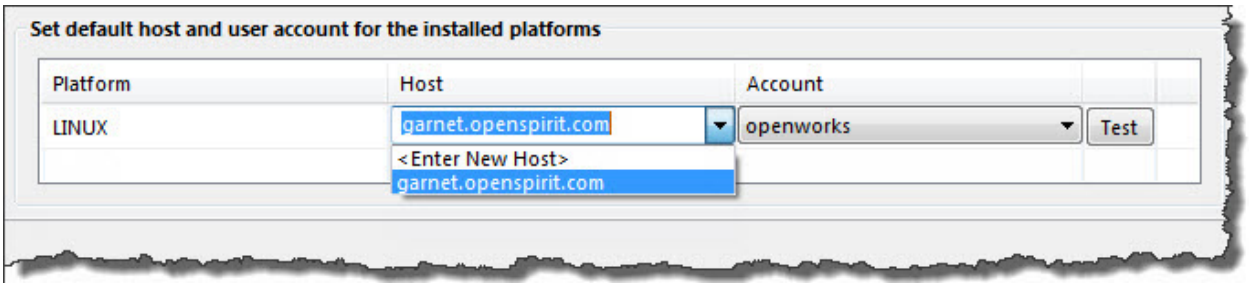



The Test button on the Add Account window works the same as the test button on the Host Account Settings account list.

Any accounts added to the account list using the Add Account window will be forgotten by the OpenSpirit framework if not used as a default host account or if not used for a specific data source on the Data Source Settings panel. Unused accounts will disappear from the account list when the User Setup Wizard is dismissed.

## Default Host and Account

The Default Host and Account section of the Host Account Settings panel is used to select the host and the account to use as your default for each of the supported operating system platforms used at your site.

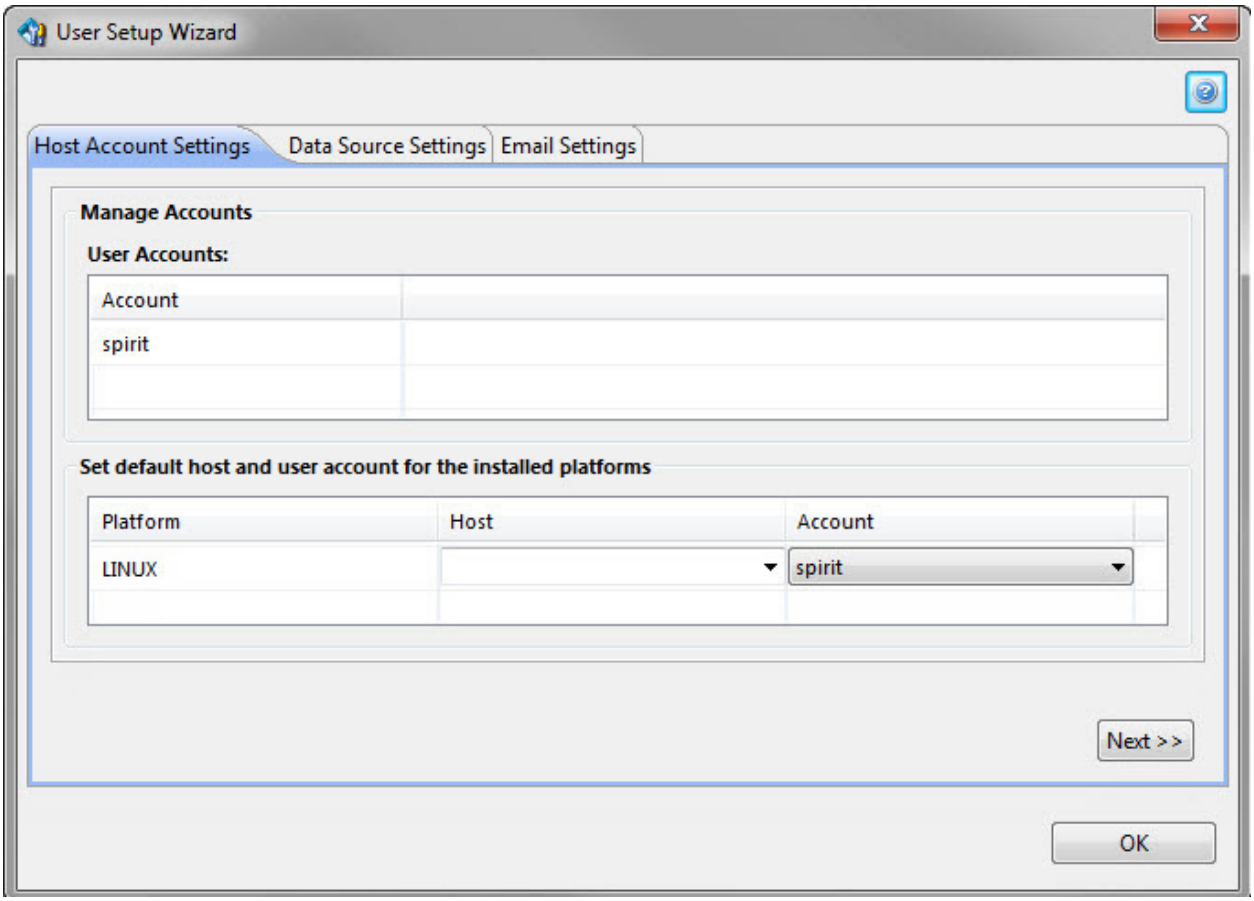



Select a host and account for each of the listed platforms. OpenSpirit must be installed and configured on a platform for it to appear in the list. It is good practice to click on the Test button for each default. The test button works the same as the test button on the Host Account Settings account list except there will not be a host selection prompt.

The option to type in a new host name will not appear if your OpenSpirit installation was configured to not allow host discovery. Consult with your OpenSpirit administrator if host discovery has been disabled and the host you would like to use does not appear in the host selection list.

## Appearance when using SSH or REXEC with interactive password authentication

The Host Account Settings panel of the User Setup Wizard contains a user accounts section and a platform default host and account section when using the SSH with Password Authentication (interactive) or the REXEC (interactive) remote startup method.




## User Accounts

The User Accounts section of the Host Account Settings panel differs from the appearance described in the previous section in that it does not provide the ability to add additional accounts to the account list. Another difference is the absence of a password entry field and associated save and test buttons. Data connector processes must be run under the same account used to run applications.

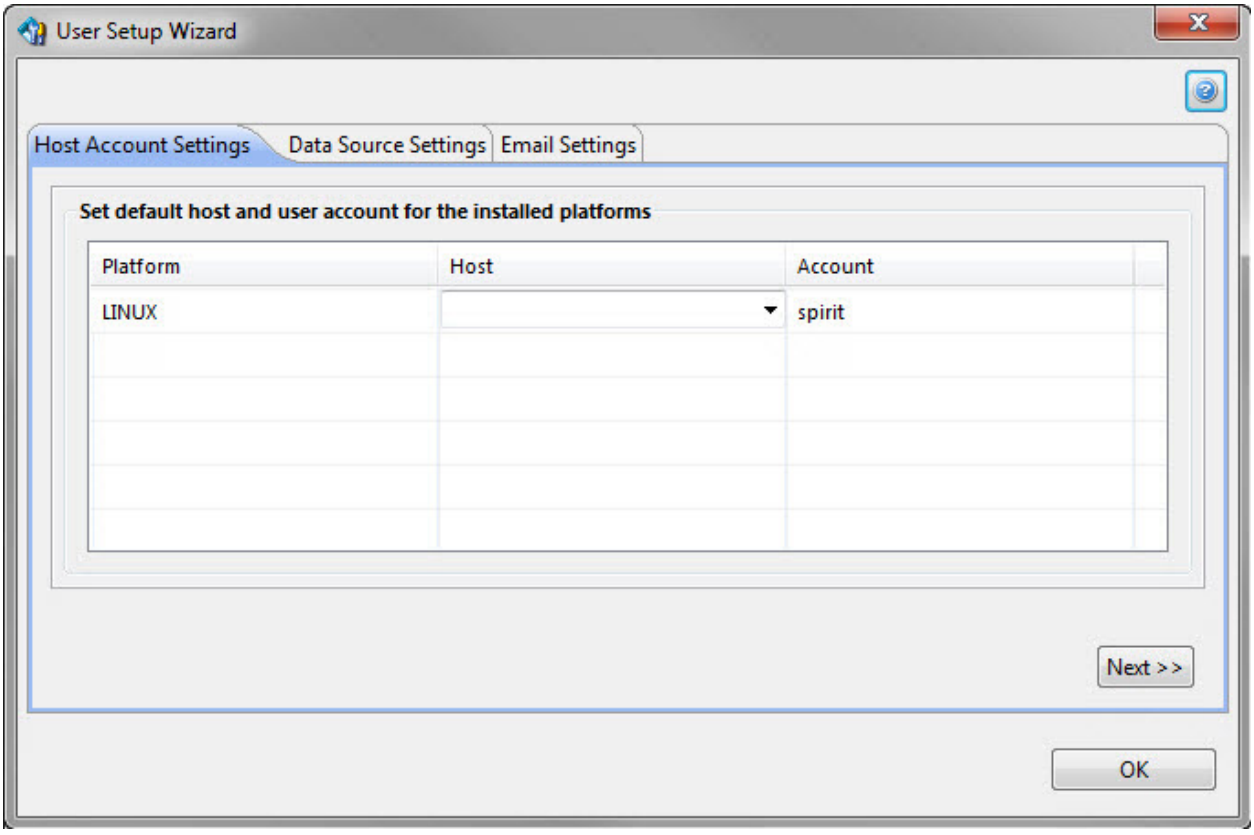
The account list may contain a second account if your OpenSpirit user account was assigned a secondary account. Secondary accounts may also be used to run data connector processes. Refer to the help documentation for the User Manager tool for information about secondary accounts.

## Default Host and Account

The Default Host and Account section of the Host Account Settings panel is identical to the appearance described in the previous section with the exception of the absence of the test button. Otherwise its usage and behavior is the same.

# Appearance when using External Executable

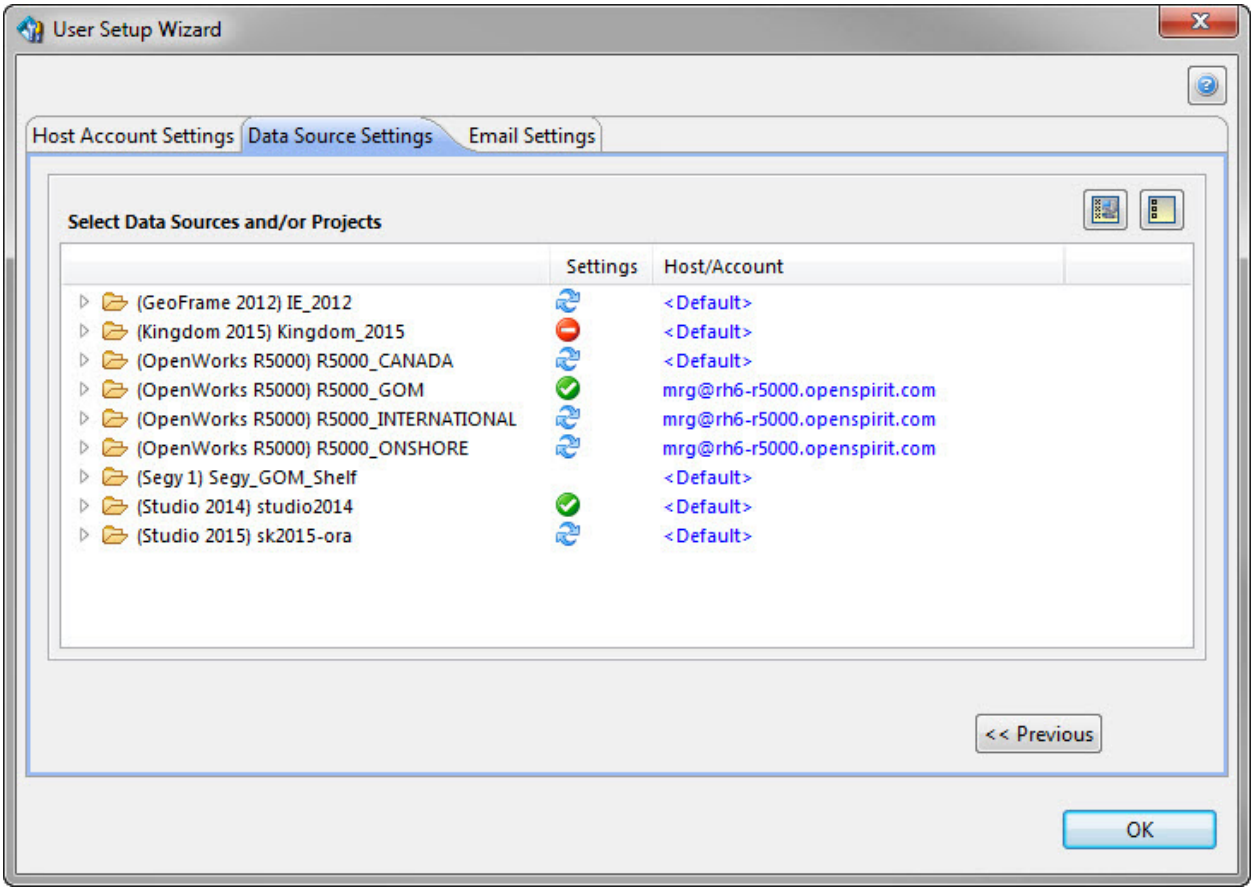
The Host Account Settings panel of the User Setup Wizard does not contain a user accounts section when using the External Executable remote startup method. The panel only allows selection of the host to use for each platform.




A Next >> button is provided in the bottom right corner of the Host Account Settings panel for proceeding to the next step in the wizard. Clicking on the next button will navigate to the Data Source Settings panel.

# Data Source Settings

The Data Source Settings panel of the User Setup Wizard is used to manage data source specific credentials. It can also be used to override the default host and account used for specific data sources.




## Data Source Credentials

Credentials are needed to access some OpenSpirit data sources. Some credentials are optional and some are mandatory. Some OpenSpirit data sources do not have any credentials. Credentials are entered by clicking on the icon in the Settings column next to a data source that has at least one credential.

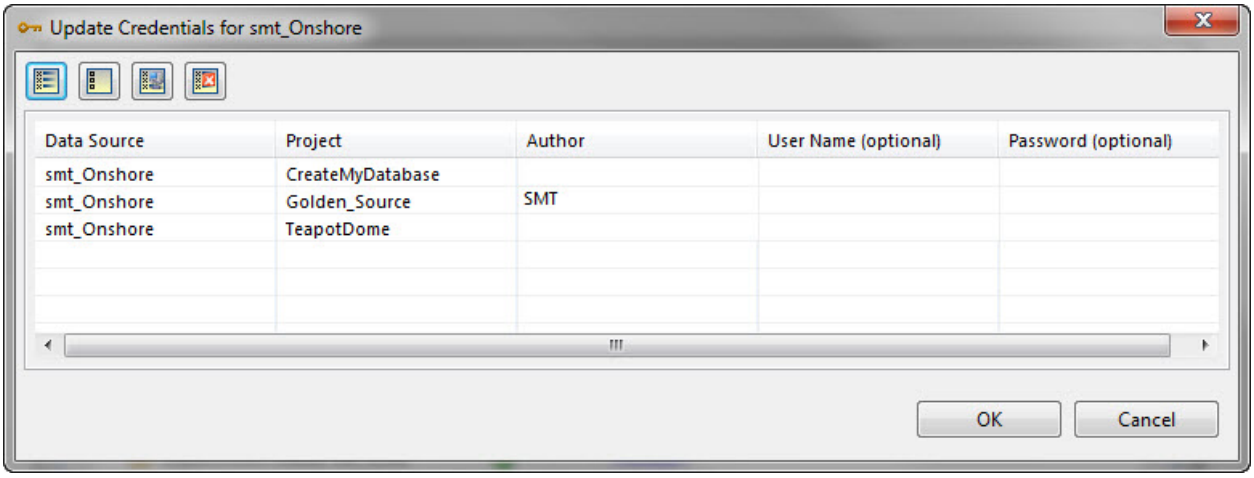
The account selected in the Host/Account setting of OpenWorks, Studio, and GeoFrame data sources will determine the projects that are shown in the Data Source Settings panel. You should select the account that will be used to run the data connector before entering any data source credentials for OpenWorks, Studio, or GeoFrame data sources.

Data sources with no credentials will not have any icon in the Settings column. The Segy data source shown in the image above is an example of a data source that does not have any required or optional credentials.

A blue refresh icon next to a data source indicates that a credentials check has not been performed. Click on the refresh icon or on the project list expansion arrow to perform a missing credentials check for the data source.

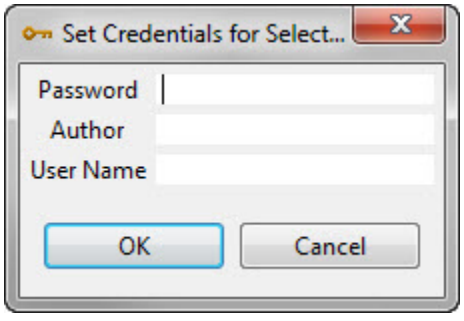
A green check mark settings icon next to a data source indicates that all mandatory credentials needed to access the data source have been entered. Data sources with optional credentials, or with mandatory credentials that have default values are also shown with a green check mark icon.

A red horizontal bar settings icon is shown next to data sources having one or more mandatory credential that has not been entered. The missing credentials must be entered prior to accessing these data sources. Click on the red horizontal bar icon to display the settings window used to enter the missing mandatory credentials.




Enter the missing credentials required by the data source and press the ***Ok*** button.

Data sources that require credentials at the project level will list all accessible projects in their credentials window. The same credential values can be entered for multiple projects by selecting the projects you wish to assign a credential value to and pressing the ***Set for Selected*** icon in the credential window tool bar. This will open a window that can be used to enter credential values that will be applied to all selected projects.



Pressing the ***Clear credentials for selected rows*** icon  in the credential window tool bar will remove all credentials previously entered for all selected projects.

 Credential values are not validated at the time they are entered. Data source credentials are validated when a connection to the data source is attempted. This usually occurs when selecting the data source for display in the OpenSpirit Data Selector.

The following table lists the credentials defined for each supported OpenSpirit data source type.

| Data Source Type | Credential | Credential Scope | Required? | Description |
|---|---|---|---|---|
| **EPOS** | Preferred WellDB for write | project | maybe | This credential is only used when the ***Use EPOS projects*** option is enabled in your EPOS 4 data source configuration and if the EPOS project contains more than one well database. Under these conditions this credential is required. The credential is not required and is ignored if either of these conditions are not true. The credential should contain the name of the well database that new data should be written to. |
| | Preferred WellDB for read | project | no | This credential is only used when the ***Use EPOS projects*** option is enabled in your EPOS 4 data source configuration and if the EPOS project contains more than one well database. The credential is ignored if either of these conditions are not true. The credential should contain the name of the well database that data should be read from. Data will be read from all well databases in the EPOS project if this credential is not present. |
| **GeoFrame** | Password | project | yes | GeoFrame project password. Companies that have a convention of using the project name as the password can enable defaulting the password to the project name which will free the user from having to supply the project password credential. Defaulting is enabled using the ***Use project name as the default project password*** option when configuring your GeoFrame data source. |
| **Kingdom** | Author | project | yes | The Kingdom author to use when connecting to the Kingdom project. |
| | User Name | project | maybe | The Kingdom database user name. This credential is required if the Kingdom project is stored in Oracle or SQL Server. |

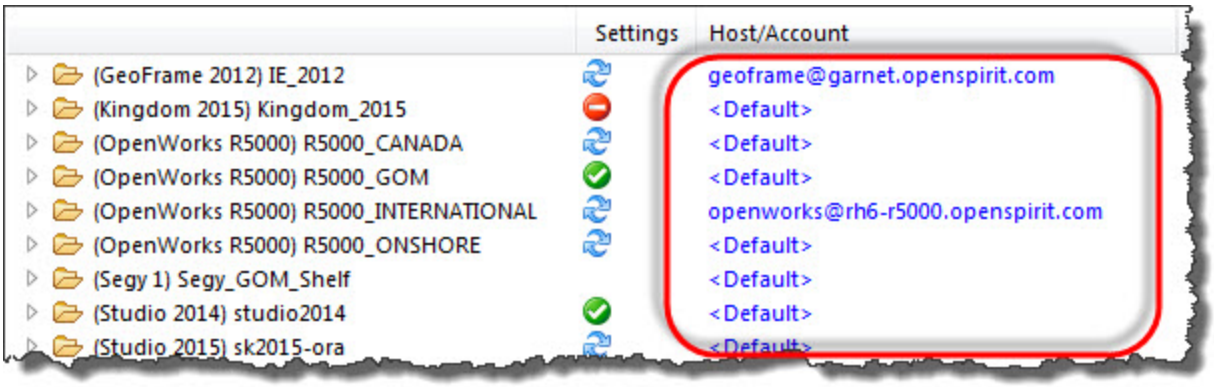
| Data Source Type | Credential | Credential Scope | Required? | Description |
|---|---|---|---|---|
| | Password | project | maybe | The Kingdom database password. This credential is required if the Kingdom project is stored in Oracle or SQL Server. |
| **OpenWorks** | Interpreter | project | no | This credential is used to optionally establish the OpenWorks interpreter to be used when manipulating data in an OpenWorks project. You are not required to select an interpreter, but are strongly encouraged to do so if you intend to create any OpenWorks interpretation data in the project.<br>Following outlines the behavior when setting the Interpreter credential:<br>It affects which default Well Velocity to use for a Well.<br>It affects the retrieval of the Color attribute for a GeologicFault/Horizon table since multiple interpreters can have different colors for the same fault/horizon name.<br>It is used to populate the interpreter attribute in the OpenWorks project when inserting into the following tables:<br>EarthModel (only for R5000)<br>GeologicFault<br>HorizonGrid1dProperty<br>HorizonGrid1dSetProperty<br>HorizonGrid2dProperty (seismic and non-seismic grids)<br>LineGeometry2dSet<br>LineGeometry2d<br>SeismicGeometry3d<br>FaultPolylineSet<br>HorizonFaultBoundarySet<br>Horizon |
| | Source Priority | project | no | The Source Priority credential enables you to optionally create and associate a source priority list with the project. A source priority list defines a ordered list of preferred interpreters used when retrieving like data. It is taken into consideration by business logic in the OpenWorks data access libraries. It affects decisions used in determining which well pick is used if picks have the same name but different interpreters. |

| Data Source Type | Credential | Credential Scope | Required? | Description |
|---|---|---|---|---|
| **Petra** | Project Password | project | maybe | The Petra project password. This credential is required if the Petra project has been password protected. |
| **PPDM** | User | data source | yes | The Oracle user account name. This credential may have a default value if your OpenSpirit administrator enabled the ***Use As Default for Users*** option when configuring your PPDM data source. |
| | Password | data source | yes | The Oracle account password. This credential may have a default value if your OpenSpirit administrator enabled the ***Use As Default for Users*** option when configuring your PPDM data source. |
| **Recall** | n/a | | | |
| **SDE** | Account | data source | yes | The SDE (i.e.Oracle) user account name. This credential may have a default value if your OpenSpirit administrator enabled the ***Use As Default for Users*** option when configuring your SDE data source. |
| | Password | data source | yes | The SDE (i.e. Oracle) account password. This credential may have a default value if your OpenSpirit administrator enabled the ***Use As Default for Users*** option when configuring your SDE data source. |
| **SEGY** | n/a | | | |
| **Studio** | User | data source | maybe | The Oracle or SQL Server database account name. This credential is not needed if the Studio data source was configured to use Windows authentication. The user credential determines the projects that will be visible in all OpenSpirit data source selection windows. The data source will appear to not contain any projects until the user and password credentials have been entered and saved. |
| | Password | data source | maybe | The Oracle or SQL Server database account password. This credential is not needed if the Studio data source was configured to use Windows authentication. |

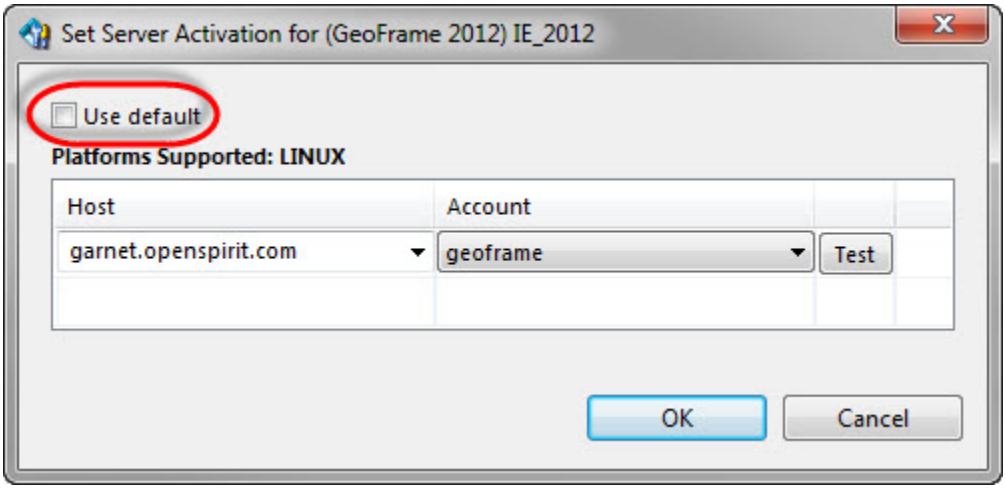
# Data Source Host/Account

The host computer and account used to run OpenSpirit data connector processes is determined by your ***Host/Account*** settings. The host and account that will be used to start

data connector processes for each data source is shown in the ***Host/Account*** column. Data sources with **<Default>** next to the data source will run using the host and account specified on the ***Platform Defaults*** panel.




A different host and/or account can be used for specific data sources by clicking on the **<Default>** hyper link next to the data source. This will open the ***Set Server Activation*** window for the data source.




Un-check the ***Use default*** option to enable selecting a specific host and account combination to use when accessing the data source. The drop down account selection list will contain all the accounts listed on the User Setup Wizard's Host Account Settings panel.

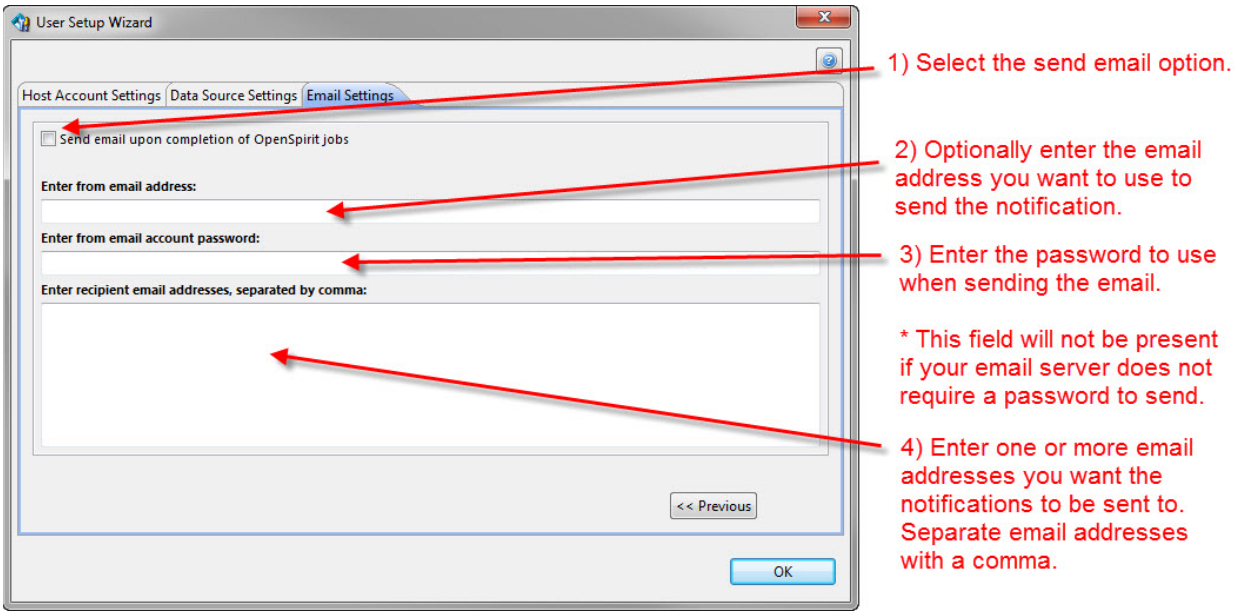
A specific host and account can be set on multiple data sources by selecting multiple data sources in the Data Source Settings window and pressing the ***Set host and account for selected*** icon  in the Data Source Settings panel tool bar. This will open the ***Set Server Activation*** window for setting the host/account for the selected data sources. The selected data sources must be supported to run on a common operating system platform.

# Email Settings

The Email Settings panel of the User Setup Wizard is used to enter email account information that can be used by the Copy Job Manager and Scan Job Manager tools to send email when your copy jobs and scan jobs complete.

The email settings are optional. They are only used if you run Copy Manager or Scan Utility jobs. Do not enter email settings if you do use Copy Manager or Scan Utility but do not want to receive email notifications when your jobs complete.

The Email Settings tab of the User Setup Wizard will be enabled if your OpenSpirit administrator has configured your OpenSpirit master installation's ***SMTP Server*** setting. Contact your OpenSpirit installation administrator if you cannot enter email settings and would like to receive copy or scan job completion email notifications.

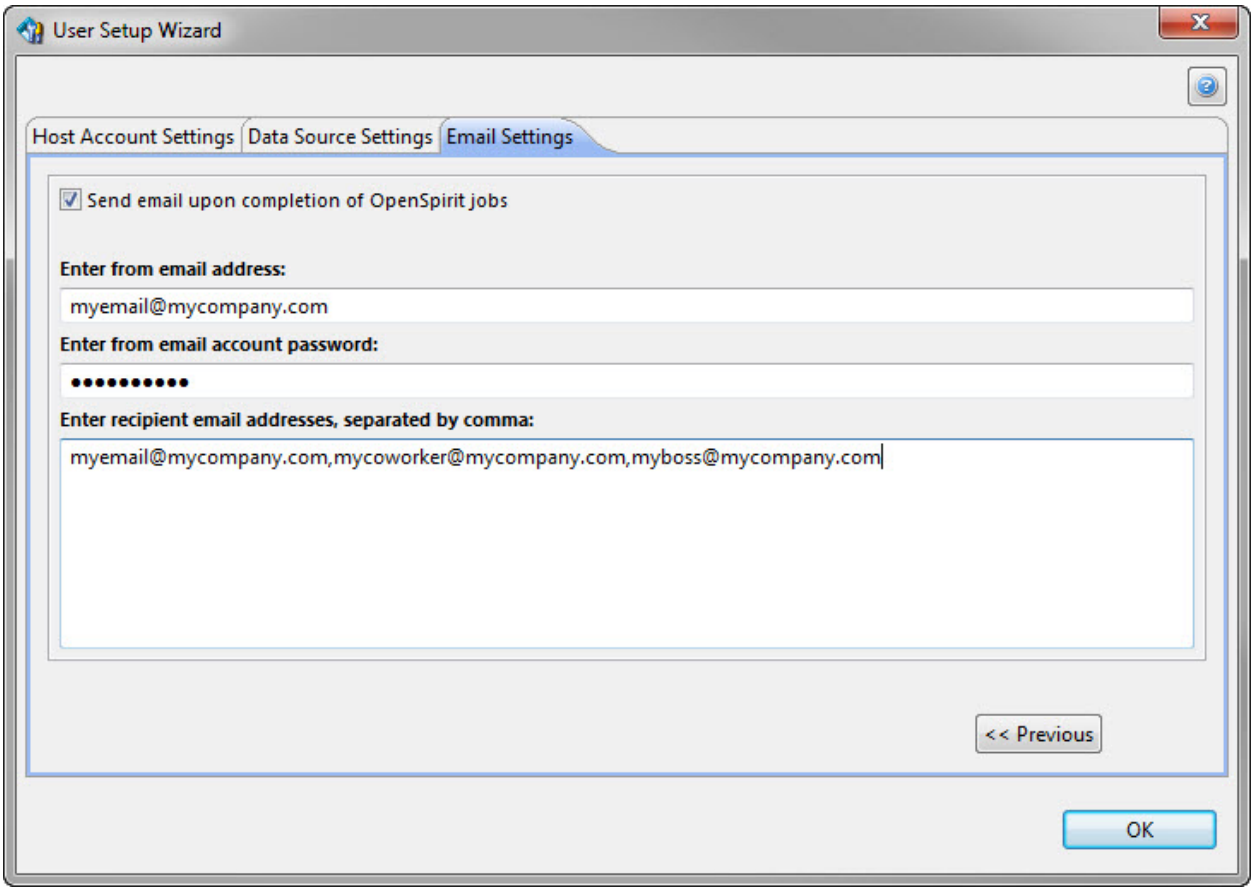



The ***from email address*** is optional. It will be used as the email sender's address if supplied. The sender will default to the address determined by your company's email server if you do not enter a value.

The ***email account password*** field will be present if your OpenSpirit administrator configured your OpenSpirit installation to require an email password to send email. The field will not be visible if a password is not required by your company's email server in order to send email.

At least one email address should be entered in the ***recipient email addresses*** field. Multiple email addresses may be entered using a comma between email addresses.

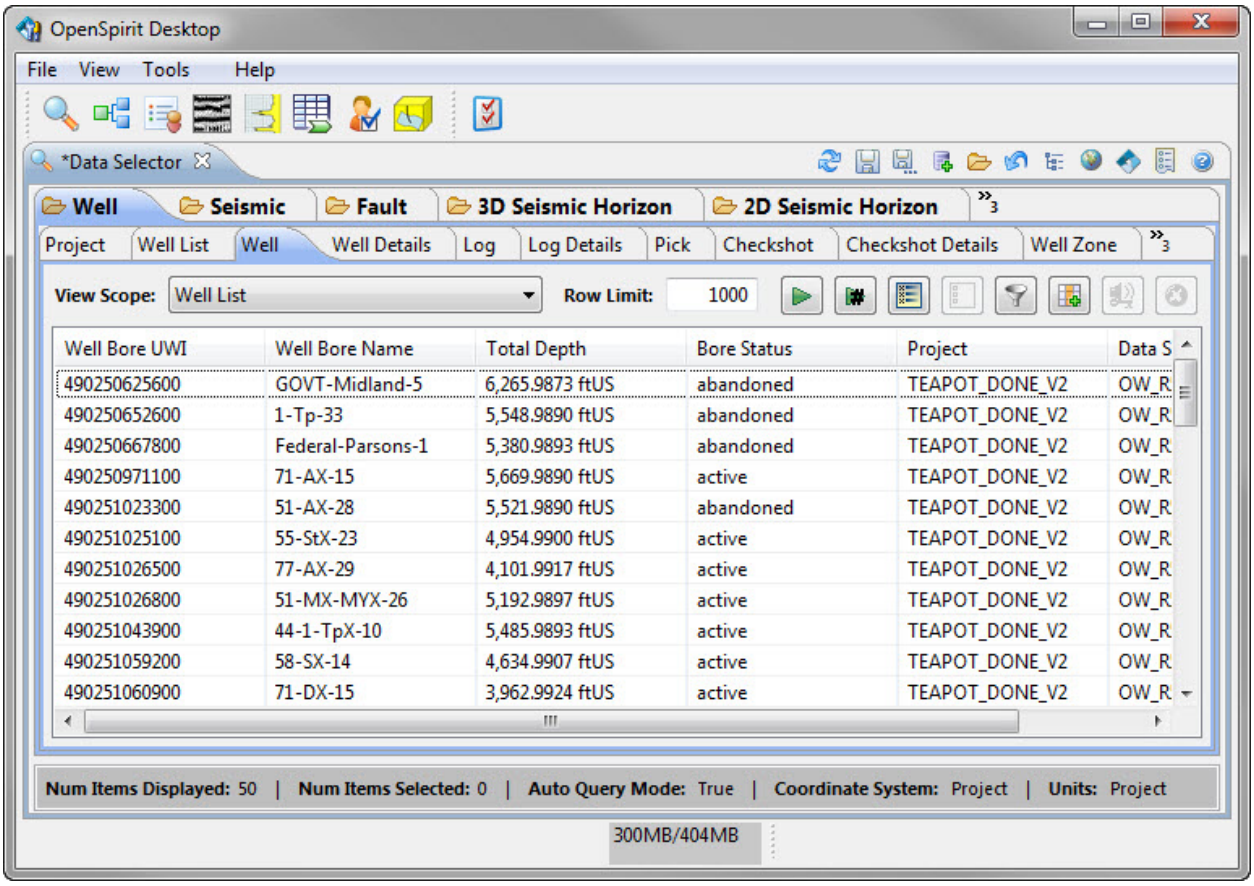
The image below shows an example of a typical completed email settings tab.


User Setup Wizard
Host Account Settings
Data Source Settings
Email Settings
Send email upon completion of OpenSpirit jobs
Enter from email address:
myemail@mycompany.com
Enter from email account password:
Enter recipient email addresses, separated by comma:
myemail@mycompany.com,mycoworker@mycompany.com,myboss@mycompany.com
<< Previous
OK

# Data Selector Overview

The *Data Selector* tool is a data selection and query utility that presents a tabular summary of selected attributes associated with the data types that are supported by the OpenSpirit Framework. The Data Selector can be used to browse data from any data source supported by the OpenSpirit framework. The Data Selector is also used to send data selection events to applications that support listening for OpenSpirit *data selection events*.

This Data Selector help document contains a Getting Started section that provides an overview of the steps needed to quickly get started browsing data in the Data Selector. The Getting Started section is followed by sections that go into more detail about data models and how to use the more advanced features of the Data Selector.

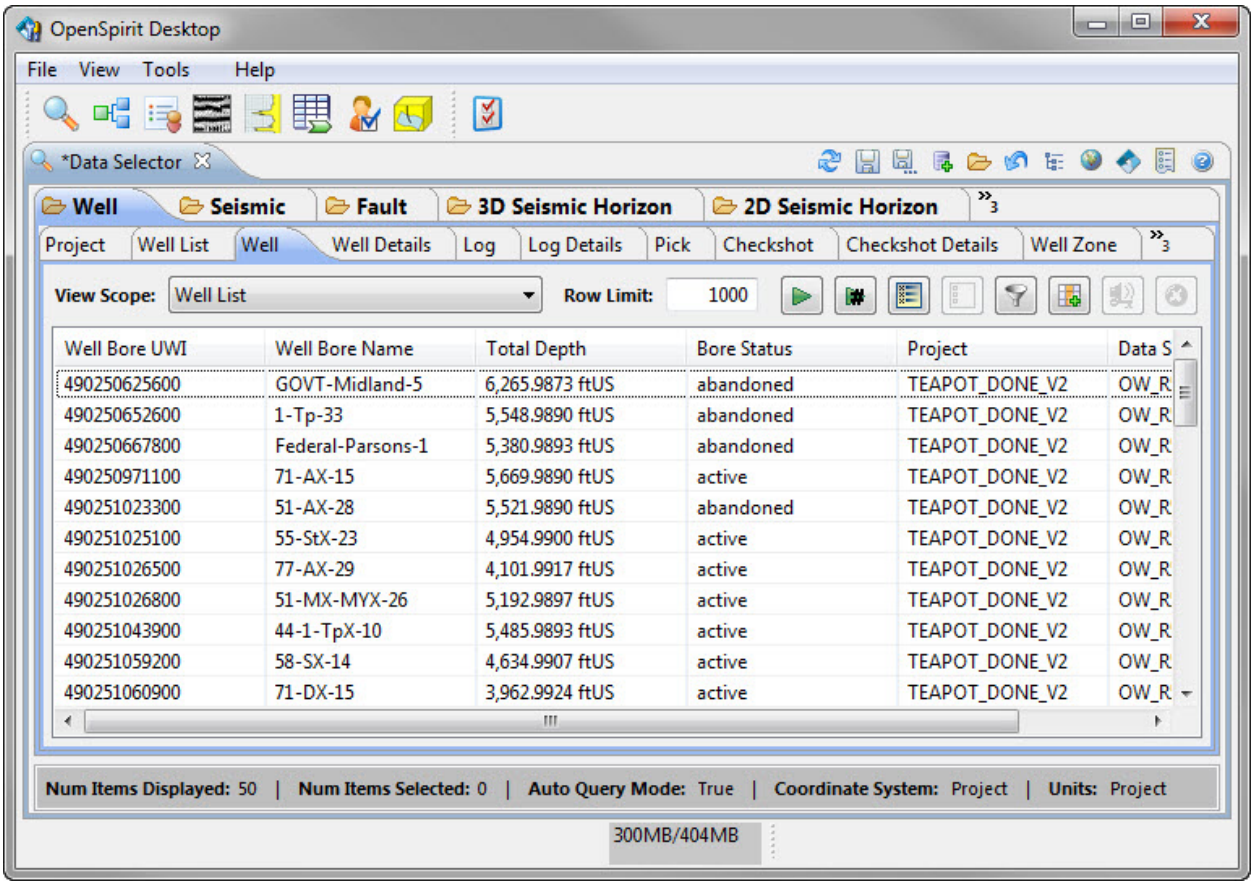



The OpenSpirit Desktop preferences settings window can be used to change various default settings for the data selector.

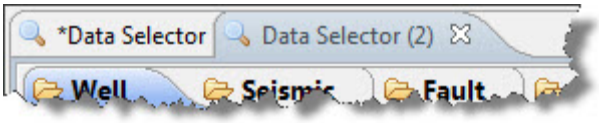
# Getting Started

## Starting the Data Selector

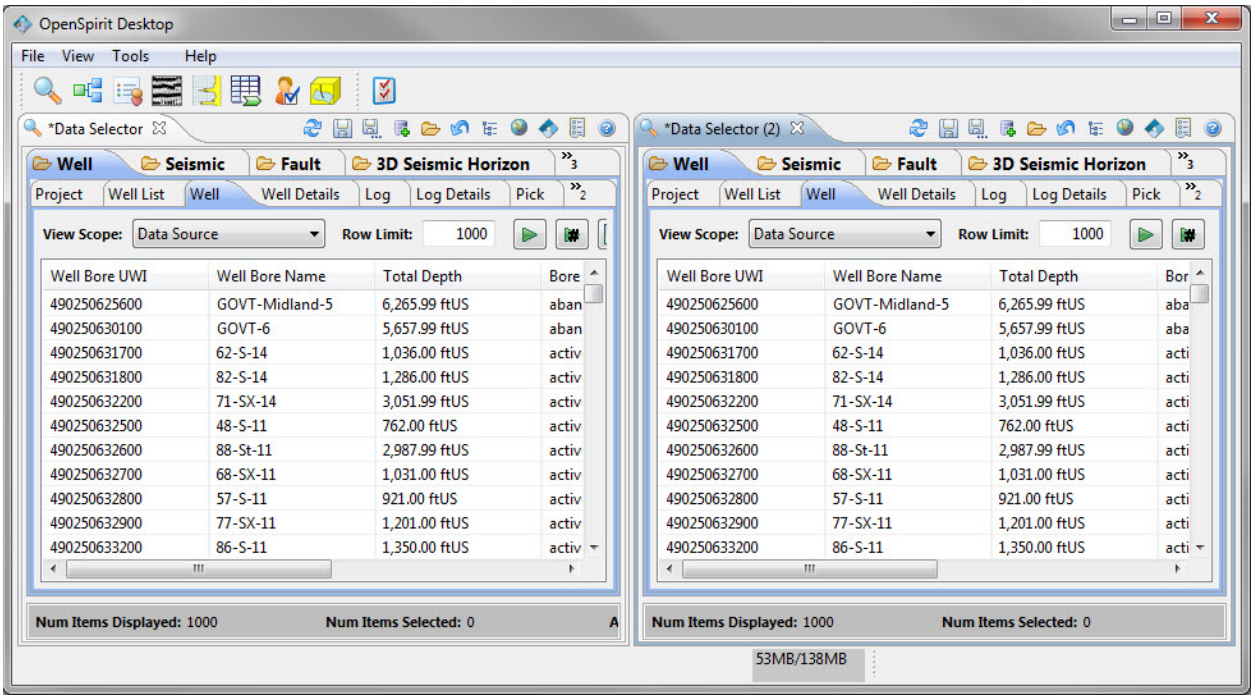
The *Data Selector* tool is accessed from the OpenSpirit Desktop by clicking on the Data Selector tool bar icon or by choosing the ***Tools > Data Browser > Data Selector*** menu item. This will cause a Data Source Selection window to open. The Data Source Selection window is used to select the sources of data that will be available to the Data Selector. The Data Selector tool will open when the Data Source Selection window is closed.




It is possible to open multiple Data Selector windows within the OpenSpirit Desktop. Additional Data Selector windows are opened by clicking on the Data Selector tool bar icon or by choosing the ***Tools > Data Browser > Data Selector*** menu item while a Data Selector window is already visible. The new Data Selector window's tab will show a number is parenthesis that indicates it is an additional Data Selector.

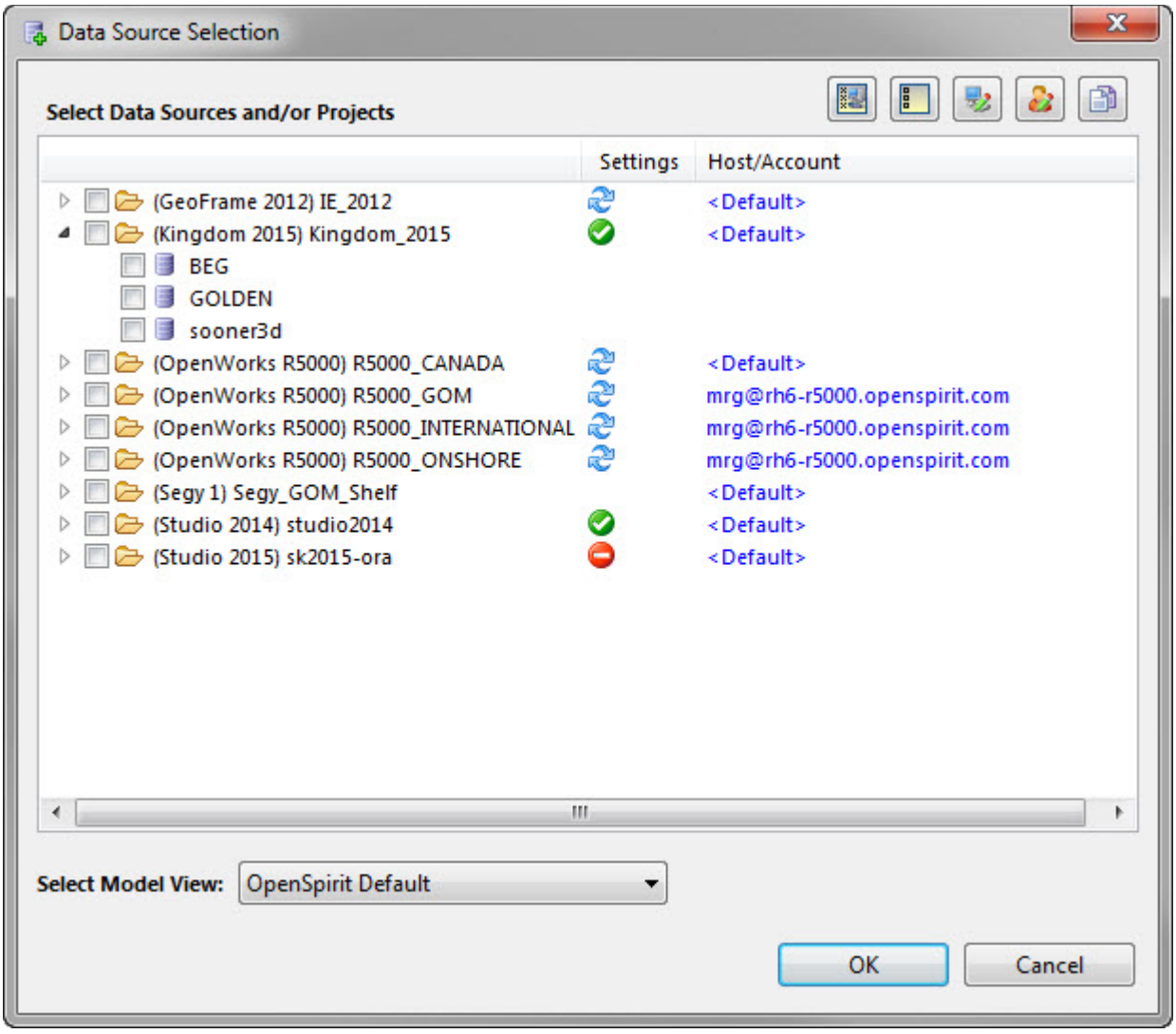


Multiple Data Selector windows are useful for quickly switching between different data source selections or when positioning the windows side by side to compare data from different data sources. See the OpenSpirit Desktop help guide for information about window layout management within the desktop.




# Selecting Data Sources

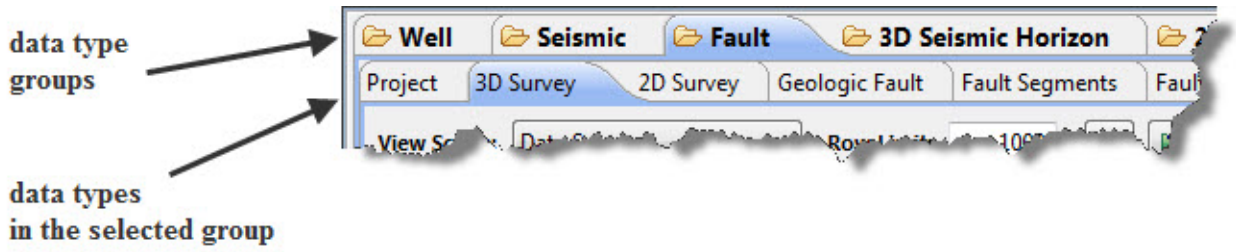
The Data Source Selection window opens automatically when activating the Data Selector tool. The Data Source Selection window is used to select the sources of data that will be queried by the *Data Selector*. It can also be opened by clicking on the Select Data Sources icon in the Data Selector tool bar.



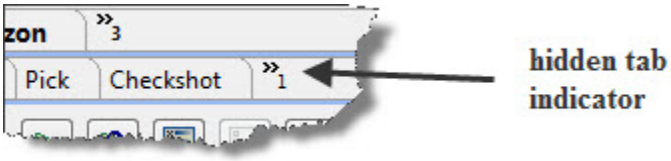

See the Data Source Selection Window section of this guide for details of using the Data Source Selection window.

# Browsing Data

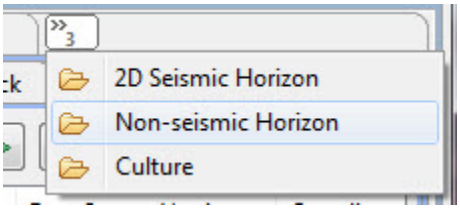
The *Data Selector* presents a tabular view of the data queried from selected data sources and projects. Data types are organized into logical groupings (e.g. Well, Seismic, Culture, etc.) which appear as tabs with bold font across the top of the Data Selector window. Clicking on one of the group tabs causes the data types within the selected group to display in the second row of tabs.




A double right arrow symbol » is displayed to the right of the last visible tab if there are too many tabs to display in the available window width. The number next to the double right arrow symbol indicates how many tabs have been hidden due to insufficient window width.




Clicking on the hidden tab indicator displays a drop down menu which can be used to select any of the hidden tabs.




The data type tabs provide a view of the individual data items that reside in the data sources that were selected from the Data Source Selection window. Each *data type view* has a scope. The scope determines the subset of data that is available for display in the data type view. See the Scoping Views section for more information about data type view scopes.

The data type groups and data types that are available for selection are determined by the *OpenSpirit data model*, *native data model*, or *model view* that was selected in the Data Source Selection window.

# Sending Data Selection Events

The primary use of the OpenSpirit *Data Selector*, in addition to browsing data sources, is to send a selection of one or more data items to another application. This is accomplished using *data selection events* or *drag and drop*. Data selection events are sent by selecting one or more rows in the currently selected *data type view* and clicking on the data selection event send button in the data type view's tool bar. This will send the identity of all selected rows to any application you are running that is currently listening for OpenSpirit data selection events.

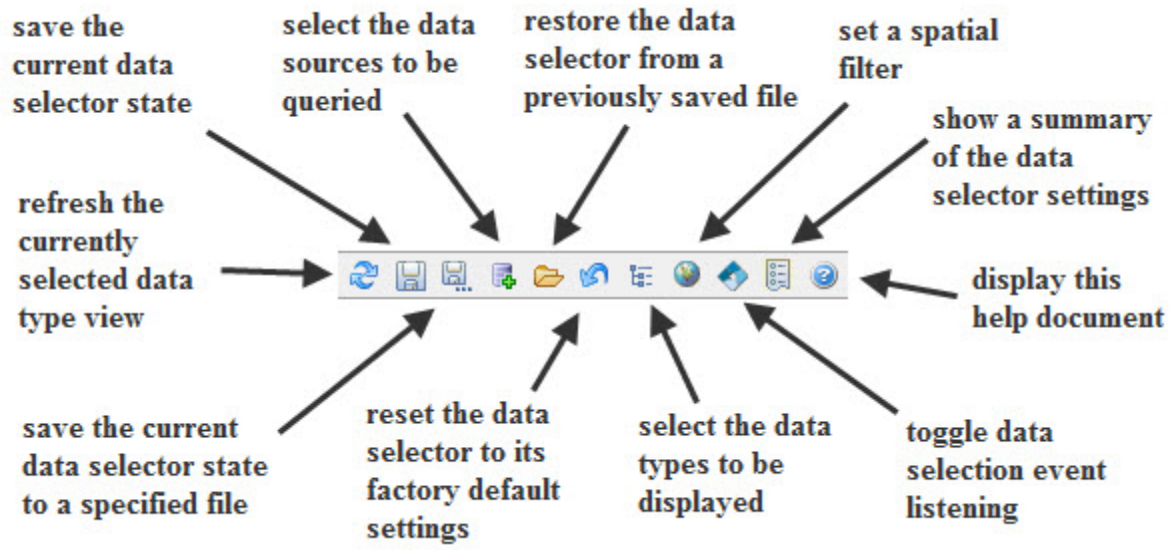
Each application that is listening for data selection events will react to the event in a way appropriate for that application. Each application determines which data type it will listen for and what it will do when the event is received.

 The identity of a row in a data type view is represented by an OpenSpirit *data key*.

# Data Selector Actions

## Data Selector Tool Bar

The *Data Selector* tool bar contains buttons that perform actions that may affect the overall Data Selector. These actions are described in the following sections of this help guide. The tool bar resides in the upper right hand corner of the Data Selector window.




### Refresh Button

The refresh tool bar button will refresh the content of the currently selected data type view. The refresh button produces the same result as pressing the query button on the currently displayed data type view.

### Save Data Selector Button

The save tool bar button saves the current state of the Data Selector to a file. See the Saving the Data Selector State section of this help guide for details.

### Save As Data Selector Button

The save as tool bar button saves the current state of the Data Selector to a file of your choosing. See the Saving the Data Selector State section of this help guide for details.

### Select Data Sources Button

The select data sources tool bar button opens the data source selection window. See the Selecting Data Sources section of this help guide for details.

### Open Data Selector File Button

The open data selector file tool bar button opens a file selection window that is used to select a Data Selector saved state file that has been previously created using the save or save as button. See the Saving the Data Selector State section of this help guide for details.

### Revert Data Selector Button

The revert tool bar button resets the Data Selector to its original factory settings. See the Resetting the Data Selector section of this help guide for details.

### Select Data Types Button

The select data types tool bar button opens the data type selection window used to select the data type views that you want displayed in the Data Selector. See the Selecting Data Types to Display section of this help guide for details.

### Select Spatial Scope Button

The select spatial scope tool bar button opens the spatial scope selection window used to select a bounding box or polygon used to spatially constrain data displayed in the Data Selector. See the Setting a Spatial Scope section of this help guide for details.

### Toggle Event Listening Button

The toggle event listening tool bar button is used to turn listening for events on and off in the Data Selector. The button appears with a lightning bolt when event listening is enabled. The button appears without a lightning bolt when listening is disabled. See the Listening for Data Selection Events section of this help guide for details.

### Data Selector Settings Button

The Data Selector settings tool bar button opens the Data Selector Settings window. See the Data Selector Settings section of this help guide for details.

### Help Button

The help tool bar button is always enabled. Clicking the help button opens this help guide.

## Saving the Data Selector State

The state of the *Data Selector* can be saved to a file so that it can be restored at a later time. The state that is saved includes:

- selected data sources
- selected model view

- coordinate system and units preferences
- displayed data type groups and data types
- data type view column customizations (column order, column display format, etc.)
- data type view scope selections
- data type query filters
- any rows that are selected in any of the data type views

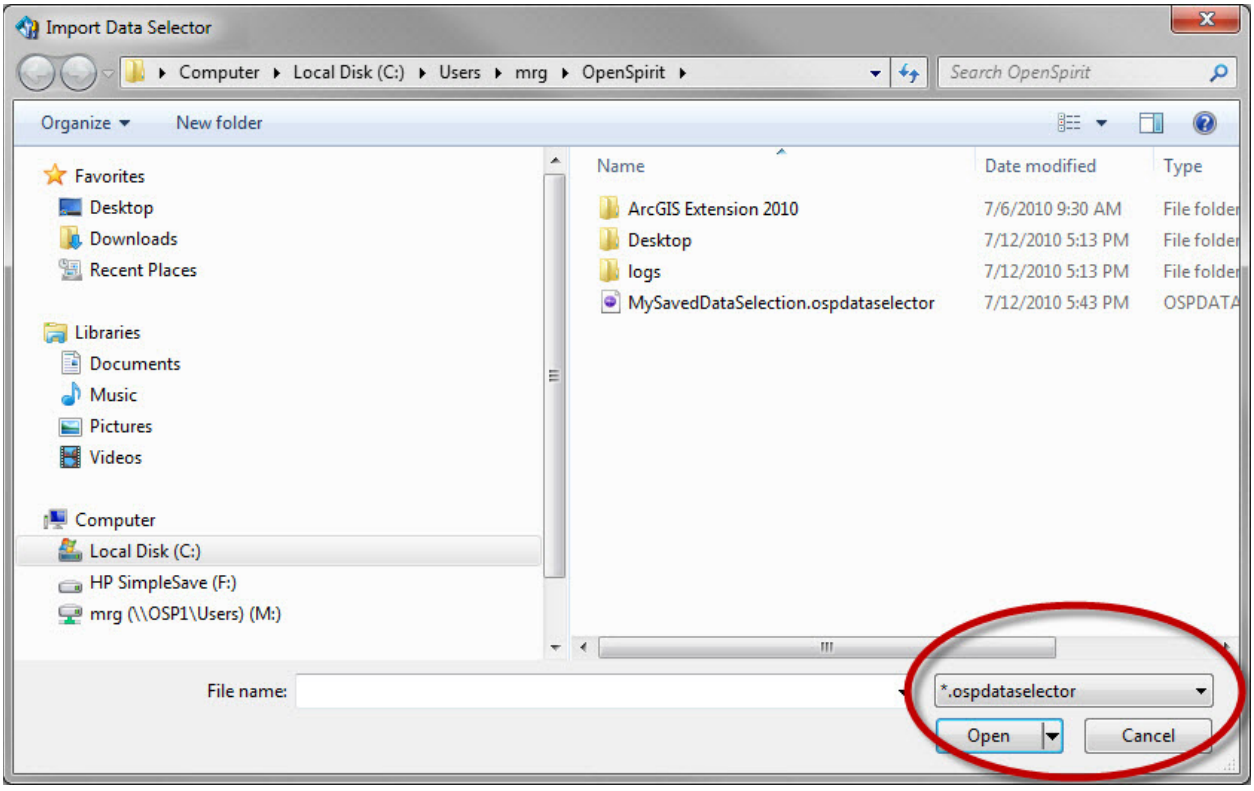
The Data Selector state is saved by clicking on the save icon in the Data Selector tool bar. The Data Selector state will be saved in a file named ***DataSelector.ospdataselector*** in the OpenSpirit folder in your *home directory*.

The state can be saved to a different file by clicking the save as icon in the Data Selector tool bar and entering a new file name in the file selection window that appears.

The Data Selector state can also be saved using the OpenSpirit Desktop's **File > Save** or **File > Save As…** menu items when the Data Selector window is the active window in the OpenSpirit Desktop.

# Restoring the Data Selector State

The Data Selector state can be restored to a previously saved state by clicking on the file open icon in the Data Selector tool bar and selecting a previously saved Data Selector state file having a ***.ospdataselector*** file name extension. The information that is restored is described in the Saving the Data Selector State section of this help guide.



The Data Selector state can also be restored using the OpenSpirit Desktop's **File > Open** menu item. Select a previously saved Data Selector file having an ***.ospdataselector*** file extension.

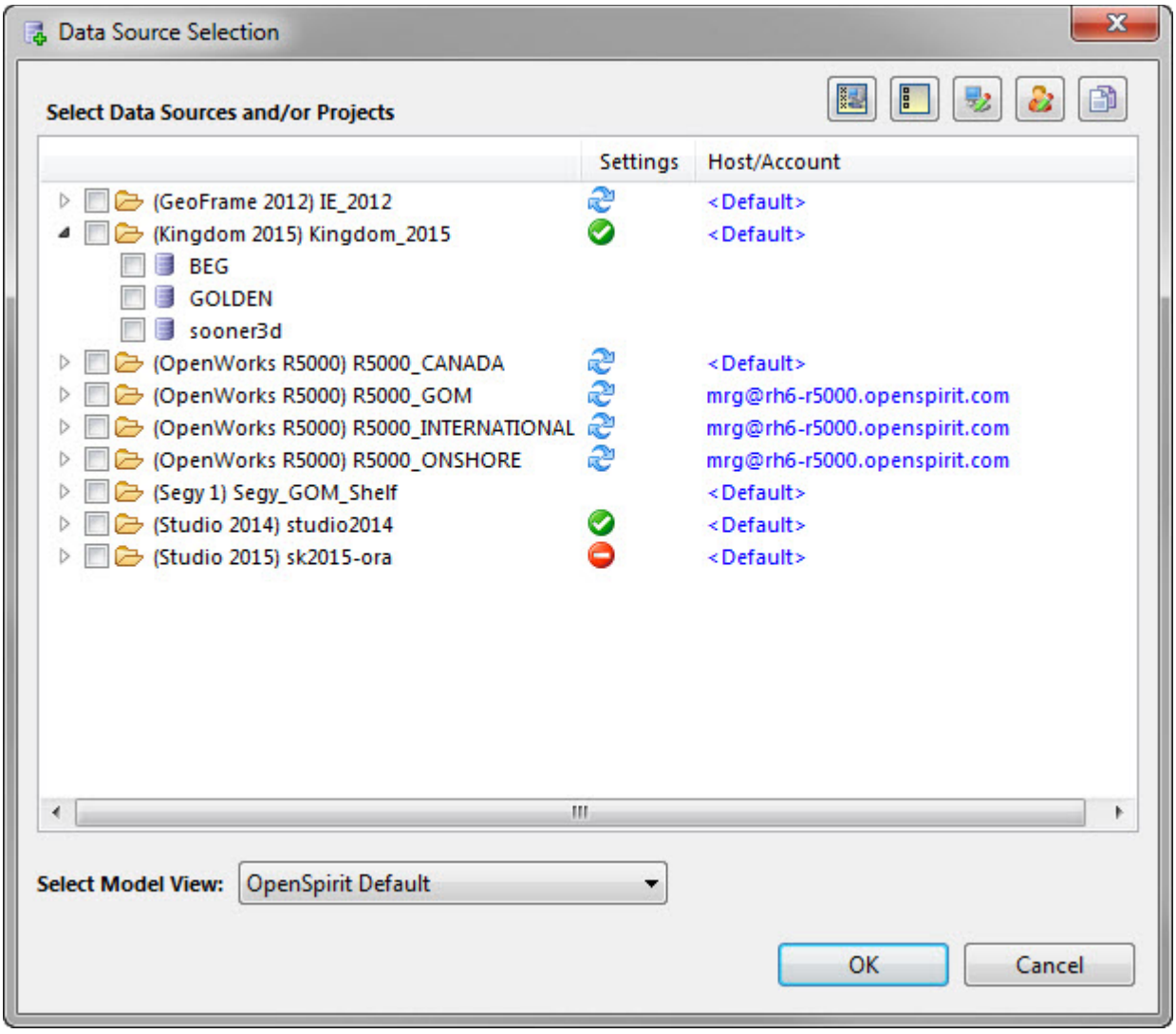
## Resetting the Data Selector

The state of the Data Selector can be reset to its default state by clicking the revert icon  . This will clear out any data source selection and will restore all of the Data Selector settings to the default values.

 You should save the data selector state to a file before clicking the revert icon if you have performed any significant customizations that you don't want to lose.

## Selecting Data Sources

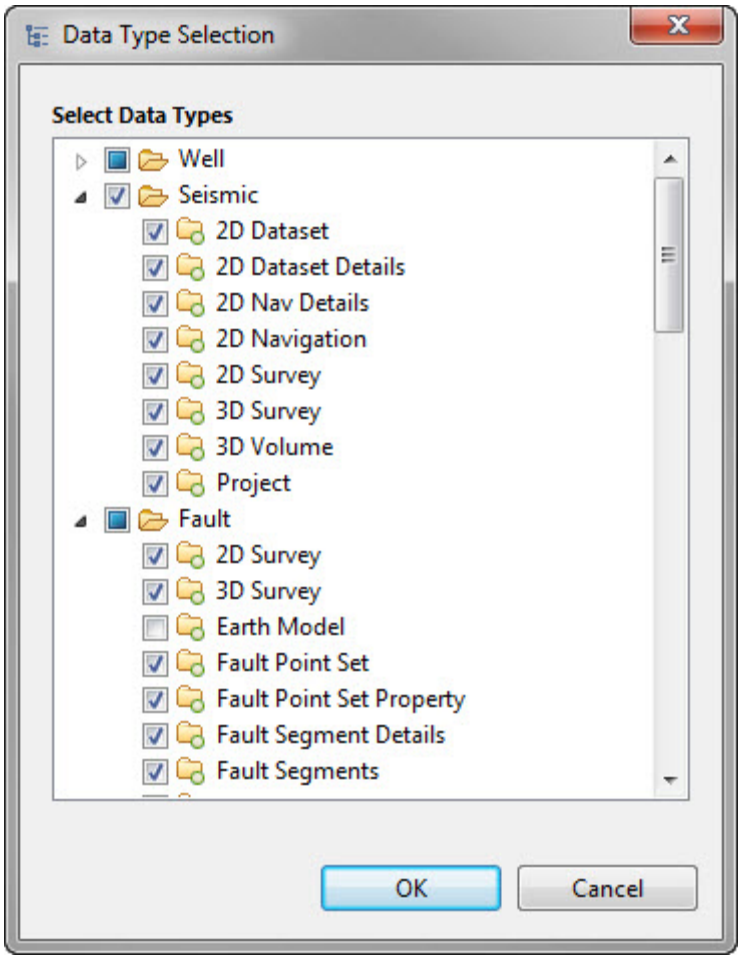
The Data Source Selection window opens automatically when activating the Data Selector tool. The Data Source Selection window is used to select the sources of data that will be queried by the *Data Selector*. It can also be opened by clicking on the Select Data Sources icon  in the Data Selector tool bar.




See the Data Source Selection Window section of this guide for details of using the Data Source Selection window.

# Selecting Data Types to Display

The Data Type Selection window is used to control which data type groups and which data type views are visible in the *Data Selector*. The Data Type Selection window is displayed by clicking on the Select Data Types icon in the Data Selector tool bar.

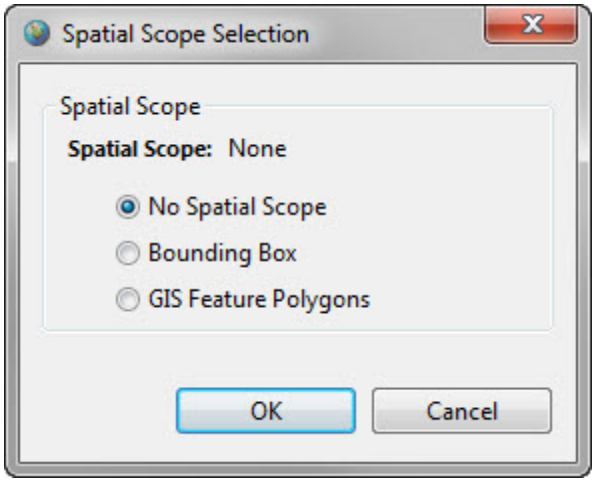



The Data Type Selection window presents the data type groups and data types that are defined in the data model or model view selected in the Data Source Selection window. Select or deselect the data type groups and/or data types that you wish to display in the Data Selector.

## Setting a Spatial Scope

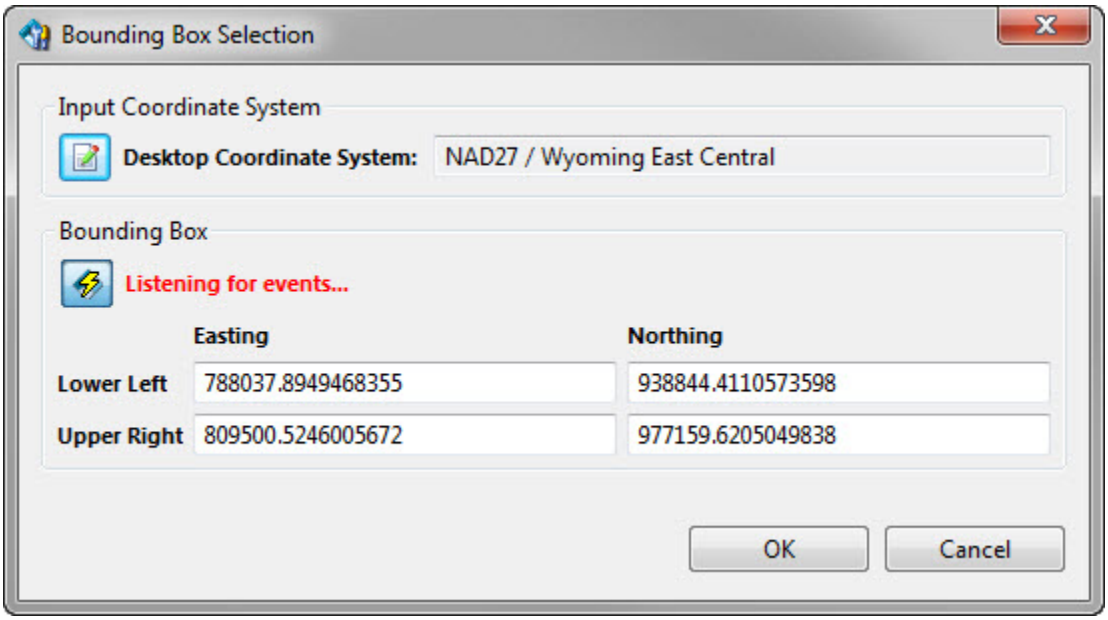
A spatial scope can be set on the Data Selector which can be used to limit the query results using spatial filters. The spatial scope defines a bounding box or a set of polygons that should be used by any spatial filters set on individual data type views. The individual data type spatial filters are controlled using the Query Filter window for data types having one or more spatial attribute.

The Spatial Scope Selection window can be opened by clicking on the Select Spatial Scope icon in the Data Selector tool bar. The Spatial Scope Selection window presents two ways of establishing a spatial filter scope.




## Bounding Box Spatial Scope

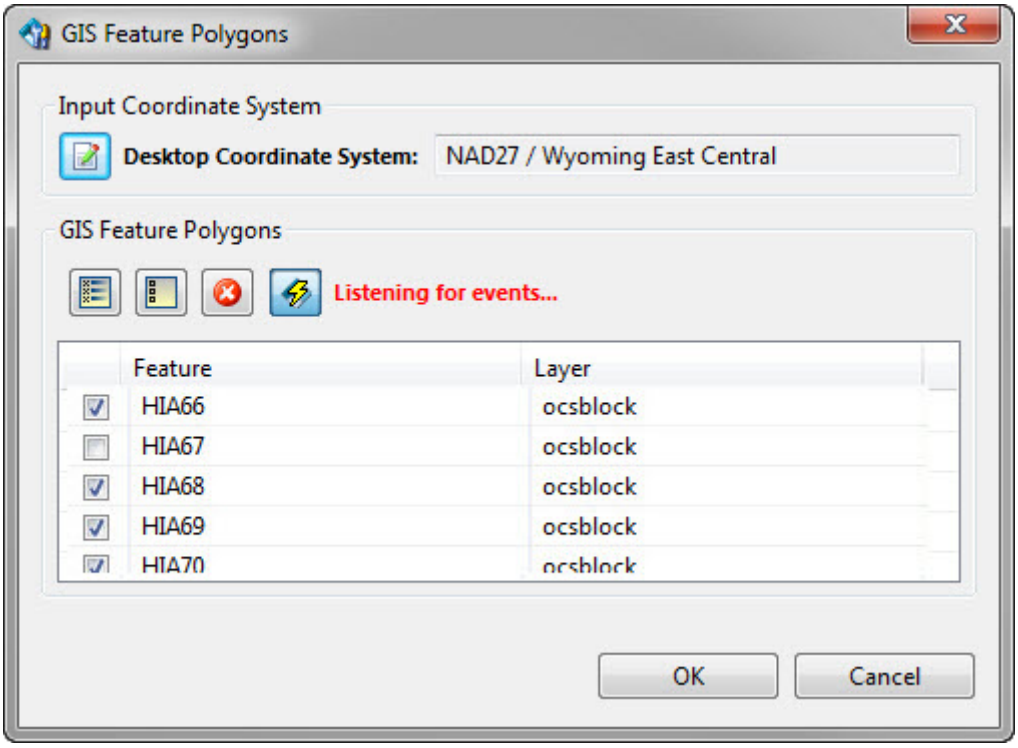
Clicking on the Bounding Box spatial scope option displays a window used to enter a bounding box. The bounding box must be defined relative to the desktop coordinate system preference. A button  is provided as a shortcut for opening the desktop coordinate system preference setting window. A desktop coordinate system preference must be selected before entering the bounding box. The bounding box can be entered once a coordinate system has been selected. It can be entered either by typing in a lower left corner point and an upper right corner point, or it can be entered by sending an OpenSpirit GIS feature selection event from any OpenSpirit enabled application that can send GIS events (e.g. ArcGIS Desktop with TIBCO OpenSpirit Extension for ArcGIS, Petrel with TIBCO OpenSpirit Adapter for Petrel, etc.). A bounding box will be calculated to encompass all of the features in the received GIS feature selection event.



## GIS Feature Polygons Spatial Scope

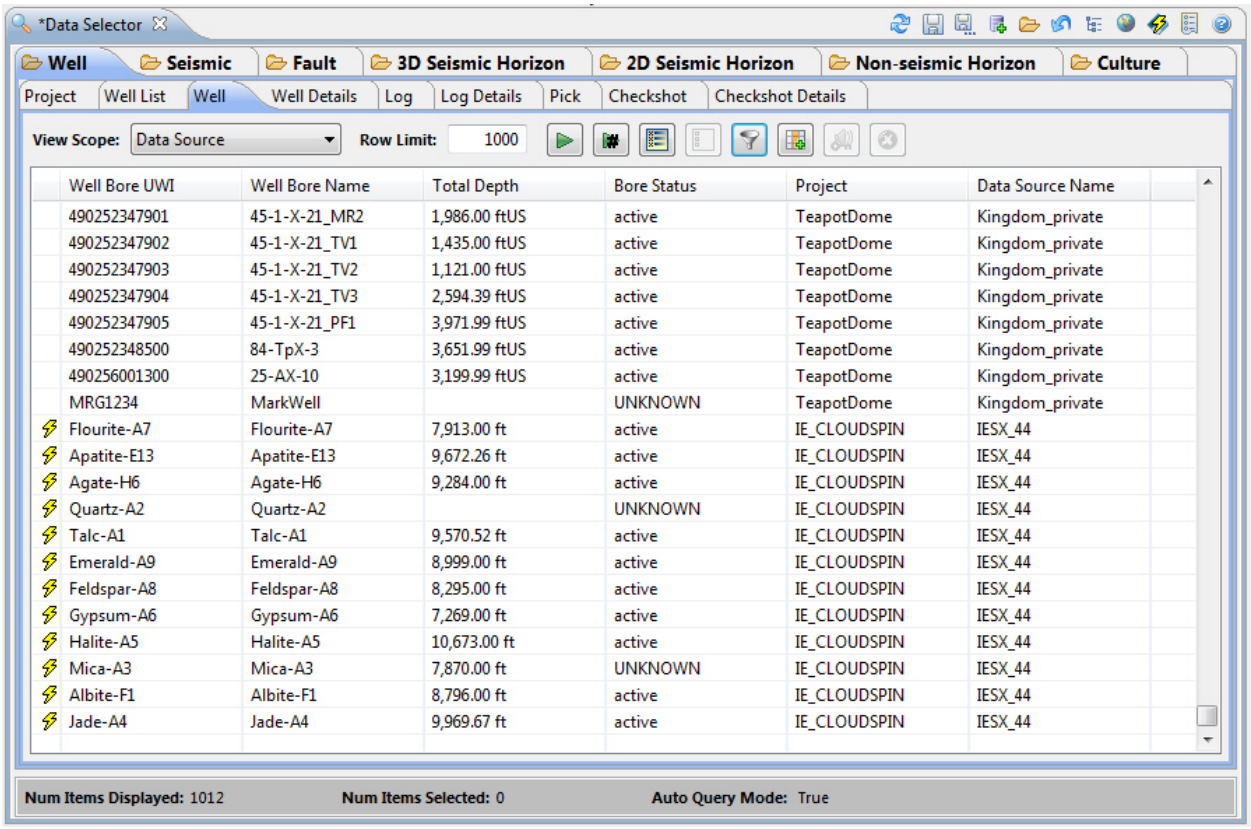
Clicking on the GIS Feature Polygons spatial scope option displays a window used to select one or more polygons to be used as the spatial scope. The polygons must be selected by sending an OpenSpirit GIS feature selection event containing polygon features from any OpenSpirit enabled application that can send GIS events. A desktop coordinate system preference must be set in order to enable listening for GIS feature events. An edit button is provided as a shortcut for opening the desktop coordinate system preference setting window.

GIS event listening will be enabled once a coordinate system preference has been set. Polygon features from received events will be displayed in a table allowing individual polygon features to be selected for inclusion in the spatial scope.

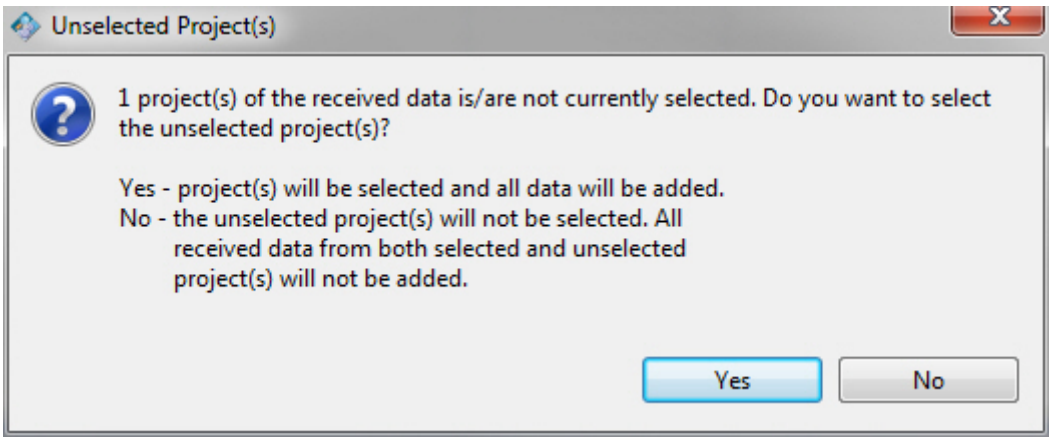



# Listening for Data Selection Events

The Data Selector can listen for data selection events as well as sending data selection events. Data selection event listening is enabled by clicking on the OpenSpirit event listing icon in the Data Selector tool bar. The icon will change to display a lightning bolt to indicate that event listening is currently enabled. Data selection events sent from other applications will cause rows to be added to corresponding data type views in the Data Selector. Rows of data added by data selection event reception appear with a lightning bolt icon in the left most column.



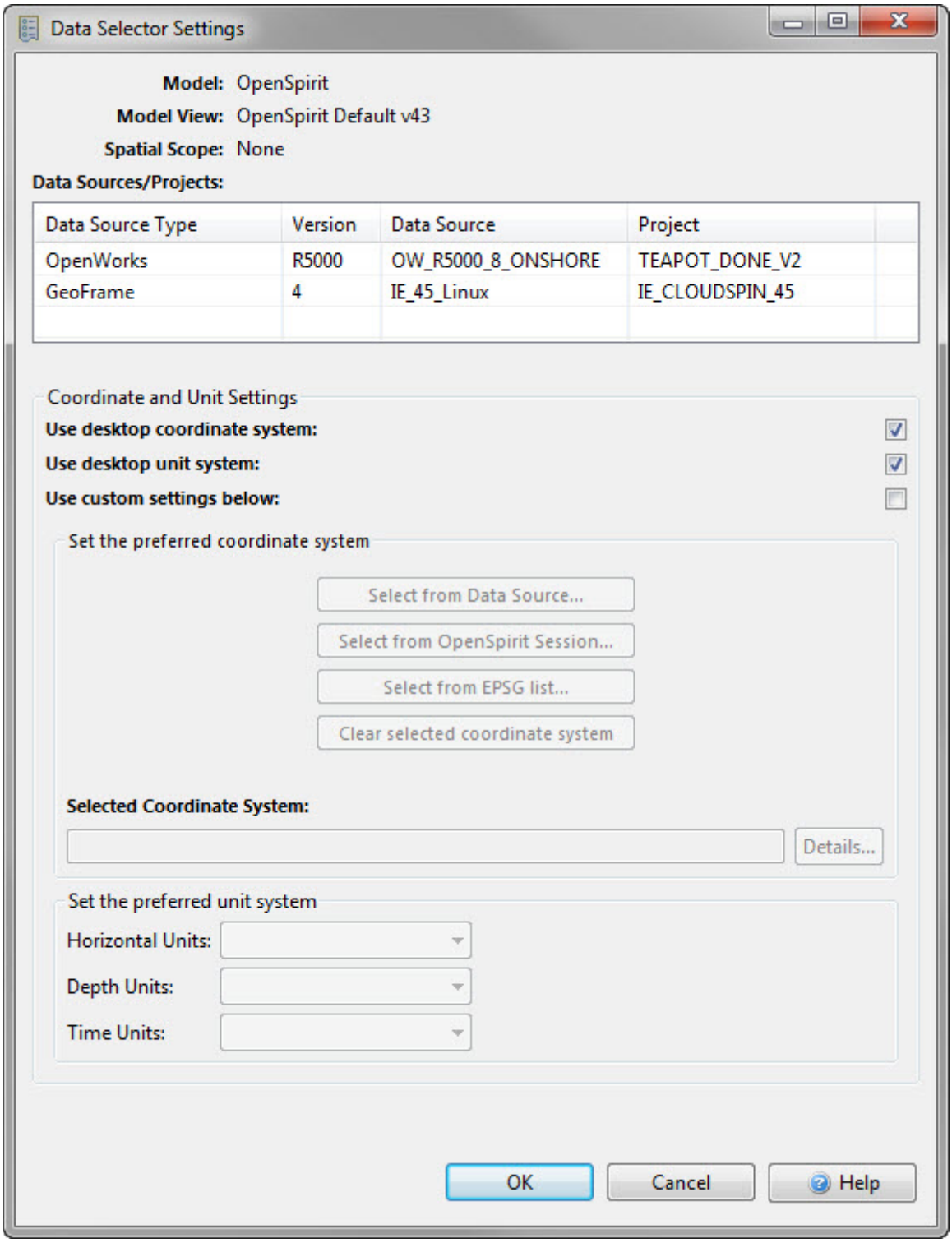

Data selection events that refer to data that resides in data sources that are not in the Data Selectors current data source selection scope will cause a question window to appear. Pressing the ***Yes*** button will cause the Data Selector's data source selection to be expanded to include all data sources referenced in the received event. Pressing the ***No*** button will cause the received event to be ignored.




# Data Selector Settings

The Data Selector Settings window displays summary information about the current state of the Data Selector. It is also used to select the coordinate system and units preferences for the Data Selector. The settings window is opened by clicking on the View Data Selector

Settings icon in the Data Selector tool bar. The settings window shows the data model, model view, spatial scope, data source selection, coordinate system, and units preferences currently enabled in the Data Selector.



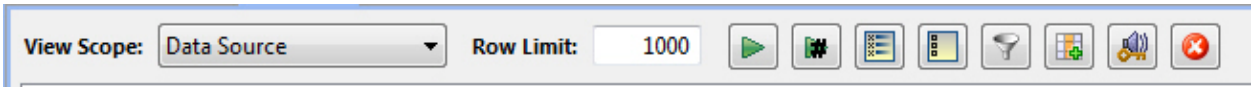

The default behavior of the Data Selector is to honor the coordinate system and units preferences set in the OpenSpirit Desktop preferences. However, the Data Selector Settings

window can be used to override the coordinate system or unit preferences used by the Data Selector. Overriding at the Data Selector level is typically done when there is a need to use multiple Data Selectors and have them use different coordinate system or unit preferences.

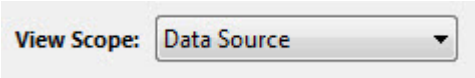
# Data Type Actions

## Data Type View Tool Bar

The *data type view* tool bar contains buttons that perform actions that only affect the currently selected data type view.




### View Scope




The view scope selection is used to display rows of data based on row selections made on related data type views. See the Scoping Views section of this help guide for details.

### Row Limit


The row limit value constrains the number of rows that will be displayed in the data type view. See the Row Limit section of this help guide for details.

### Query Button

The query button executes the query against the selected data sources and displays the resulting data rows. See the Executing Queries section of this help guide for details.

### Select All Rows Button

The select all rows button selects all of the rows that are currently displayed in the data type view. See the Row Selection section of this help guide for details.

### Clear All Row Selections Button

The clear all row selections button de-selects all selected rows in the data type view. See the Row Selection section of this help guide for details.

### Apply a Query Filter Button

The apply a query filter button opens the query filter window. The query filter window is used to create filters that can be used to constrain the rows of data that are displayed in the data type view. See the Query Filter Window section of this help guide for details.

### Select Columns to Display Button

The select columns to display button opens the column display selection and ordering window. See the Configuring Data Selector Tabs and Columns section of this help guide for details.

### Send Data Selection Event Button

The send data selection event button sends a data selection event containing keys for all the selected rows in the data type view. See the Sending Data Selection Events section of this help guide for details.

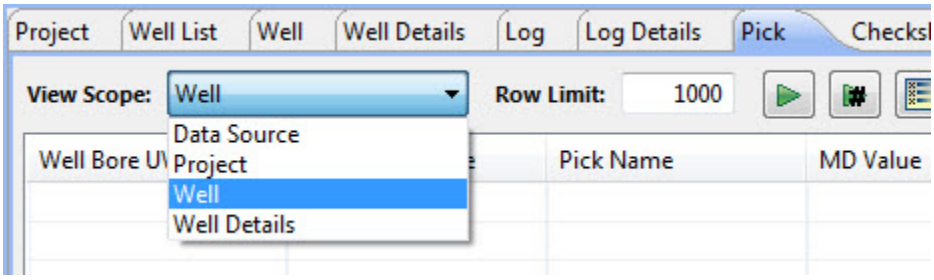
### Remove Received Data Selections Button

The remove received data selections button removes all rows that are selected and originated from a received data selection event. See the Removing Received Data Selections section of this help guide for details.

## Scoping Views

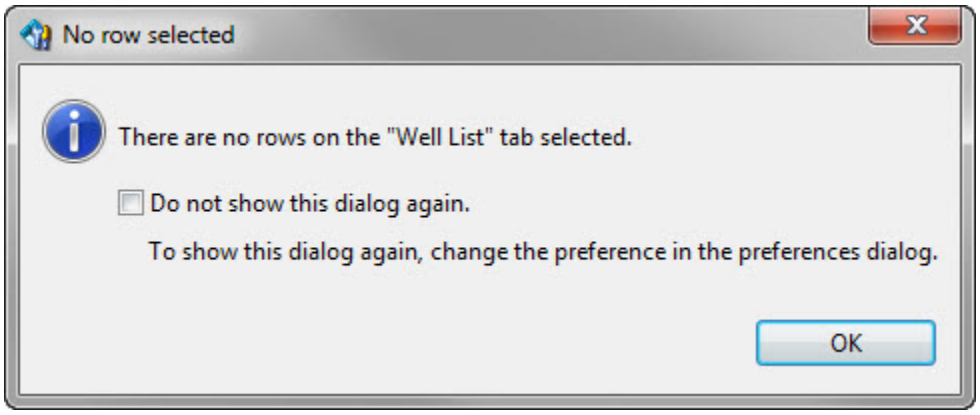
Each *data type view* displays the rows of data returned by querying the selected data sources. The query used to populate the view can be applied to the entire data source selection, or it can be applied to a subset of data based on selected rows in a related data type view. The ***View Scope*** option is used to control this query scoping behavior. The View Scope drop down list contains a list of all the related data types that are candidates for scoping the view. The drop down list content differs for each data type view. All data type views contain ***Data Source*** as one of the options. Selecting the Data Source option will cause all data in the selected data sources to be shown without regard for any row selections that may exist on any related data type views.

The following image shows the View Scope options for the OpenSpirit ***Pick*** data type view. The ***Pick*** data type query can be scoped to rows selected in the ***Project*** data type view, the ***Well*** data type view, or the ***Well Details*** data type view. Scoping the ***Pick*** view to the ***Well*** view will cause the ***Pick*** query to return only picks that belong to wells that are currently selected in the ***Well*** view. The query may also be further constrained by the Row Limit setting and any Query Filter that may also be set on the ***Pick*** data type view.



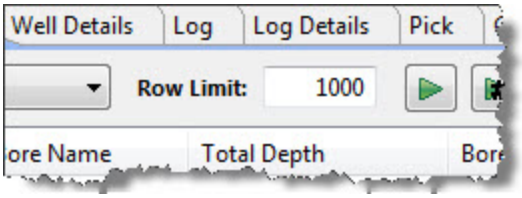

A warning message is displayed when executing a data type query where the View Scope is set to a data type where no rows are currently selected. The following image shows an example of setting the ***Pick*** data type view's scope to ***Well*** when no rows are currently selected in the ***Well*** data type view. This warning is given to remind the user why no pick

data rows are being returned by the query. Checking the ***Do not show this dialog again*** option on the warning will prevent this warning from being shown for any data type view. Display of this warning can be re-enabled using the Data Selector View preference window.




## Row Limit

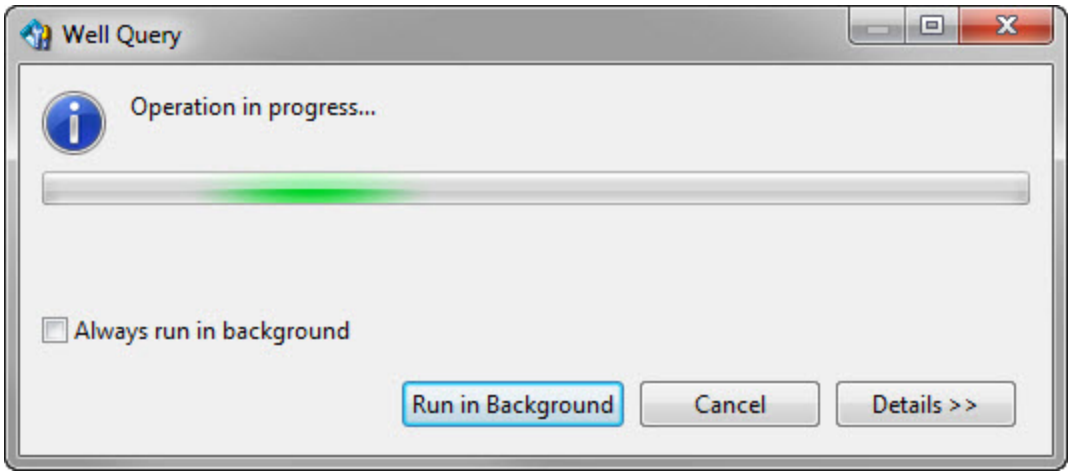
The Row Limit setting is provided to protect against flooding the Data Selector with large numbers of data rows when browsing data sources that contain large numbers of data items. The Row Limit will constrain the number of data rows returned by *data type view* query. Setting the limit to zero or blanking it out entirely will cause all query rows to be returned.



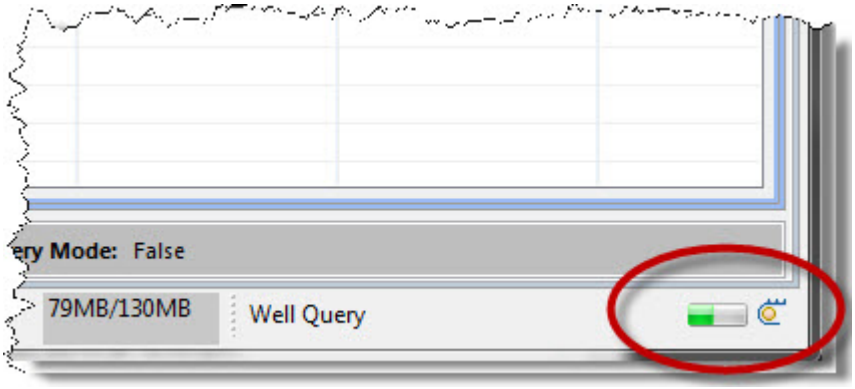

The default row limit for all tabs is controlled by the ***Limit number of rows*** option in the Data Selector preference settings.

## Executing Queries

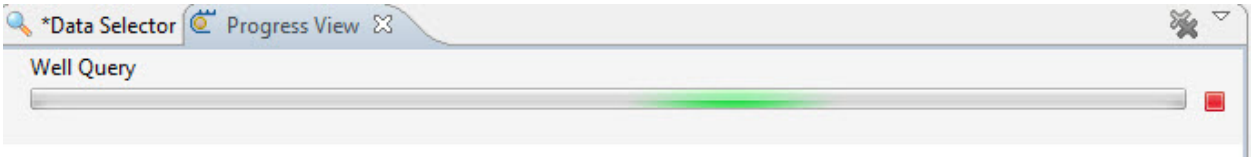
Data Selector queries are performed automatically when needed unless the Data Selector ***Auto Query*** preference setting is disabled. Click the Query execution icon  in the *data type view* tool bar to force a query execution. A progress window will open during the query execution. Click on the ***Run in Background*** button to dismiss the progress window and allow the query execution to continue. Click on the ***Cancel*** button to dismiss the progress window and terminate the query execution.



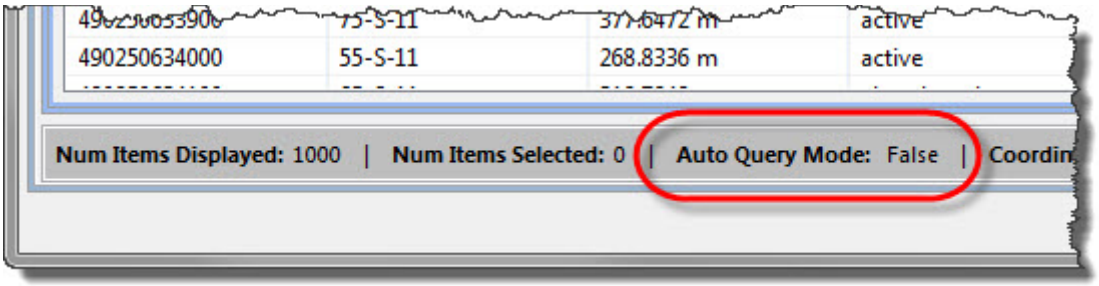

Checking the ***Always run in background*** option will cause the progress window to never appear and to always allow the query to run in the background. Background queries can still be canceled by clicking on the progress icon in the lower right corner of the OpenSpirit Desktop window.




This will open the desktop's ***Progress View*** window. Click on the cancel button  to the right of the progress bar to cancel the executing query.

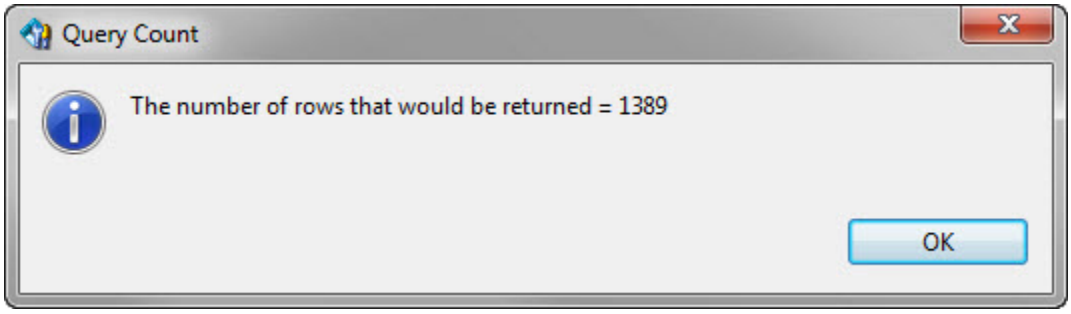



The status area below the query result rows shows the current Auto Query option state. False indicates the Auto Query option is not selected. True indicates Auto Query is currently enabled.




## Counting Rows

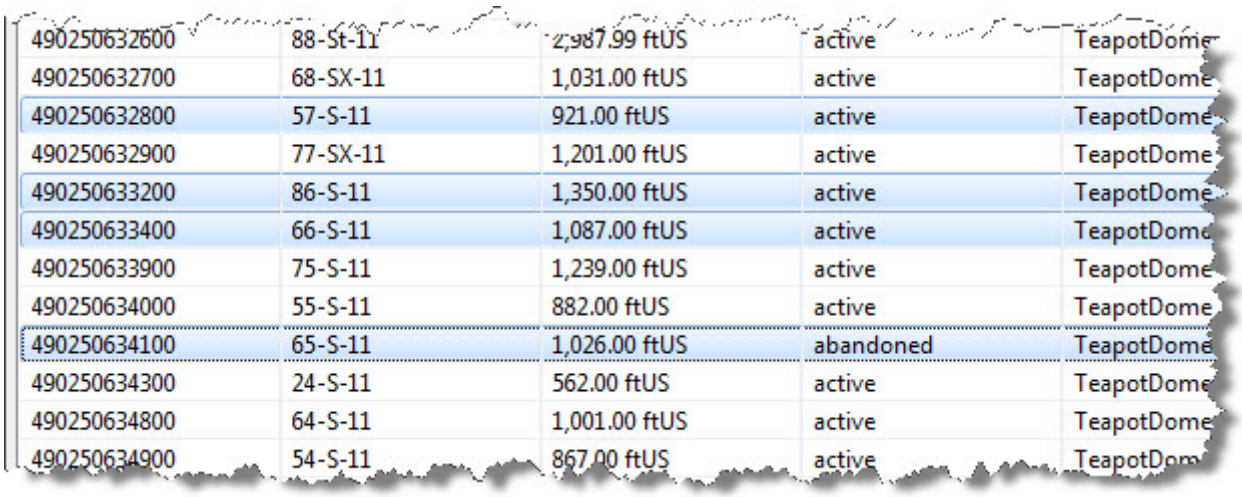
The Row Count feature is provided to aid in browsing large data sources. Clicking on the Row Count icon in the *data type view* tool bar will execute a count query in lieu of querying for the actual row data. Most data sources can execute count queries much faster than queries that return the row data. The Auto Query option should be deselected to make effective use of count queries. Otherwise the normal row data query will be executed automatically thereby negating much of the benefit from performing a count query. The count query result is displayed in an information window that opens when the count query execution completes.




## Row Selection

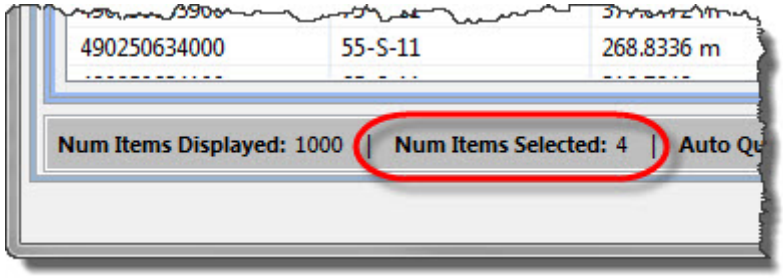
The rows of data returned by queries in a *data type view* can be selected in a variety of ways. All rows can be selected by clicking on the ***Select all rows*** icon in the *data type view* tool bar. Clicking on the Clear all row selections icon will deselect any currently selected rows. Rows can also be selected using the computer mouse by clicking on a single row. Holding down the shift key while clicking on a row will select all rows between the clicked on row and the last selected row. Holding down the control key while clicking on a row will toggle the selection state of the clicked on row.

Selected rows appear highlighted.



| | | | | |
|---|---|---|---|---|
| 490250632600 | 88-St-11 | 2,987.99 ftUS | active | TeapotDome |
| 490250632700 | 68-SX-11 | 1,031.00 ftUS | active | TeapotDome |
| 490250632800 | 57-S-11 | 921.00 ftUS | active | TeapotDome |
| 490250632900 | 77-SX-11 | 1,201.00 ftUS | active | TeapotDome |
| 490250633200 | 86-S-11 | 1,350.00 ftUS | active | TeapotDome |
| 490250633400 | 66-S-11 | 1,087.00 ftUS | active | TeapotDome |
| 490250633900 | 75-S-11 | 1,239.00 ftUS | active | TeapotDome |
| 490250634000 | 55-S-11 | 882.00 ftUS | active | TeapotDome |
| 490250634100 | 65-S-11 | 1,026.00 ftUS | abandoned | TeapotDome |
| 490250634300 | 24-S-11 | 562.00 ftUS | active | TeapotDome |
| 490250634800 | 64-S-11 | 1,001.00 ftUS | active | TeapotDome |
| 490250634900 | 54-S-11 | 867.00 ftUS | active | TeapotDom |

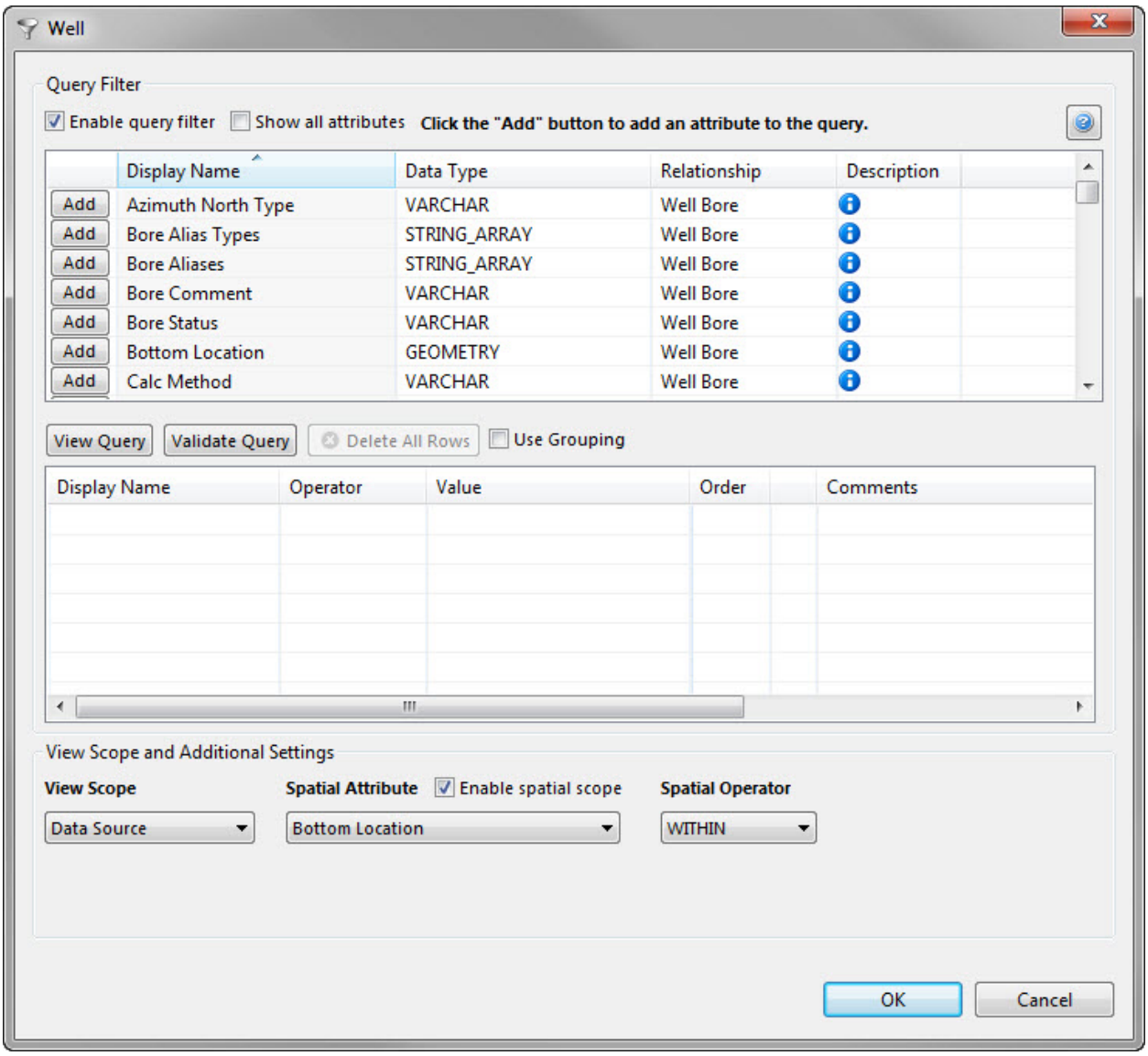
The status area below the rows will indicate the number of rows and the number of rows that are currently selected.




# Setting Query Filters

## Setting Query Filters

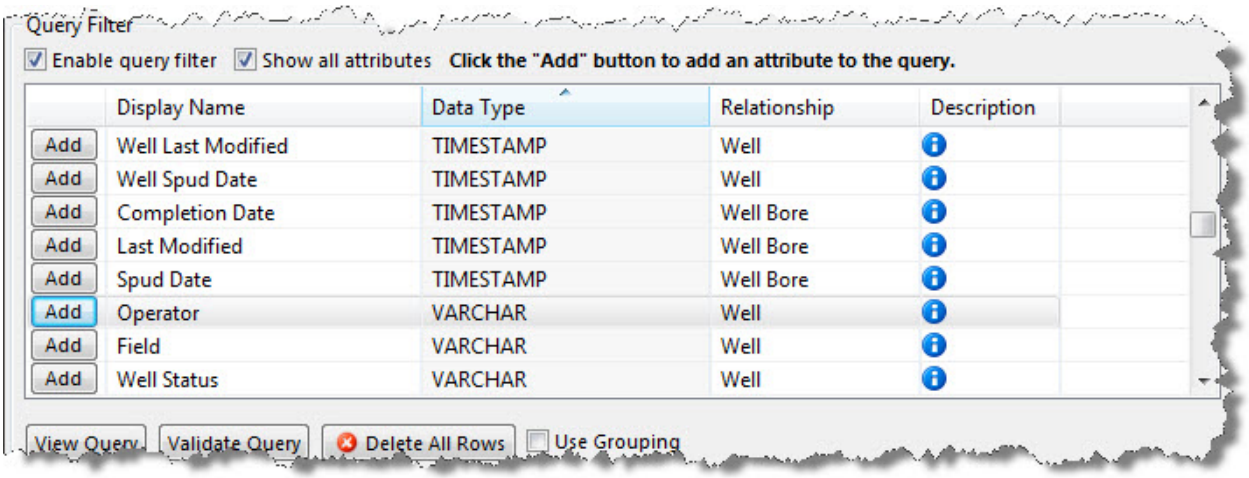
Query filters are used to restrict the data rows returned by the *data type view* query. Query filters are added to a *data type view* by clicking on the Query filter  icon in the *data type view* tool bar. This will open up the Query Filter window for the current *data type view*. For those familiar with the SQL database query language, the Query Filter window is used to construct the SQL WHERE clause that will be used when executing the query to populate the *data type view* with data rows.



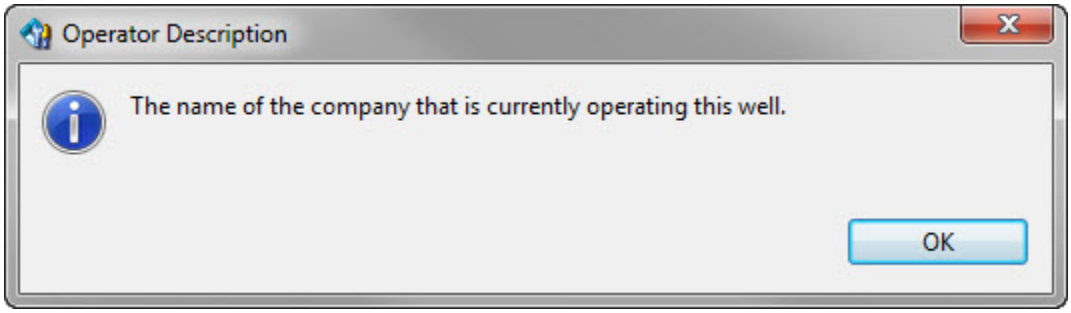

The ***Enable query filter*** check box at the top left corner of the Query Filter window can be used to toggle the filter on or off without having to remove it.

## Query Filter Attributes

A table of all the attributes available for display appears across the top third of the Query Filter window. Selecting the ***Show all attributes*** option will add all of the attributes that exist in the model view to the table, including attributes that are not marked as available in the model view.




The attributes shown in the table are available for use in constructing the filter. The attribute table shows the attribute's display name and data type. The ***Relationship*** column in the attribute table shows the data model data type that the attribute actually belongs to. This is needed because the *data type view* may represent a join between multiple related data types in the data model that you are viewing. Click on the information icon to open a window that shows a description of the attribute's purpose.

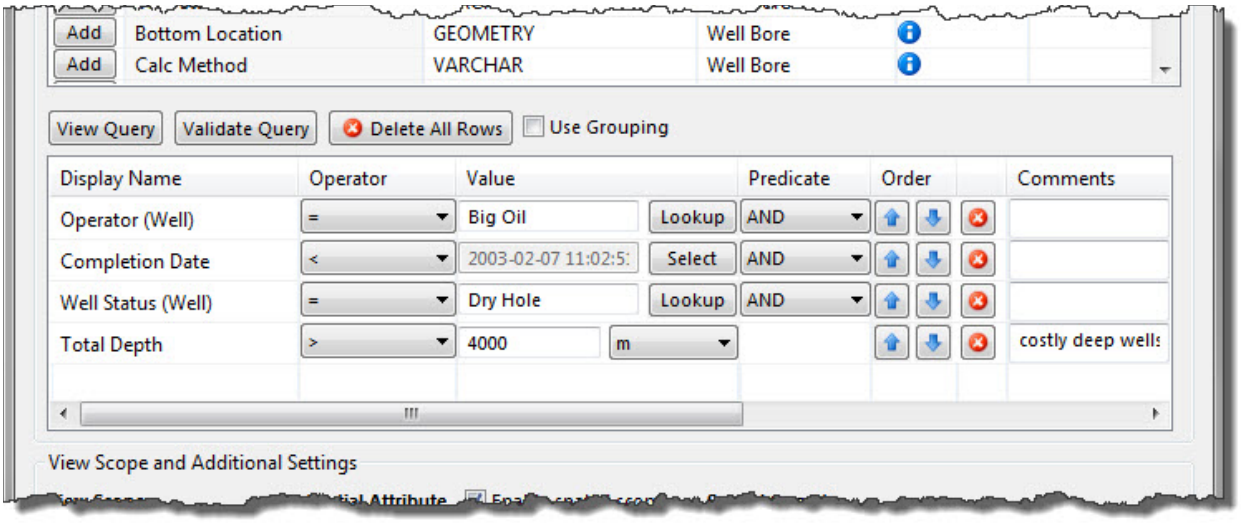



Click on the Add button next to any attribute to add it to the filter expression table that appears in the middle section of the Query Filter window.

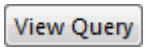
# Query Filter Expressions

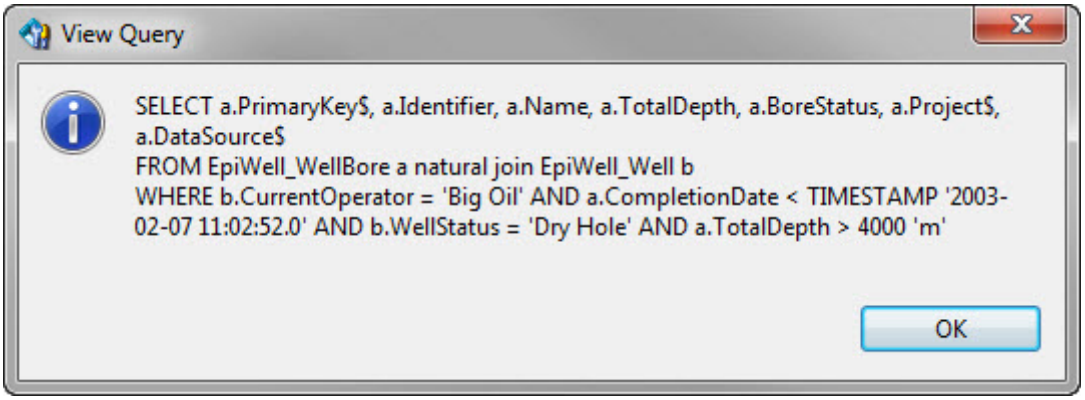
## Query Filter Expressions

Query filter expressions are tests that are applied to each row of data to decide it the row of data should be displayed in the Data Selector or if it should be omitted. The filter expression table displayed in the center section of the Query Filter window is actually a representation of the SQL WHERE clause that will be added to the query executed by the Data Selector against the OpenSpirit data connectors to populate the *data type view* in the Data Selector.




An optional comment field is provided so you can document the purpose of each filter expression.

Clicking on the ***View Query*** button  will display a window that shows the SQL that the data selector will execute to populate the *data type view* in the Data Selector.



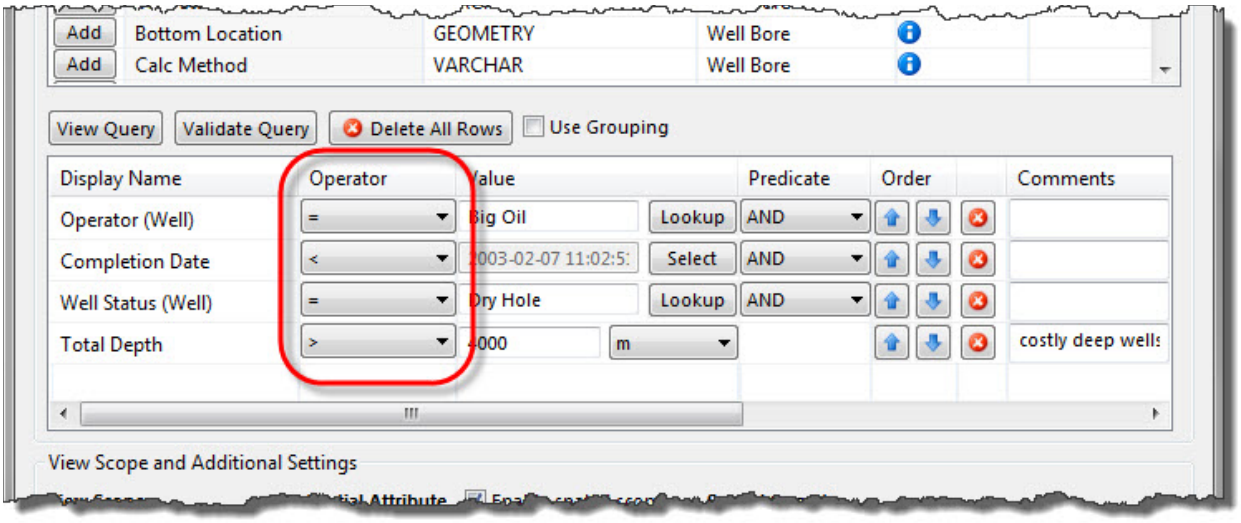


Note, the attribute names that appear in the SQL will not match the attribute display names shown in the Data Selector. The SQL contains the actual data model table and column names. The names shown in the query filter window are the model view names or data model display names.

Attributes can be removed from the filter expression table by clicking on the remove icon  . The up  and down  arrows are used to reorder query expressions in the table.

## Query Filter Operators

The relational operator to be used in the filter expression should be selected when adding an attribute to the filter expression. The operators that are available for selection depend on the attribute's data type.




The following table shows the operators that can be used for each attribute data type.

| Operator | Description | Supported Data Types |
|---|---|---|
| **=** | The attribute must be exactly equal to a specified value.<br>Use of the equals operator with FLOAT, FLOAT_QUANTITY, DOUBLE, and DOUBLE_QUANTITY attributes is strongly discouraged. Floating point values are subject to rounding errors during unit conversion. Also, the values presented in applications, including the Data Selector, are typically not showing the full precision of the values.<br><br>Consider using a less than expression combined with a greater than expression to create a tolerance range when filtering on floating point values. | BIGINT<br>BOOLEAN<br>CHAR<br>DATAKEY<br>DATE<br>DOUBLE<br>DOUBLE_QUANTITY<br>FLOAT<br>FLOAT_QUANTITY<br>INTEGER<br>SMALLINT<br>TIME<br>TIMESTAMP<br>TINYINT<br>UNIT<br>VARCHAR |
| **= Attribute** | The attribute must be exactly equal to the value of another attribute of the data type. The other attribute must have the same data type in order for it to appear in the value selection list. | BIGINT<br>BOOLEAN<br>CHAR<br>DATAKEY<br>DATE<br>DOUBLE<br>DOUBLE_QUANTITY<br>FLOAT<br>FLOAT_QUANTITY<br>INTEGER<br>SMALLINT |

| Operator | Description | Supported Data Types |
|---|---|---|
| | | TIME<br>TIMESTAMP<br>TINYINT<br>VARCHAR |
| **!=** | The attribute must be different from a specified value. Use of the not equals operator with FLOAT, FLOAT_QUANTITY, DOUBLE, and DOUBLE_QUANTITY attributes is strongly discouraged. Floating point values are subject to rounding errors during unit conversion. Also, the values presented in applications, including the Data Selector, are typically not showing the full precision of the values.<br><br>Consider using a less than expression combined with a greater than expression to create a tolerance range when filtering on floating point values. | BIGINT<br>CHAR<br>DATE<br>DOUBLE<br>DOUBLE_QUANTITY<br>FLOAT<br>FLOAT_QUANTITY<br>INTEGER<br>SMALLINT<br>TIME<br>TIMESTAMP<br>TINYINT<br>UNIT<br>VARCHAR |
| **<** | The attribute must be less than a specified value. A lexical comparison is used when comparing VARCHAR attributes. | BIGINT<br>CHAR<br>DATE<br>DOUBLE<br>DOUBLE_QUANTITY<br>FLOAT<br>FLOAT_QUANTITY<br>INTEGER<br>SMALLINT<br>TIME<br>TIMESTAMP<br>TINYINT<br>VARCHAR |
| **>** | The attribute must be greater than a specified value. A lexical comparison is used when comparing VARCHAR attributes. | BIGINT<br>CHAR<br>DATE<br>DOUBLE<br>DOUBLE_QUANTITY<br>FLOAT<br>FLOAT_QUANTITY<br>INTEGER<br>SMALLINT<br>TIME<br>TIMESTAMP |

<table>
<tr><th>Operator</th><th>Description</th><th>Supported Data Types</th></tr>
<tr><td></td><td></td><td>TINYINT<br>VARCHAR</td></tr>
<tr><td>IN</td><td>The attribute must have an exact match with one value in a list of comma separated values<br>  You can paste multiple lines of text from the system clipboard into the value field and the multiple lines will be converted to a comma separated list of values.</td><td>BIGINT<br>CHAR<br>DATAKEY<br>DOUBLE<br>FLOAT<br>INTEGER<br>SMALLINT<br>STRING_ARRAY<br>TINYINT<br>VARCHAR</td></tr>
<tr><td>NOT IN</td><td>The attribute must not have an exact match with any value in a list of specified values.<br>  You can paste multiple lines of text from the system clipboard into the value field and the multiple lines will be converted to a comma separated list of values.</td><td>BIGINT<br>CHAR<br>DATAKEY<br>DOUBLE<br>FLOAT<br>INTEGER<br>SMALLINT<br>STRING_ARRAY<br>TINYINT<br>VARCHAR</td></tr>
<tr><td>LIKE</td><td>The attribute must partially match a specified value. Partial match is specified using special wildcard characters.<br><table><tr><th>Wildcard Character</th><th>Description</th></tr><tr><td>%</td><td>Matches any string of zero or more characters</td></tr><tr><td>_</td><td>Matches any single character.</td></tr></table>For example:<br><br>The expression value ABC% will match any value that begins with ABC. It will match ABCDEF, ABCD, and ABC. It will not match DABC because the string must begin with the character A.<br><br>The expression value %ABC will match any value that ends with ABC. It will match DEFABC, DABC, and ABC.<br><br>The expression value %ABC% will match</td><td>VARCHAR</td></tr>
</table>

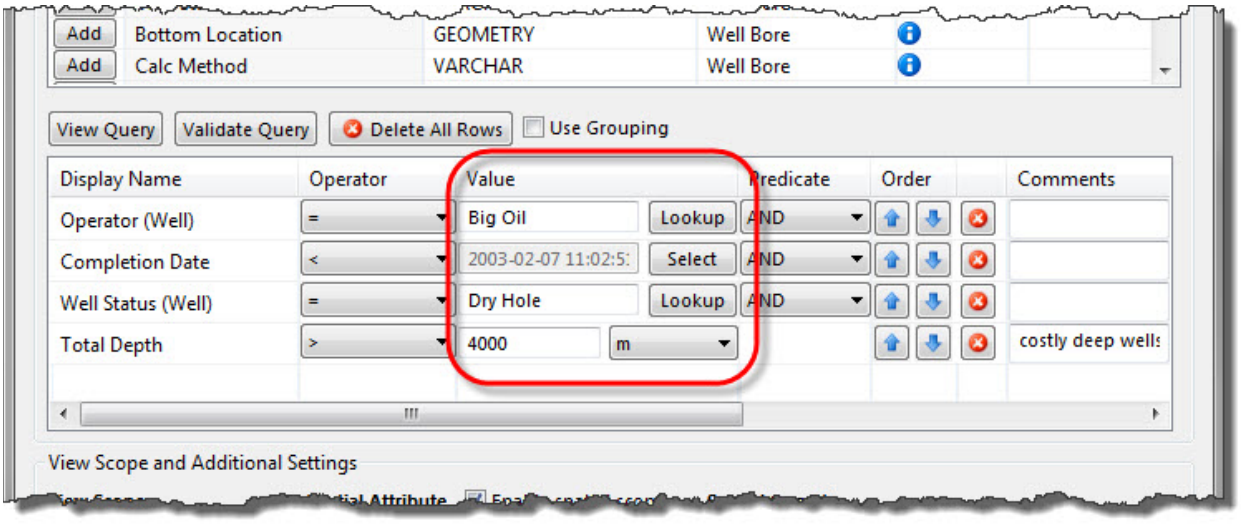
| Operator | Description | Supported Data Types |
|---|---|---|
| | any value that contains ***ABC*** anywhere in the value. It will match ***DABCEF***, ***ABCDEF***, ***DEFABC***, and ***ABC***. It will not match ***CBA*** or ***ADBEC***.<br><br>The _ character will match any single character. It will not match zero characters. Therefore the expression value ***ABC***_ will match ***ABCD***, ***ABCE***, but will not match ***ABCDE*** or ***ABC***.<br><br>Any number of ***%*** and _ *wildcards* can be used in the expression value. | |
| **NOT LIKE** | The attribute must not partially match a specified value. Partial match is specified using the special wildcard characters described above in the description of the LIKE operator. | VARCHAR |
| **IS NULL** | The attribute cannot have any value in the database. | <all types> |
| **IS NOT NULL** | The attribute can have any value except the null value. | <all types> |
| **SIMILAR TO** | The attribute must partially match a specified value. Partial match is specified using regular expression syntax. | VARCHAR |
| **NOT SIMILAR TO** | The attribute must not partially match a specified value. Partial match is specified using regular expression syntax. | VARCHAR |
| **WITHIN** | The attribute must be "spatially within" the spatial scope that has been set on the OpenSpirit Desktop.<br><br>Spatially within means the geometry of the attribute lies in the interior of the Data Selector's spatial scope.<br><br>This operator conforms to the spatial relationship predicates defined in the OpenGIS Simple Feature Access specification. | GEOMETRY |
| **EQUALS** | The attribute must be "spatially equal" to the spatial scope that has been set on the OpenSpirit Desktop.<br><br>Spatially equal means the geometries are topologically equal.<br><br>This operator conforms to the spatial relationship predicates defined in the | GEOMETRY |

| Operator | Description | Supported Data Types |
|---|---|---|
| | OpenGIS Simple Feature Access specification. | |
| **DISJOINT** | The attribute must be "spatially disjoint" from the spatial scope that has been set on the OpenSpirit Desktop.<br><br>Spatially disjoint means the geometries have no point in common.<br><br>This operator conforms to the spatial relationship predicates defined in the OpenGIS Simple Feature Access specification. | GEOMETRY |
| **TOUCHES** | The attribute must "spatially touch" the spatial scope that has been set on the OpenSpirit Desktop.<br><br>Spatially touch means the geometries have at least one boundary point in common, but no interior points.<br><br>This operator conforms to the spatial relationship predicates defined in the OpenGIS Simple Feature Access specification. | GEOMETRY |
| **OVERLAPS** | The attribute must "spatially overlap" the spatial scope that has been set on the OpenSpirit Desktop.<br><br>Spatially overlap means the geometries share some but not all points in common, and the intersection has the same dimension as the geometries themselves.<br><br>This operator conforms to the spatial relationship predicates defined in the OpenGIS Simple Feature Access specification. | GEOMETRY |
| **CROSSES** | The attribute must "spatially cross" the spatial scope that has been set on the OpenSpirit Desktop.<br><br>Spatially cross means the geometries share some but not all interior points, and the dimension of the intersection is less than that of at least one of the geometries.<br><br>This operator conforms to the spatial relationship predicates defined in the OpenGIS Simple Feature Access specification. | GEOMETRY |

| Operator | Description | Supported Data Types |
|---|---|---|
| **INTERSECTS** | The attribute must "spatially intersect" the spatial scope that has been set on the OpenSpirit Desktop.<br><br>Spatially intersect means the geometries have at least one point in common.<br><br>This operator conforms to the spatial relationship predicates defined in the OpenGIS Simple Feature Access specification. | GEOMETRY |
| **CONTAINS** | The attribute must "spatially contain" the spatial scope that has been set on the OpenSpirit Desktop.<br><br>Spatially contains means the geometry of the Data Selector's spatial scope lies in the interior of the attribute.<br><br>This operator conforms to the spatial relationship predicates defined in the OpenGIS Simple Feature Access specification. | GEOMETRY |

## Query Filter Values

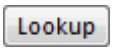
Most filter expression operators also require a value to be entered or selected. The exceptions are the ***IS NULL***, ***IS NOT NULL***, and the spatial operators ***WITHIN, EQUALS, DISJOINT, TOUCHES, OVERLAPS, CROSSES, INTERSECTS,*** and ***CONTAINS***. These operators do not require an expression value to be entered in the filter.




Values for filter expressions using the **= *Attribute*** operator are entered by selecting one of the attributes in the drop down list. The drop down list contains all of the attributes that have the same data type as the expression attribute.

Values for other operator types are entered in different ways depending on the attribute data type and the expression operator that is selected.

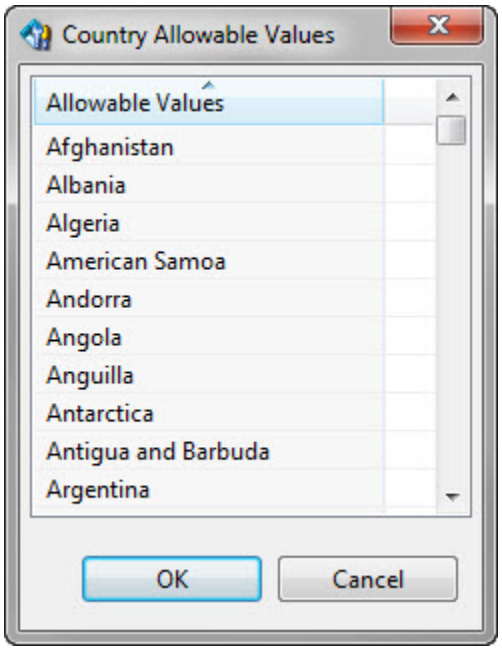
### VARCHAR attributes

Values for filter expressions on ***VARCHAR*** attributes can be entered by typing in the ***Value*** field, or by clicking on the adjacent ***Lookup*** button 

which will query the Data Selector's current data source(s) and display a distinct set of values that currently exist in the data source(s). A value can then be selected from the lookup list. The lookup selection list for the ***IN*** and ***NOT IN*** operators for ***VARCHAR*** attributes allows for multiple values to be selected. The values should be separated by commas when entered manually.

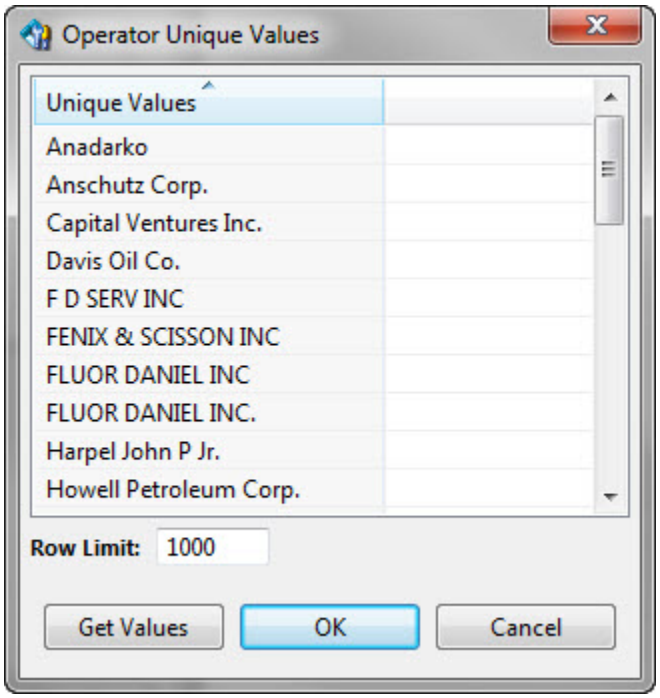
You can paste multiple lines of text from the system clipboard into the value field when using the ***IN*** or ***NOT IN*** operator and the multiple lines will be converted to a comma separated list of values.

The list displayed by clicking on the ***Lookup*** button will be either a complete list of allowable values, or it will be a list of the distinct set of values that currently exist in the selected data source(s). The lookup list for attributes that are constrained to a list of allowable values will appear as a scrolled list of all the possible values for the attribute. The title bar above the list will contain the attribute name followed by ***Allowable Values***.




The allowable values list provides no indication which values are currently in use in the data source(s). All possible values are shown.

The lookup list for attributes that are not constrained to a set of allowable values appears as a scrolled list that contains the distinct list of values that are currently in use in the data source(s). The title bar above the list will contain the attribute name followed by ***Unique Values***. A ***Row Limit*** field and a ***Get Values*** button appear on distinct values lists. They do not appear on allowable values lists.




The ***Row Limit*** field below the list of values provides protection against attempting to display a very large number of values. A larger or smaller number of values can be shown in the list by entering a different row limit value and clicking on the ***Get Values*** button to re-query the data source(s).

### STRING_ARRAY attributes

Values for filter expressions on ***STRING_ARRAY*** attributes can be entered when using the ***IN*** or the ***NOT IN*** operator. Values are entered by typing in the ***Value*** field. A single value can be entered or a comma separated list of values can be entered.

You can paste multiple lines of text from the system clipboard into the STRING_ARRAY value field and the multiple lines will be converted to a comma separated list of values.

### INTEGER, BIGINT, TINYINT, and SMALLINT attributes

Values for filter expressions on integer attributes are entered by typing an integer number in the ***Value*** field. The value must be a positive or negative integer.

### FLOAT and DOUBLE attributes

Values for filter expressions on real number attributes are entered by typing a number in the ***Value*** field. The value must be a positive or negative number expressed in decimal number format with a period character separating the whole number part from the fractional number part.

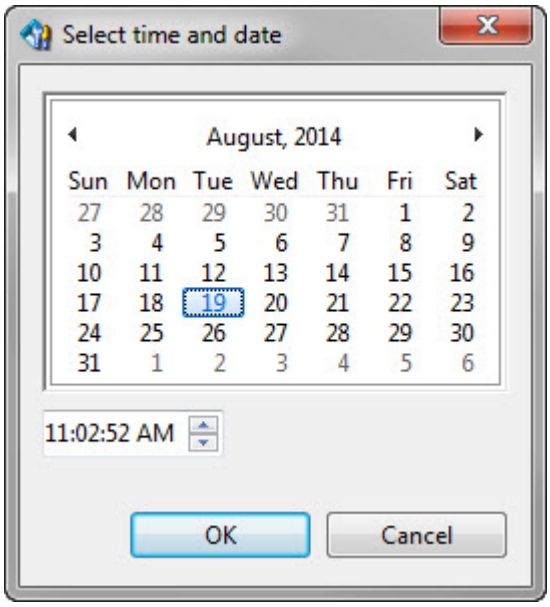
### FLOAT_QUANTITY and DOUBLE_QUANTITY attributes

Values for filter expressions on ***FLOAT_QUANTITY*** and ***DOUBLE_QUANTITY*** attributes are entered by typing a number in the ***Value*** field. A unit of measure selection is also required in order for the numeric value to be fully defined. Unit conversions will be performed if needed when applying the filter during query execution. The unit selected in the filter expression will not affect how the values returned by the query are displayed in the Data Selector. The unit is only used to insure proper unit handling when applying the filter.

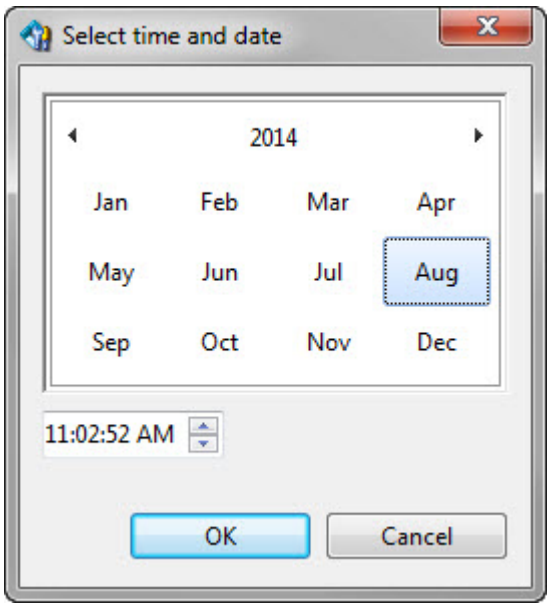
### TIMESTAMP attributes

Values for filter expressions on ***TIMESTAMP*** attributes must be entered using a specialized date/time selection window. Pressing the ***Select*** button 

next to the filter expression displays the date/time selection window.




Clicking on the month, year title will zoom the calendar out for selecting any month in the year.




Clicking on the year title will zoom the calendar out even more for selecting any year within the decade. Clicking on the decade will zoom the calendar out to select a century. Century selection is the zoom limit.

### BOOLEAN attributes

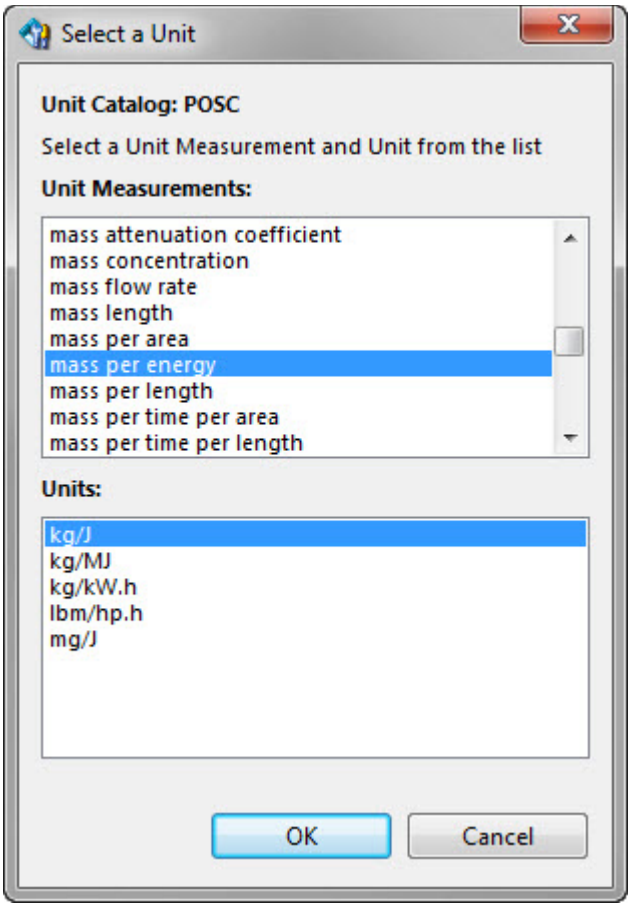
The value used for ***BOOLEAN*** attribute is selected from a drop down list that contains ***TRUE*** and ***FALSE***.


### GEOMETRY attributes

The value used for ***GEOMETRY*** attributes is determined by the data selector's spatial scope. The value is entered using the Data Selector's spatial scope selector. The spatial scope selector is opened by clicking on the Select Spatial Scope icon in the Data Selector tool bar. See the Setting a Spatial Scope section of this guide for information about setting the data selector's spatial scope.

### UNIT attributes

Values for filter expressions on ***UNIT*** attributes must be entered using a specialized unit selection window. Pressing the ***Lookup*** button Lookup next to the filter expression displays the unit selection window.




Select a unit measurement in the top section of the window to display the units that belong to a unit measurement category. Select the desired unit in the lower section of the window.

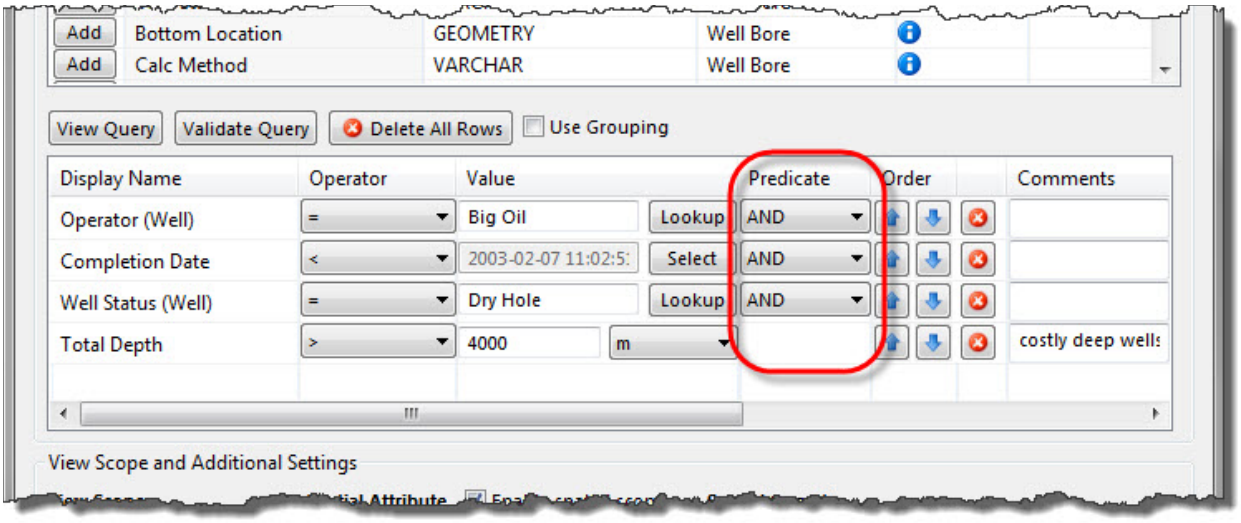
### DATAKEY attributes

Values for filter expressions on ***DATAKEY*** attributes must contain a valid OpenSpirit data key string. Data keys are represented using XML. Data key strings can be pasted into the ***Value*** field using the system clipboard's copy/paste feature. Data key strings can be obtained from a variety of sources. They can be obtained by dragging and dropping rows from the data selector to a Microsoft Word or Excel document. They can sometimes be obtained from Copy Manager logs or from OpenSpirit data connector log files.

Filtering using data key attributes is an advanced feature. It is expected to primarily be used by software developers.

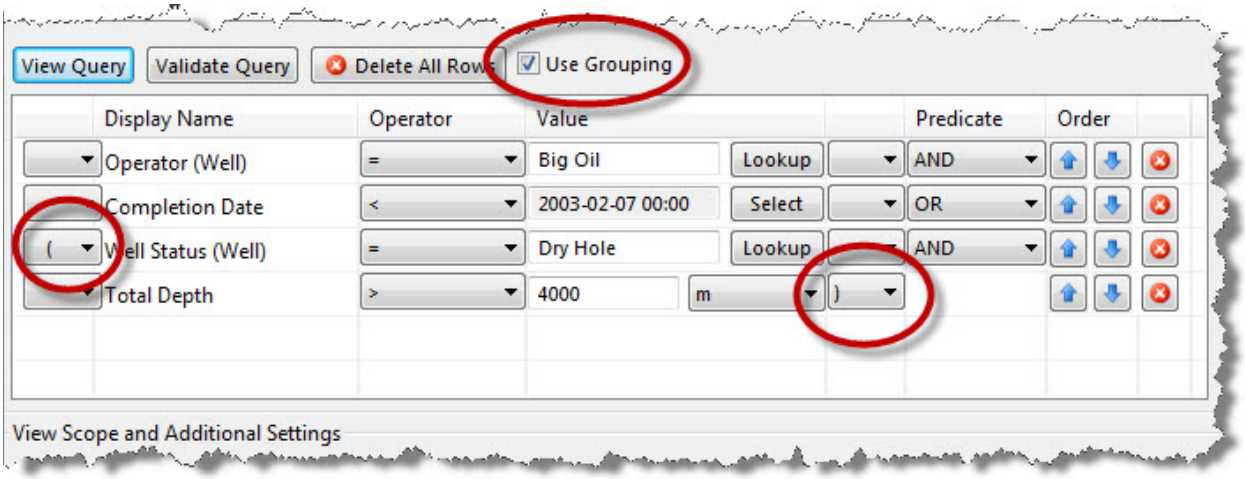
## Query Filter Predicate

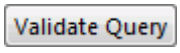
The query filter expression ***Predicate*** selector appears when adding more than one attribute to the query filter expression table. The predicate indicates how the filter expression should be logically combined with the expression immediately below it. The predicate choices are ***AND*** and ***OR***.



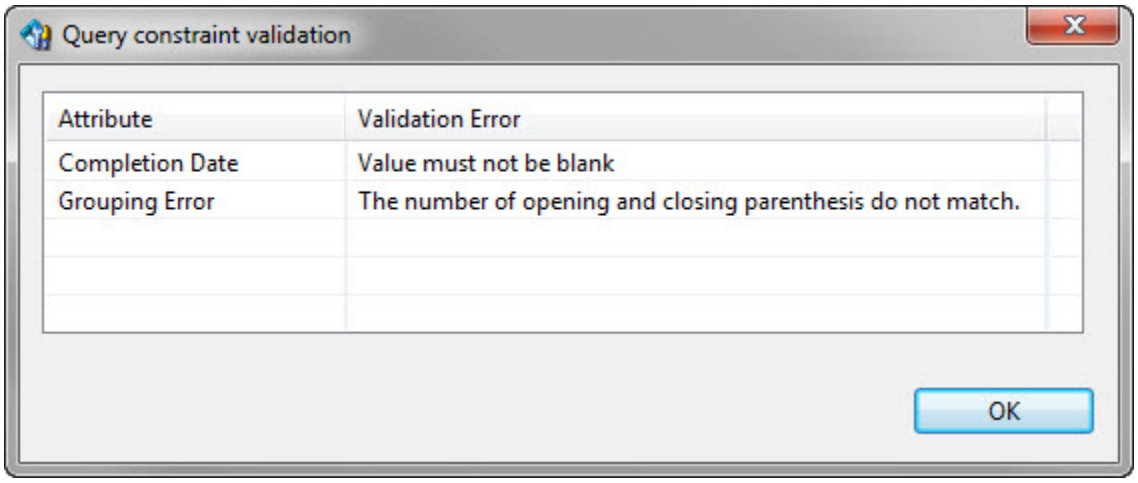

The ***AND*** predicate combines the expressions by requiring both to evaluate to true in order for a data row to be returned by the query. Combining two expressions using the ***OR*** predicate will return a data row if either expression evaluates to true. Expressions are most commonly combined using the ***AND*** predicate.

It is highly recommended to use the grouping feature when mixing use of ***AND*** and ***OR*** predicates in a query filter. The grouping feature is used to impose an evaluation order on the combined expressions. Expression grouping can be enabled by selecting the ***Use Grouping*** option above the filter expression table. Selecting the grouping option causes two additional columns to appear in the filter expression table. The columns contain drop down selectors that are used to add parentheses around the expressions. Up to two levels of parentheses nesting can be selected. The opening and closing parentheses count must match.




A ***Validate Query*** button 

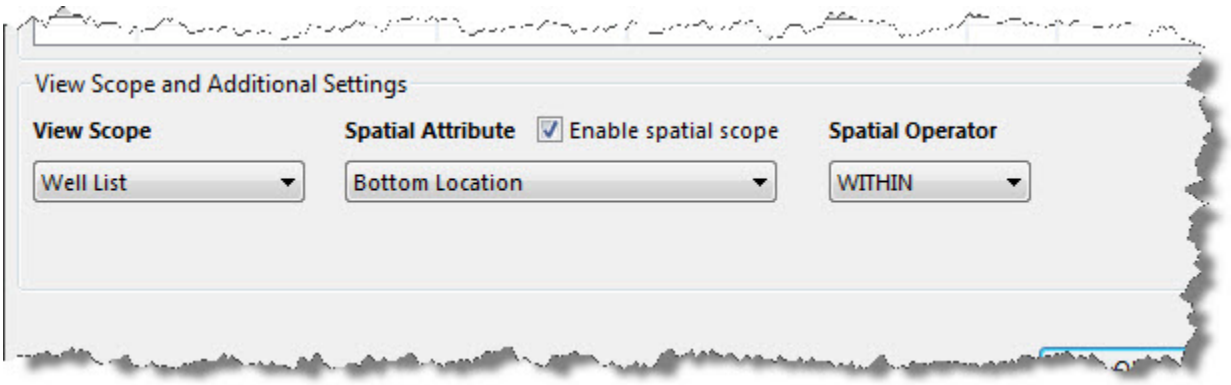
is provided to test the filter expressions to insure parentheses matching. The validation also insures that expression values have been entered where required. Validation will run automatically when closing the Query Filter window using the ***Ok*** button.




Do not use ***OR*** predicates unless it is absolutely necessary when working with large data sources. They often result in poor query performance unless accompanied by a top level filter expression using the ***AND*** predicate.

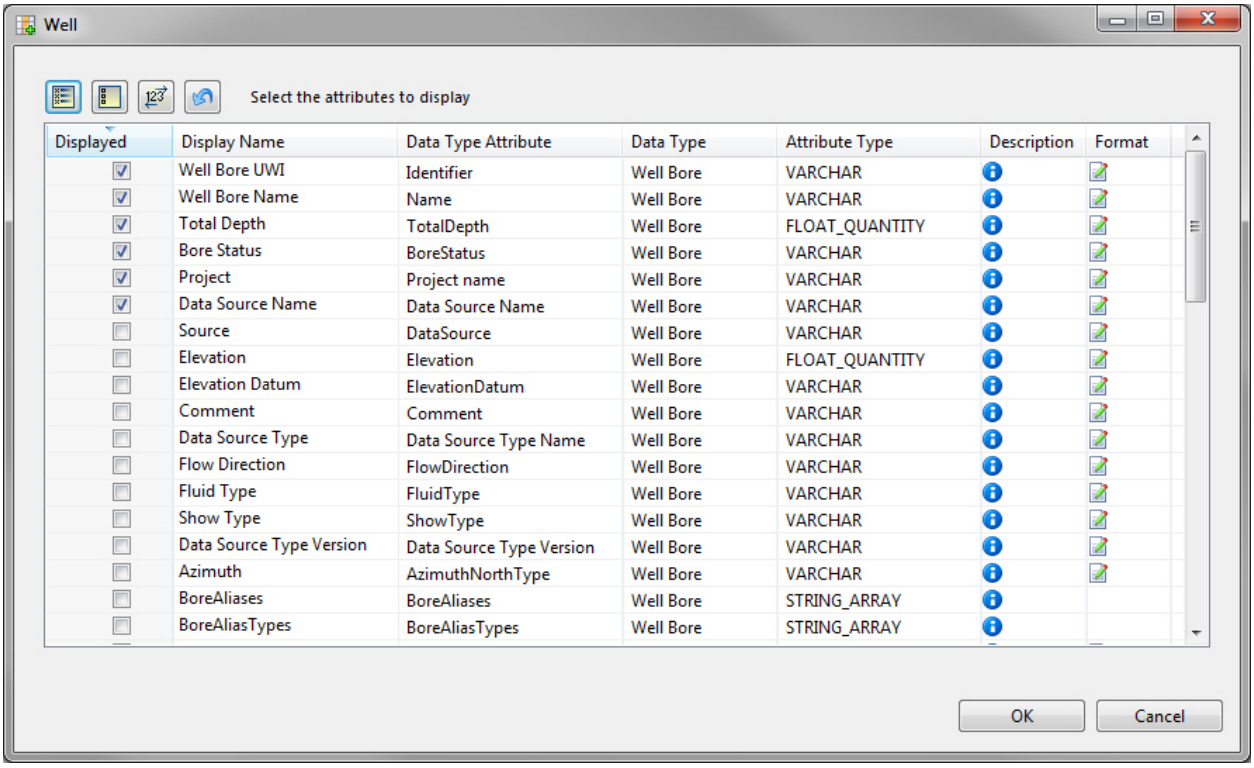
## Query Filter View Scope & Spatial Filtering

The bottom section of the Query Filter window contains options for selecting the View Scope of the *data type view* and for controlling spatial filtering. The View Scope selection option is the same as on the *data type view* tool bar. The ***Enable spatial scope*** option turns spatial filtering on or off. A spatial scope must be set on the desktop in addition to enabling it in the Query Filter window for spatial filtering to be performed. The Spatial Attribute selection determines the attribute that the spatial filtering will be applied to. All spatial attributes available for display in the *data type view* will appear in this drop down selector.




# Configuring Data Selector Tabs & Columns

The column display can be turned on and off in a *data type view* using the attribute selection window. Click on the ***Select columns to display*** icon  in the *data type view* tool bar to open the attribute selection window.

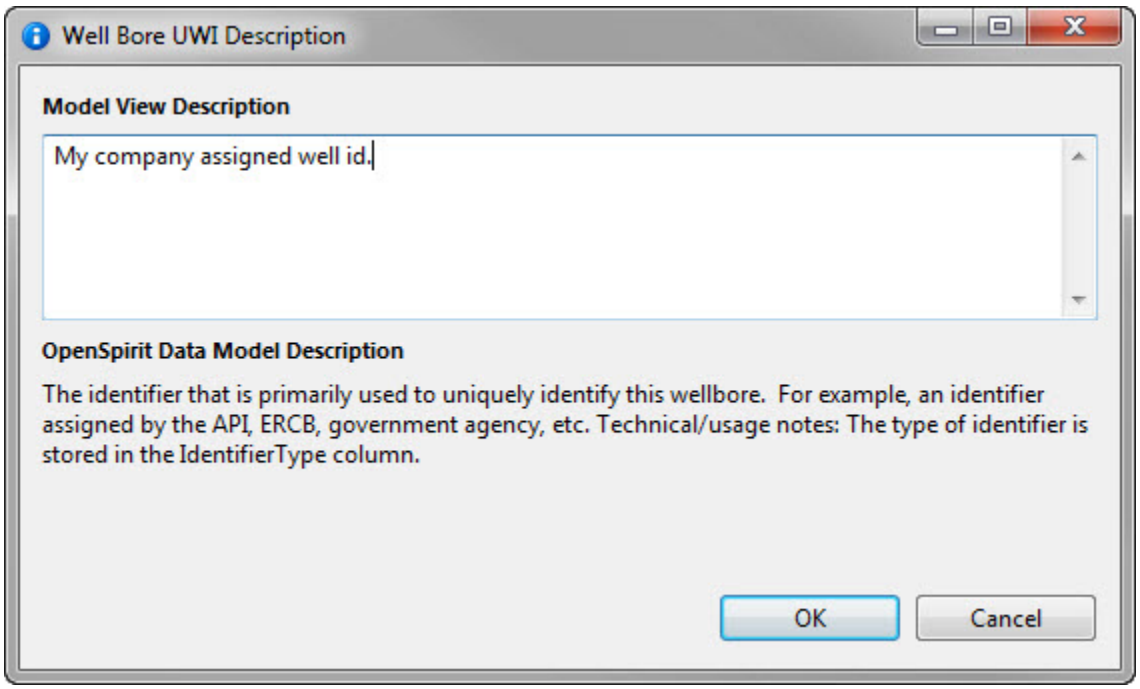



| Displayed | Display Name | Data Type Attribute | Data Type | Attribute Type | Description | Format |
|---|---|---|---|---|---|---|
| ☑ | Well Bore UWI | Identifier | Well Bore | VARCHAR | | |
| ☑ | Well Bore Name | Name | Well Bore | VARCHAR | | |
| ☑ | Total Depth | TotalDepth | Well Bore | FLOAT_QUANTITY | | |
| ☑ | Bore Status | BoreStatus | Well Bore | VARCHAR | | |
| ☑ | Project | Project name | Well Bore | VARCHAR | | |
| ☑ | Data Source Name | Data Source Name | Well Bore | VARCHAR | | |
| ☐ | Source | DataSource | Well Bore | VARCHAR | | |
| ☐ | Elevation | Elevation | Well Bore | FLOAT_QUANTITY | | |
| ☐ | Elevation Datum | ElevationDatum | Well Bore | VARCHAR | | |
| ☐ | Comment | Comment | Well Bore | VARCHAR | | |
| ☐ | Data Source Type | Data Source Type Name | Well Bore | VARCHAR | | |
| ☐ | Flow Direction | FlowDirection | Well Bore | VARCHAR | | |
| ☐ | Fluid Type | FluidType | Well Bore | VARCHAR | | |
| ☐ | Show Type | ShowType | Well Bore | VARCHAR | | |
| ☐ | Data Source Type Version | Data Source Type Version | Well Bore | VARCHAR | | |
| ☐ | Azimuth | AzimuthNorthType | Well Bore | VARCHAR | | |
| ☐ | BoreAliases | BoreAliases | Well Bore | STRING_ARRAY | | |
| ☐ | BoreAliasTypes | BoreAliasTypes | Well Bore | STRING_ARRAY | | |

Select or deselect the check box in the ***Displayed*** column to add or remove attribute columns from the *data type view*. A select all  and a select none  icon is provided in the window's tool bar.

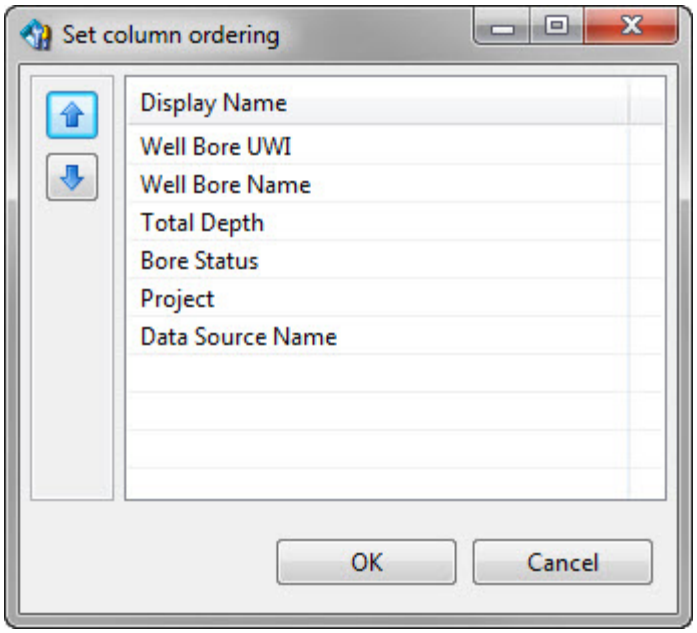
The text that appears for the column headings of the *data type view* can be changed by clicking in an attribute's ***Display Name*** field and replacing the existing display name text.

Clicking on the description icon  for an attribute opens a widow that can be used to enter a description of the attribute. The description appears as a tool tip when hovering the mouse pointer over the attribute's column header in the *data type view* window.




Some attribute data types provide display format settings that can be customized for specific attributes. Attribute specific formatting is available for an attribute if an edit icon is shown in the ***Format*** column for the attribute. The number of characters displayed for VARCHAR attributes can be limited. The display format of numeric attributes, color attributes, geometry attributes, and date/time attributes can also be customized. Formats set at the attribute level will override the Data Display settings in the OpenSpirit Desktop preferences.

Clicking on the ***Set Column Order*** icon in the attribute selection window tool bar opens a window that can be used to change the left to right ordering of the columns that have been selected for display. Select one or more attribute and click on the up or down arrow icon to change the column order. The attribute at the top of the ordering window will be shown at the left most column position in the *data type view* tab. The attribute at the bottom of the ordering window will be shown at the right most column position.




Clicking on the Reset icon in the attribute selection window tool bar restores the attribute display order and display on/off settings to their default values. The defaults are determined by the model view or data model selected from the data source selection window. Any changes to the attribute description or display format are not reverted.

## Sending Data Selection Events

The primary use of the OpenSpirit *Data Selector*, in addition to browsing data sources, is to send a selection of one or more data items to another application. This is accomplished using *data selection events* or *drag and drop*. Data selection events are sent by selecting one or more rows in the currently selected *data type view* and clicking on the data selection event send button in the data type view's tool bar. This will send the identity of all selected rows to any application you are running that is currently listening for OpenSpirit data selection events.

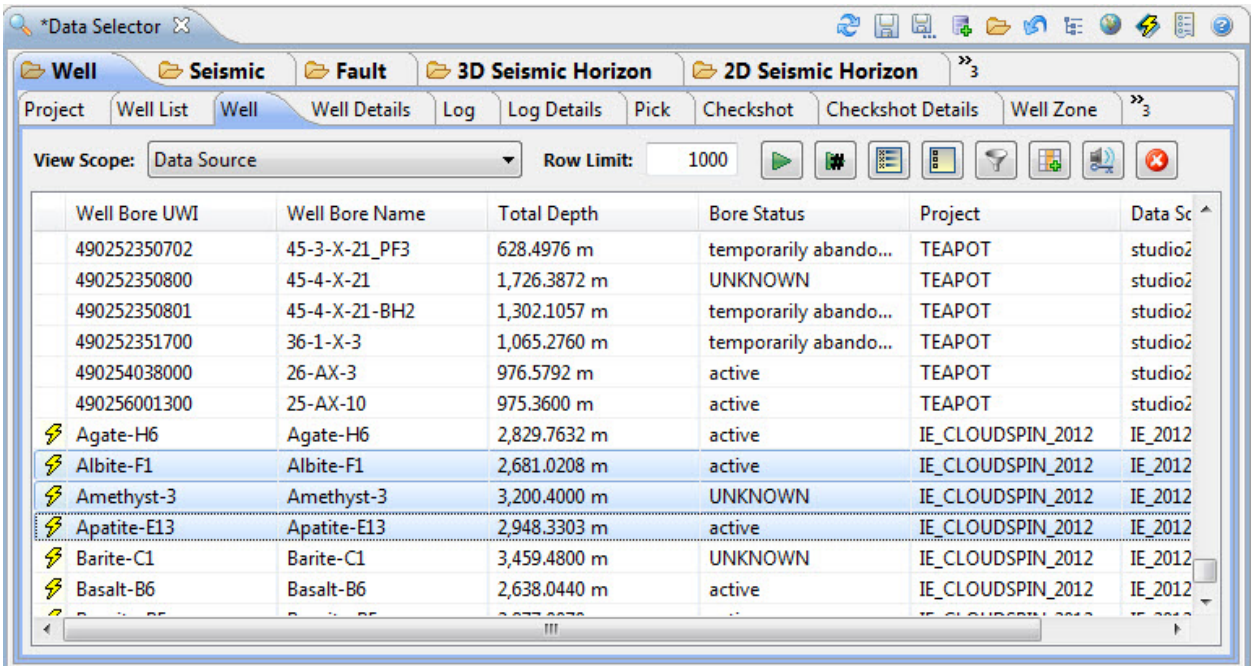
Each application that is listening for data selection events will react to the event in a way appropriate for that application. Each application determines which data type it will listen for and what it will do when the event is received.

The identity of a row in a data type view is represented by an OpenSpirit *data key*.

## Removing Received Data Selection

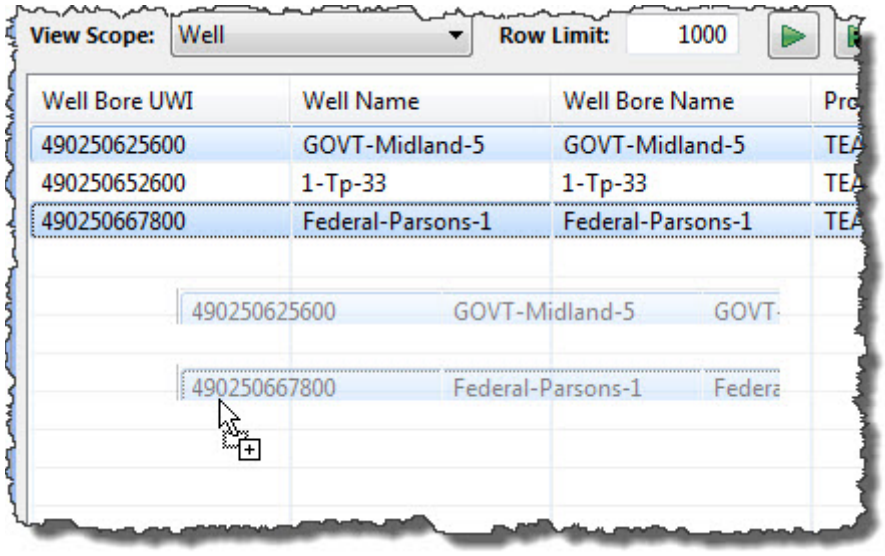
Data rows originating from a received data selection event are displayed with a lightning bolt icon in the left most column. These rows can be removed from the *data type view* by selecting them and clicking on the Remove Received Data Selections icon in the *data*

*type view* tool bar. The remove icon will not remove rows that were not received from a data selection event.




# Drag & Drop

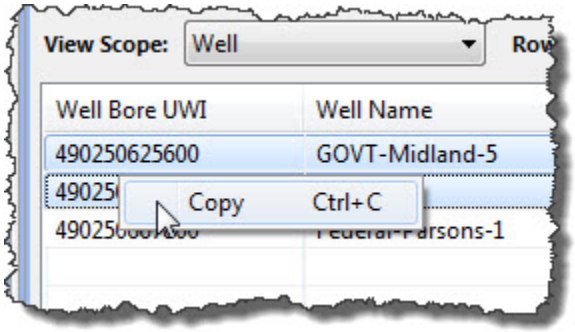
Selected rows can be dragged from the Data Selector and dropped on other applications that have been enabled as an OpenSpirit drag and drop target. The OpenSpirit viewers and many 3rd party applications can respond to data selection drop events that were initiated from the Data Selector. Dragging data selections is done by selecting one or more rows in the Data Selector, press and hold the left mouse button while moving the mouse to the application you wish to drop them on. Release the mouse button to complete the drag and drop operation.



Each drop target application responds in its own way to drops. Most applications respond to drops the same way that they respond to data selection events. The difference between sending a data selection event and performing a drag and drop is data selection events will be sent to all listening applications, whereas drag and drop will only affect the application that the drop is performed on.

## Copy to Clipboard

Selected rows can be copied from the Data Selector to your computer's clipboard to make them available for pasting into other application such as Microsoft Excel or Microsoft Word. Selected rows can be copied by pressing and holding the ***Ctrl*** key while pressing the ***C*** key. Rows can also be copied by pressing the right mouse button over the selected rows to display the right mouse button pop-up menu. Select the ***Copy*** option in the pop-up menu to copy the selected rows to the clipboard. The column header and all columns of the selected rows will be copied. Turn off display of any columns you do not wish to copy.

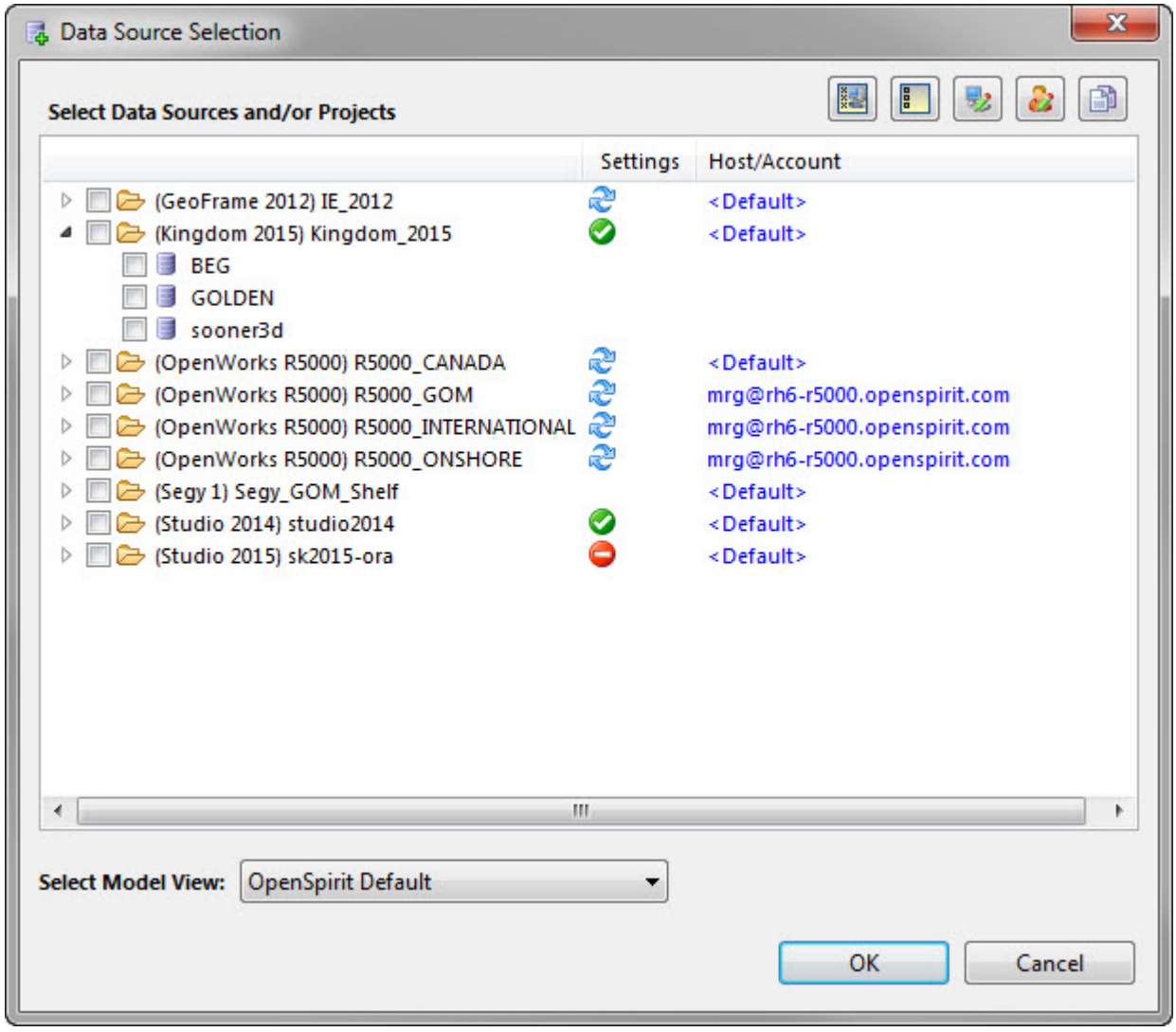



Rows can also be copied from Data Selector array details pop-up windows using ***Ctrl+C*** or the right mouse button pop-up menu.

# Data Source Selection Window

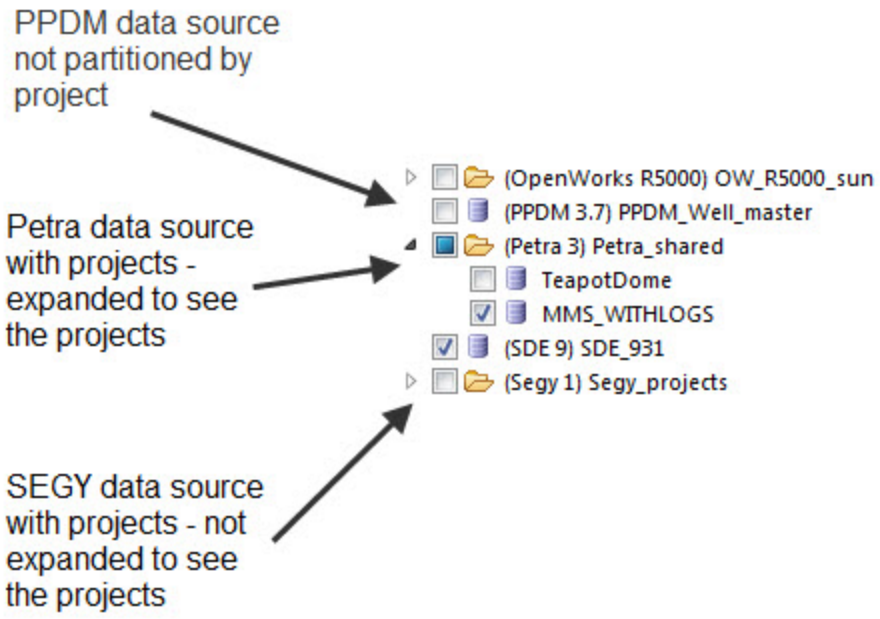
## Data Source Selection Window

The Data Source Selection window is used to select the sources of data that will be queried by the *Data Selector*. The Data Source Selection window opens automatically when activating the Data Selector tool. It can also be opened by clicking on the Select Data Sources icon in the Data Selector tool bar.




## Data source and project selection tree

The Data Source Selection window displays a list of all the OpenSpirit data sources that have been configured in your OpenSpirit installation. Data sources that partition data by project can be expanded to display their available projects by clicking on the right facing arrow that is located to the left of each data source containing projects.




Click on the check box next to the data sources and/or projects you wish to browse in the Data Selector and press the ***Ok*** button. The Data Selector will then appear in the OpenSpirit Desktop.

The check box next to data sources that contain projects has three selection states. The unchecked state ☐ indicates that none of the data source's projects are selected. The partially checked state ▣ indicates that at least one, but not all of the projects in the data source are selected. The checked state ☑ indicates that all of the data source's projects are selected.

- Some data sources (e.g. OpenWorks, Studio, and GeoFrame) will only show projects that the account used to run the OpenSpirit data connector has permission to access. This means the Host/Account settings of the data source may determine the projects that appear under the data source.
- Significant computer resources may be required to access each selected project. Try to minimize the number of projects you select.

## Settings Column

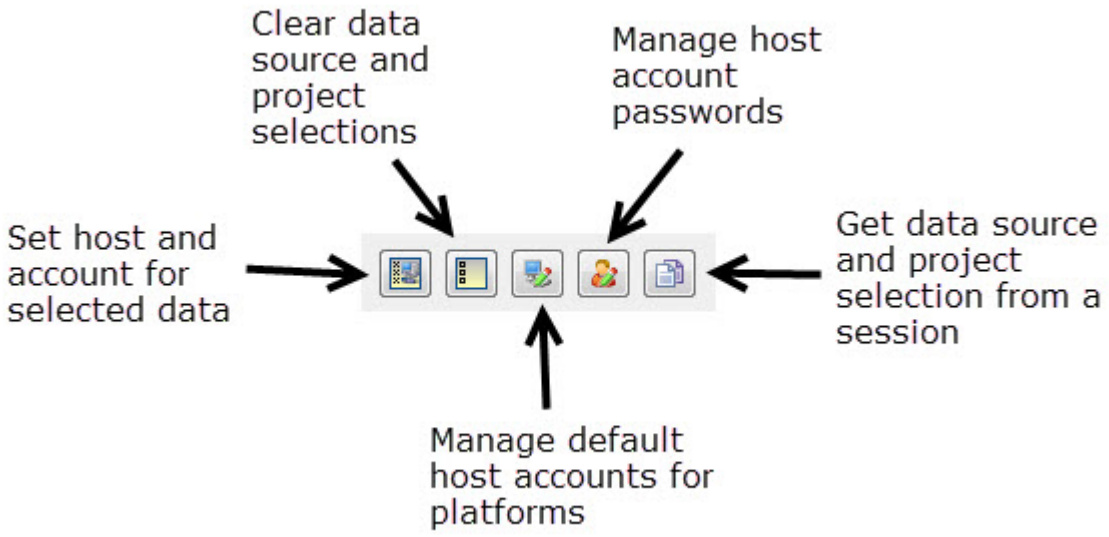
The Settings column displays icons that indicate the status of the credential settings for each data source. See the Settings_Icons section of this help guide for an explanation of the icons that appear in the Settings column.

## Host/Account Column

The Host/Account column displays the host computer and the operating system account that will be used to run data server processes for each data source. See the Host/Account section of this help guide for an explanation of the host/account setting.

## Tool bar

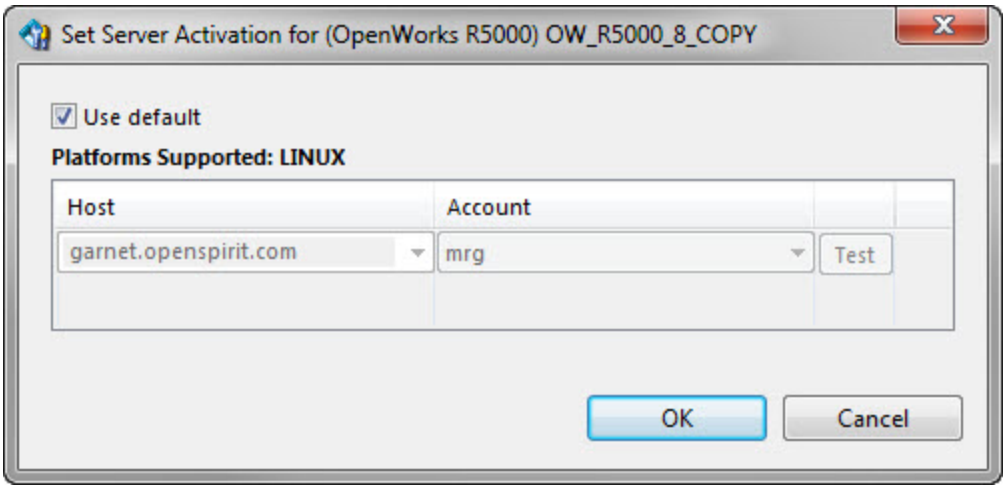
The Data Source Selection window provides a tool bar containing buttons used to manage data source selections and settings. The tool bar buttons are described below.




### Set host and account button 

Select one or more data sources in the data source tree and press the ***Set host and account button*** to open a window that can be used to set the host machine and operating system account that should be used to run the data server processes needed to access the selected data sources. The selected data sources must be supported to run on a common operating system platform.

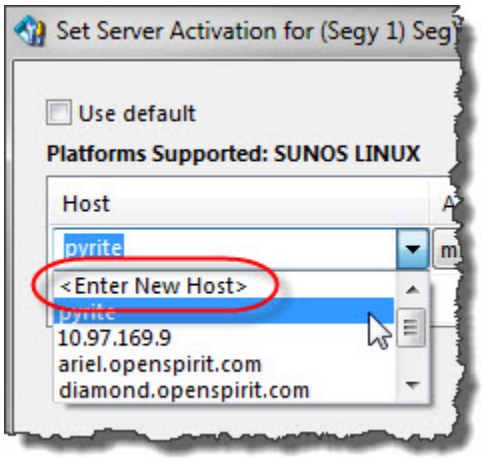
This will open the ***Set Server Activation*** window for the data source.




Un-check the ***Use Default*** option to enable selecting a specific host/account to use when accessing the data source. Check the Use Default option to use the host and account that has been set as the platform default.

### Host Selection

The host selection list contains a list of all host computers that are registered with your OpenSpirit installation and have an operating system type supported by the data source. The list may include hosts listed in the Satellites tab and the Visibility tab of the Install Config Manager tool for your OpenSpirit master installation. The list will also may include hosts you have selected as a platform default or as the host for other data sources.




The host selection list may have a choice that appears as ***<Enter New Host>***. The presence of the new host option in the host selection list is determined by the ***Host Discovery Enabled*** option of your master installation. See the Advanced Master Settings section of the Install Config Manager tool help guide for more information about this option.

The new host choice enables you to type in the name of a host that is not currently known to your OpenSpirit installation. Host names that cannot be resolved with your domain naming service (DNS) will not be allowed.

No check is made that the entered host name is a platform type that is supported by the data source. Platform incompatibility will not be detected until a request is made to start a new data server process on that host.

You can enter ***localhost*** as the host name for data sources that can run on Windows and on Linux in order to force the data server process to run on your Windows desktop. Otherwise the data server process will be started on your default Linux host.

### Account Selection

The account selection list contains the name of your OpenSpirit primary account, your OpenSpirit secondary account if you have one set, and any additional accounts you may have added using the Host Account Settings tab of the User Setup Wizard. You must use the User Setup Wizard to add accounts to the account selection list.

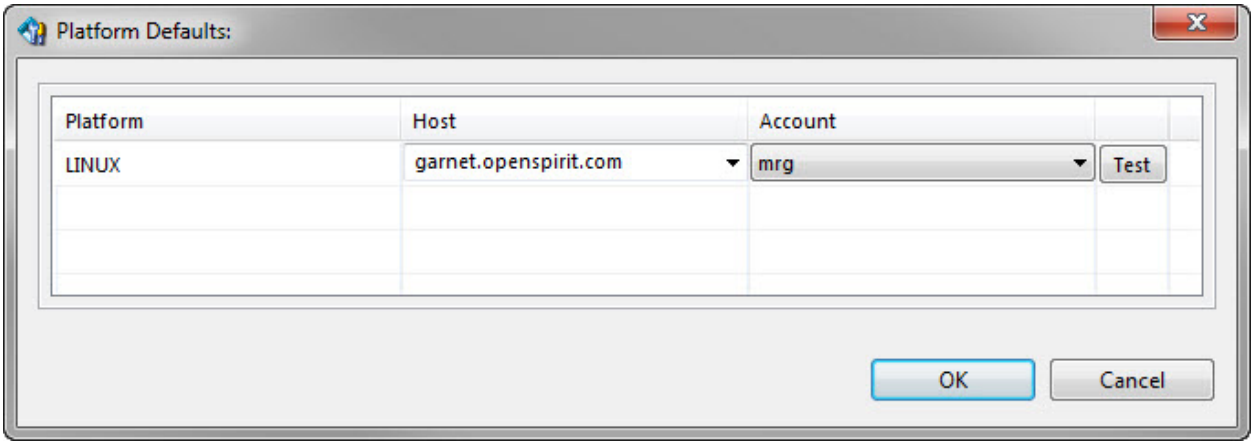
## Clear all selected button

The ***Clear all selected*** button de-selects all data sources and projects that are selected in the data source and project selection tree.

## Platform Defaults button

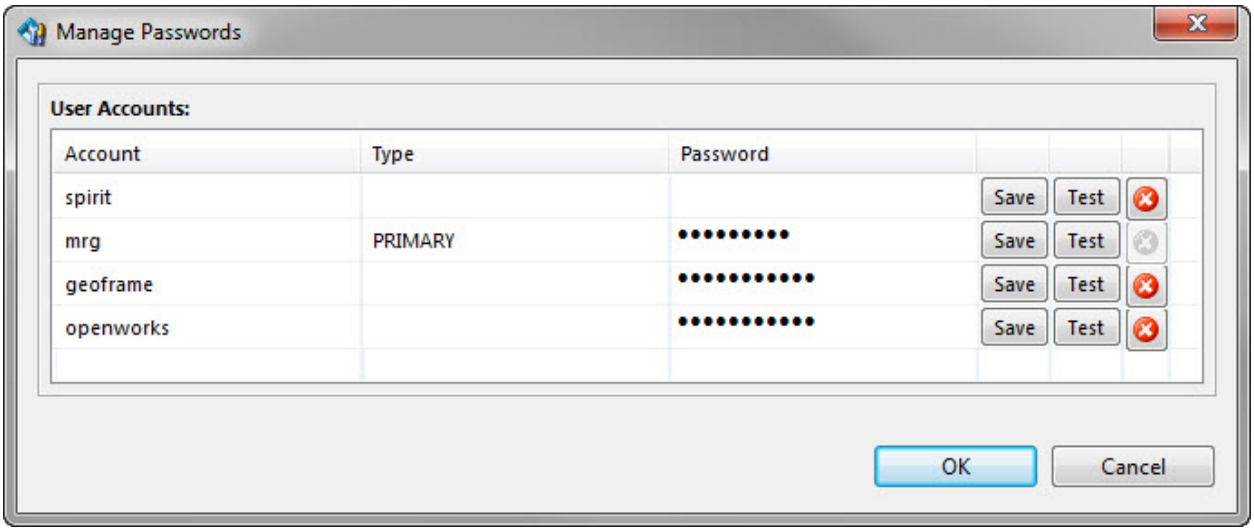
The ***Platform defaults*** button opens a window used to set the default host and account to use for each operating system platform that you have a master or satellite installed on. A default cannot currently be set for the Windows platform. The default for Windows is the Windows host you are running the OpenSpirit Desktop or OpenSpirit enabled application on.

The following image shows the platform defaults window for an OpenSpirit master that has installations on Linux. The appearance of the platform defaults window may differ from what is shown below depending upon the remote startup method configured in your OpenSpirit master installation. See the help guide for the Host Account Settings tab of the User Setup Wizard for details of setting the platform defaults.



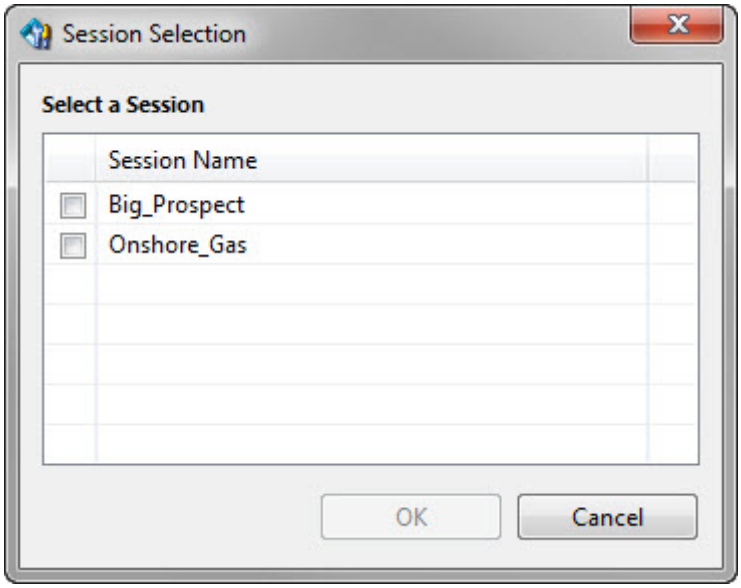
## Manage Passwords button

The ***Manage Passwords*** button opens a window that can be used to set the account passwords used for the operating system accounts used to run data server processes. The appearance of this window may differ from that shown below depending upon the remote startup method configured in your OpenSpirit master installation. See the help guide for the Host Account Settings tab of the User Setup Wizard for details of setting account passwords.



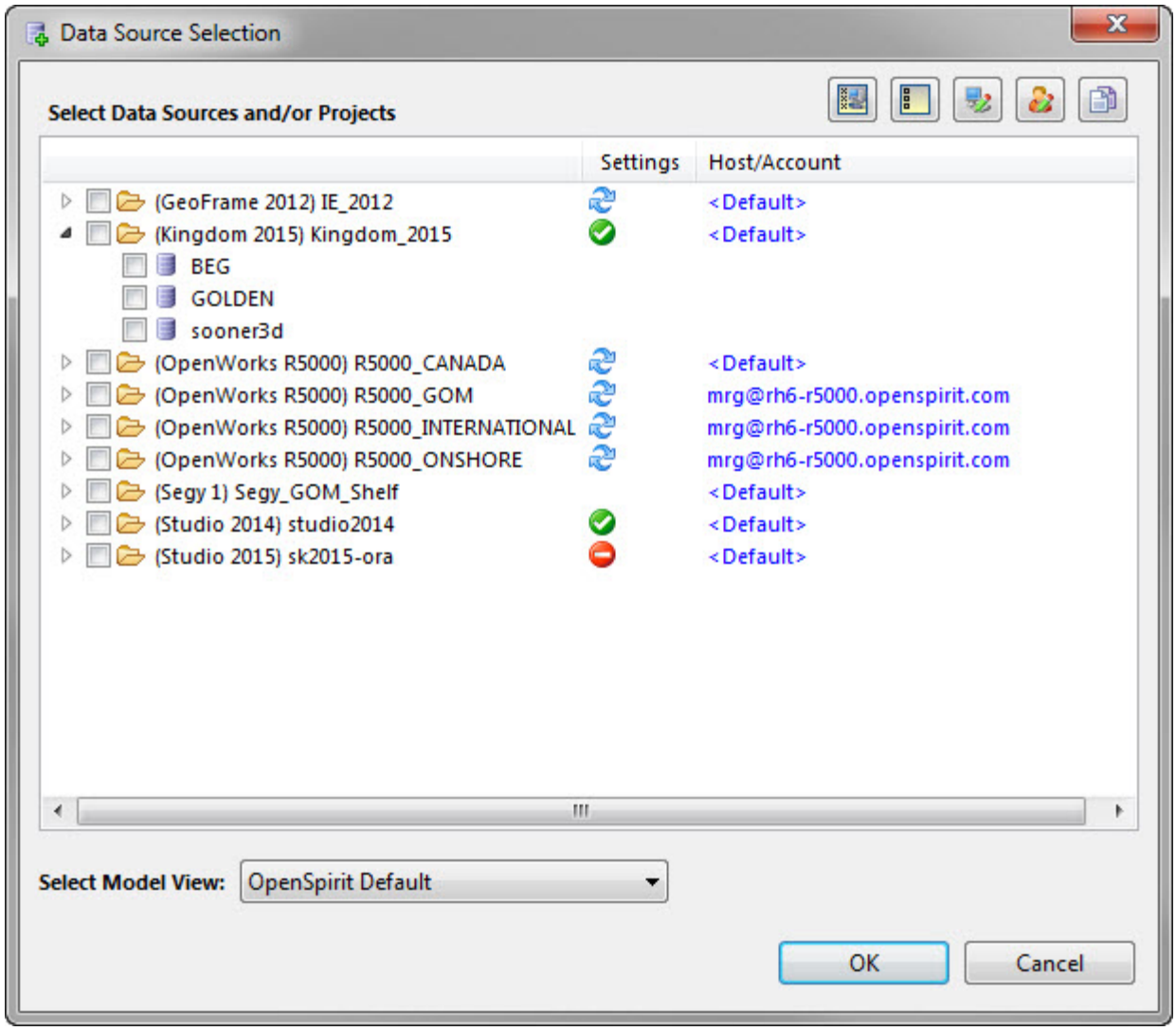

## Get from session button

The ***Get from session*** button allows you to select the data sources and projects from sessions that have been created with the OpenSpirit Session Manager tool. Clicking on the button opens a window that allows you to select a session. The data sources and projects listed in the selected session will be selected in the Data Source Selection Window's data source and project selection tree.



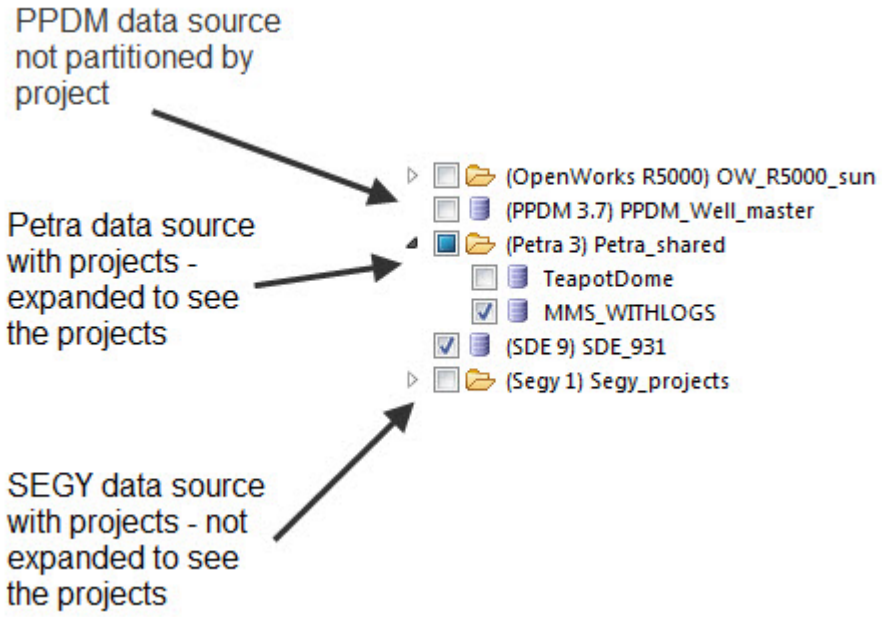
# Selecting Data Sources and Projects

The Data Source Selection window is used to select the sources of data that will be queried by the *Data Selector*. The Data Source Selection window opens automatically when activating the Data Selector tool. It can also be opened by clicking on the Select Data Sources icon in the Data Selector tool bar.




## Data source and project selection tree

The Data Source Selection window displays a list of all the OpenSpirit data sources that have been configured in your OpenSpirit installation. Data sources that partition data by project can be expanded to display their available projects by clicking on the right facing arrow that is located to the left of each data source containing projects.



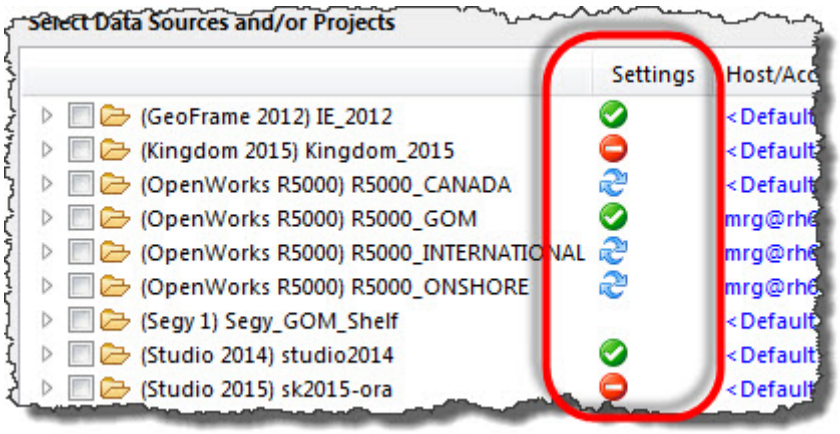

Click on the check box next to the data sources and/or projects you wish to browse in the Data Selector and press the ***Ok*** button. The Data Selector will then appear in the OpenSpirit Desktop.

The check box next to data sources that contain projects has three selection states. The unchecked state ☐ indicates that none of the data source's projects are selected. The partially checked state ▣ indicates that at least one, but not all of the projects in the data source are selected. The checked state ☑ indicates that all of the data source's projects are selected.

- Some data sources (e.g. OpenWorks and GeoFrame) will only show projects that the account used to run the OpenSpirit data connector has permission to access. This means the Host/Account settings of the data source may determine the projects that appear under the data source.
- Significant computer resources may be required to access each selected project. Try to minimize the number of projects you select.

# Data Source Settings

The ***Settings*** column to the right of the data source project selection tree is used to manage credentials that are needed to access some OpenSpirit data sources. Some credentials are optional and some are mandatory. Some OpenSpirit data source do not have any credentials.




## Settings Icons

The Settings column displays icons that indicate the status of the credential settings for each data source.

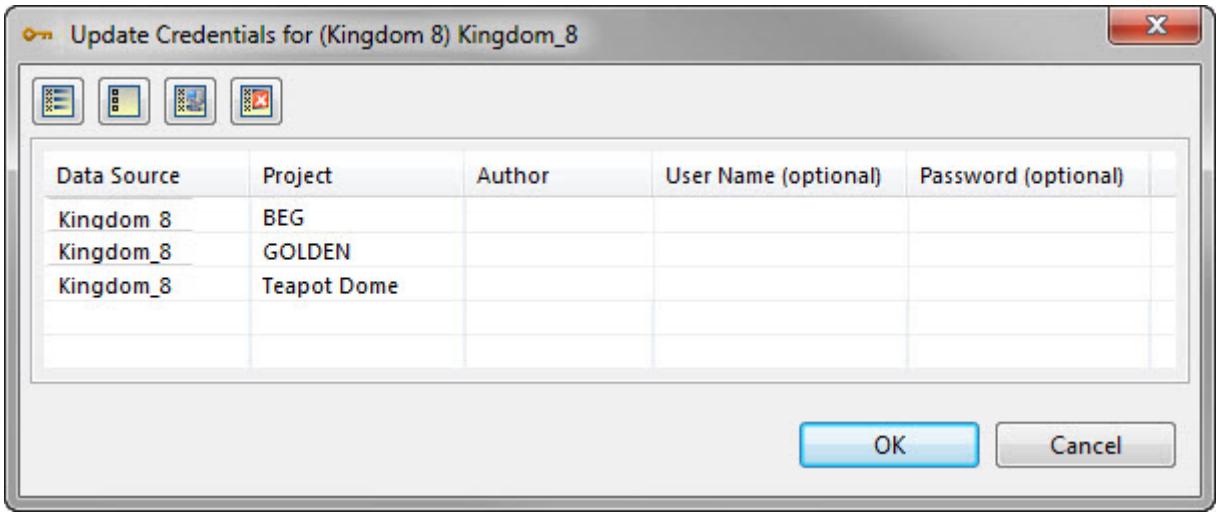
A blue recycle icon is shown next to data sources when the presence of credentials has not yet been determined. Credentials are not examined until you select a data source or project in order to speed up the display of the Data Source Selection window. You can also force a credentials check for a data source by clicking on the recycle icon.

A green check mark icon next to a data source indicates that all mandatory credentials needed to access the data source have been entered. Data sources with optional credentials, or with mandatory credentials that have default values supplied when configuring the data source are also shown with a green check mark icon. Click on the green check mark icon to display the settings window used to view and manage the credentials for a data source.

A red horizontal bar icon is shown next to data sources that have one or more mandatory credentials that have not been entered. The missing credentials must be entered prior to accessing these data sources. Click on the red horizontal bar icon to display the settings window used to enter the missing mandatory credentials.

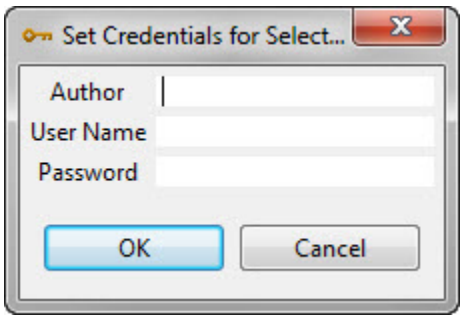
## Settings Windows

The windows that appear when you click on a settings icon are used to enter required and optional credentials that are used when connecting to a data source. The content of the window depends on the type of the data source (e.g. OpenWorks, Studio, Kingdom, etc.). Following is an example of a credentials window. See the Data Source Details section of the Data Source Configuration Tool Help guide for information about each of the data source type specific credentials windows.




Enter the missing credentials required by the data source and press the ***Ok*** button.

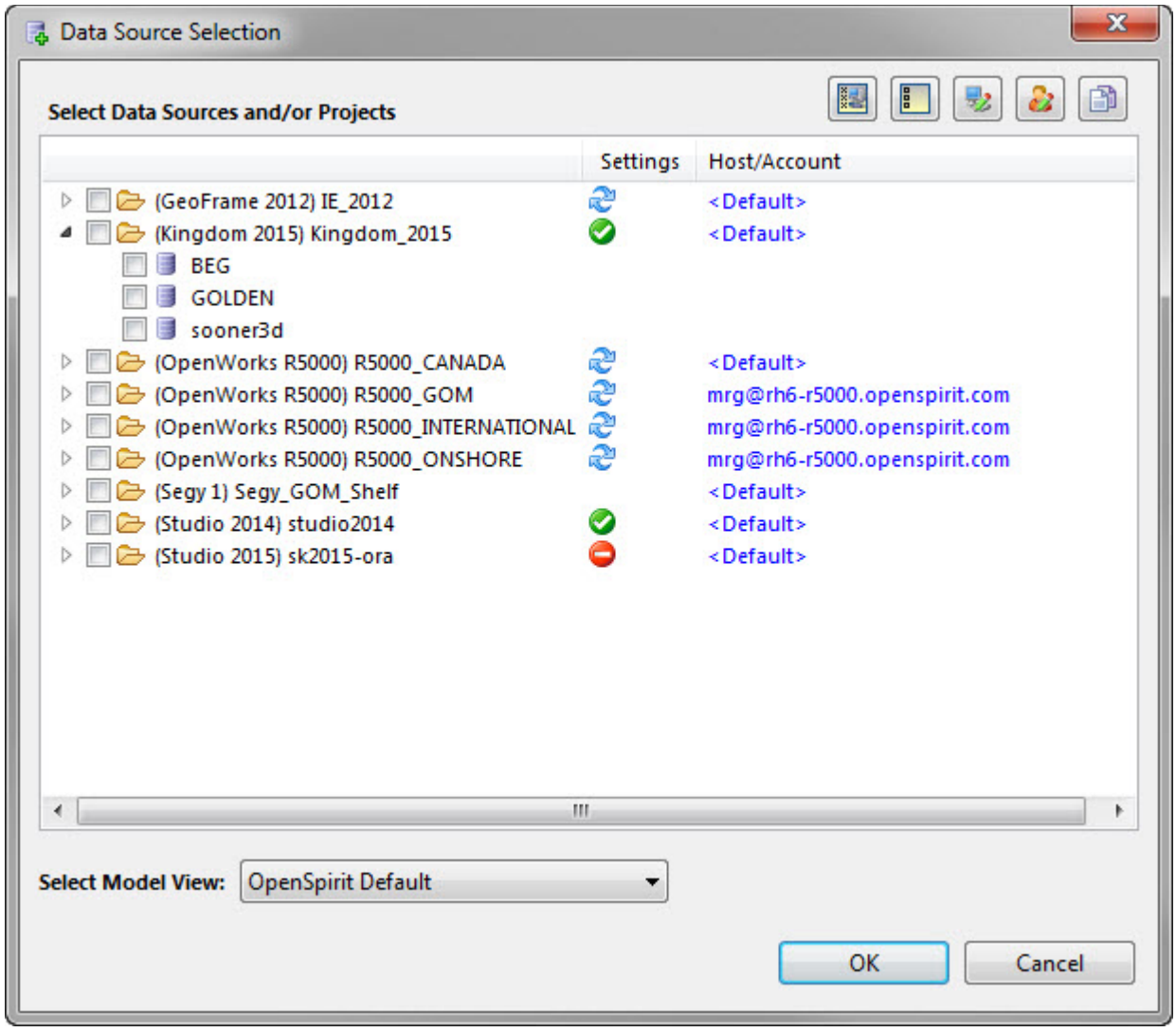
Data sources that require credentials at the project level will list all accessible projects in their credentials window. The same credential values can be entered for multiple projects by selecting the projects you wish to assign a credential value to and pressing the ***Set for Selected*** icon  in the credential window tool bar. This will open a window that can be used to enter credential values that will be applied to all selected projects.




Pressing the ***Clear credentials for selected rows*** icon  in the credential window tool bar will remove all credentials previously entered for all selected projects.

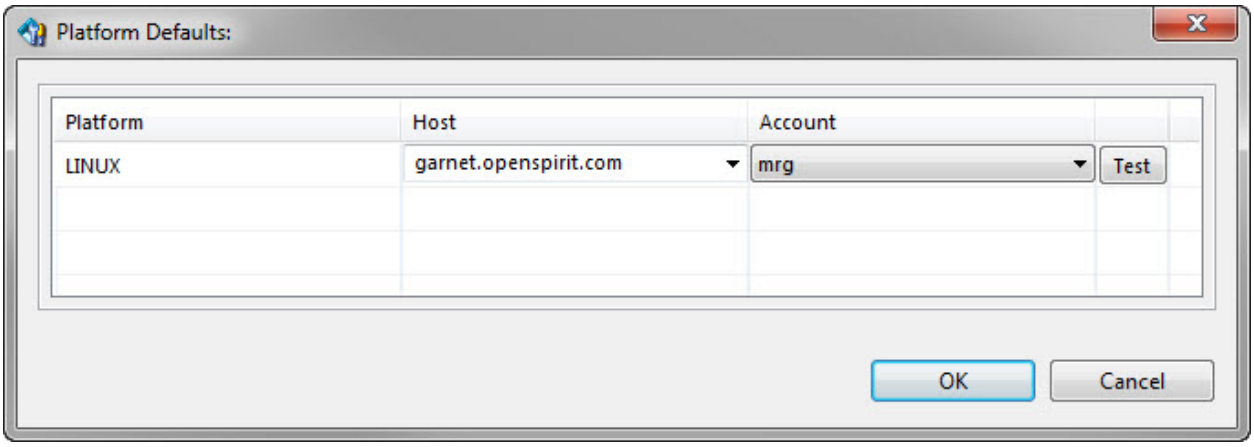
# Host, Account, & Password Settings

The host computer and account used to run OpenSpirit data connectors is determined by your ***Host/Account*** settings which is managed using the Data Source Selection window.




## Platform Defaults

Data connectors will run on the host and account that has been set as your default. Your default host account is set by clicking on the ***Platform Defaults*** icon in the Data Source Selection window tool bar. This opens the Platform Defaults window that is used to enter the host and account you want to use as your default to run OpenSpirit data connectors on for each operating system platform that is supported by the data sources that are configured in your OpenSpirit installation. Currently Linux is the only operating system platform that data connectors can be run on other than your local Windows desktop. Remote process creation on hosts running Windows operating system is not supported.

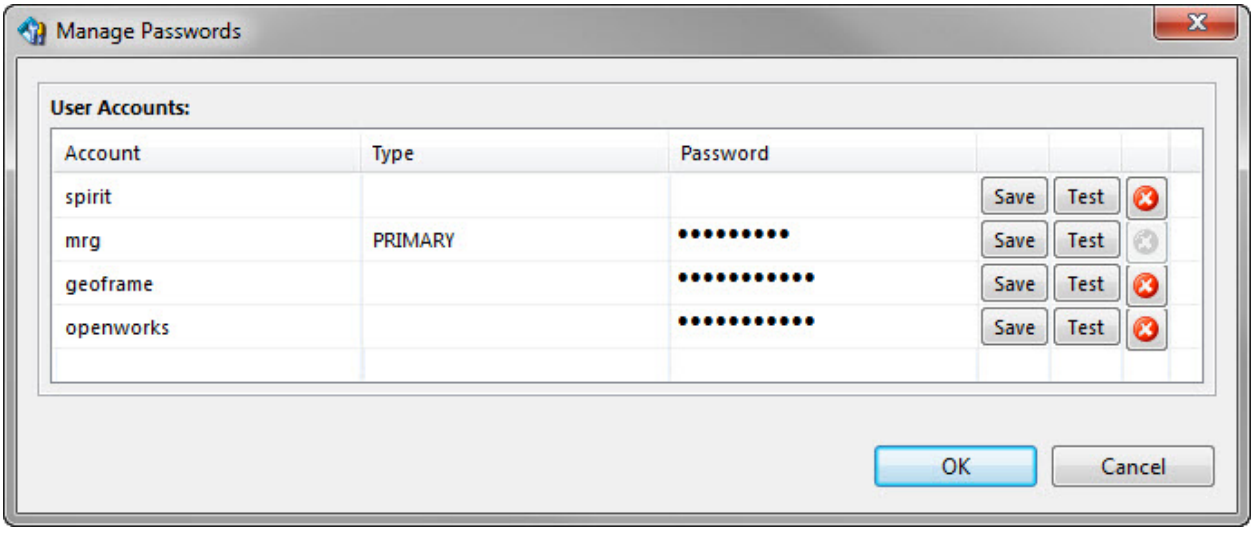



Enter the host name and select the account you would like to use for your default. Type a host name directly in the Host column if the host you would like to use is not in the host drop-down selection list.

Use the Host Account Settings tab on the User Setup Wizard tool to add a new account to the account drop-down list if the account you would like to use is not in the list.

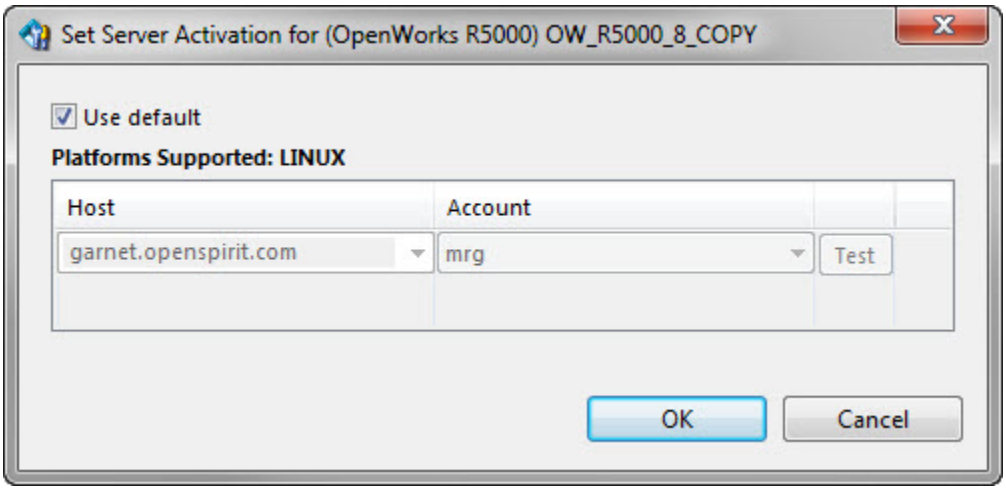
## Manage Passwords

Click on the ***Mange Passwords*** icon in the Data Source Selection window to open the Manage Passwords window. This window can be used to update your account password if it has changed. Type in the new password and press the ***Ok*** button.




Host and accounts can be set on individual data sources by clicking on the **<Default>** hyperlink next to the data source.

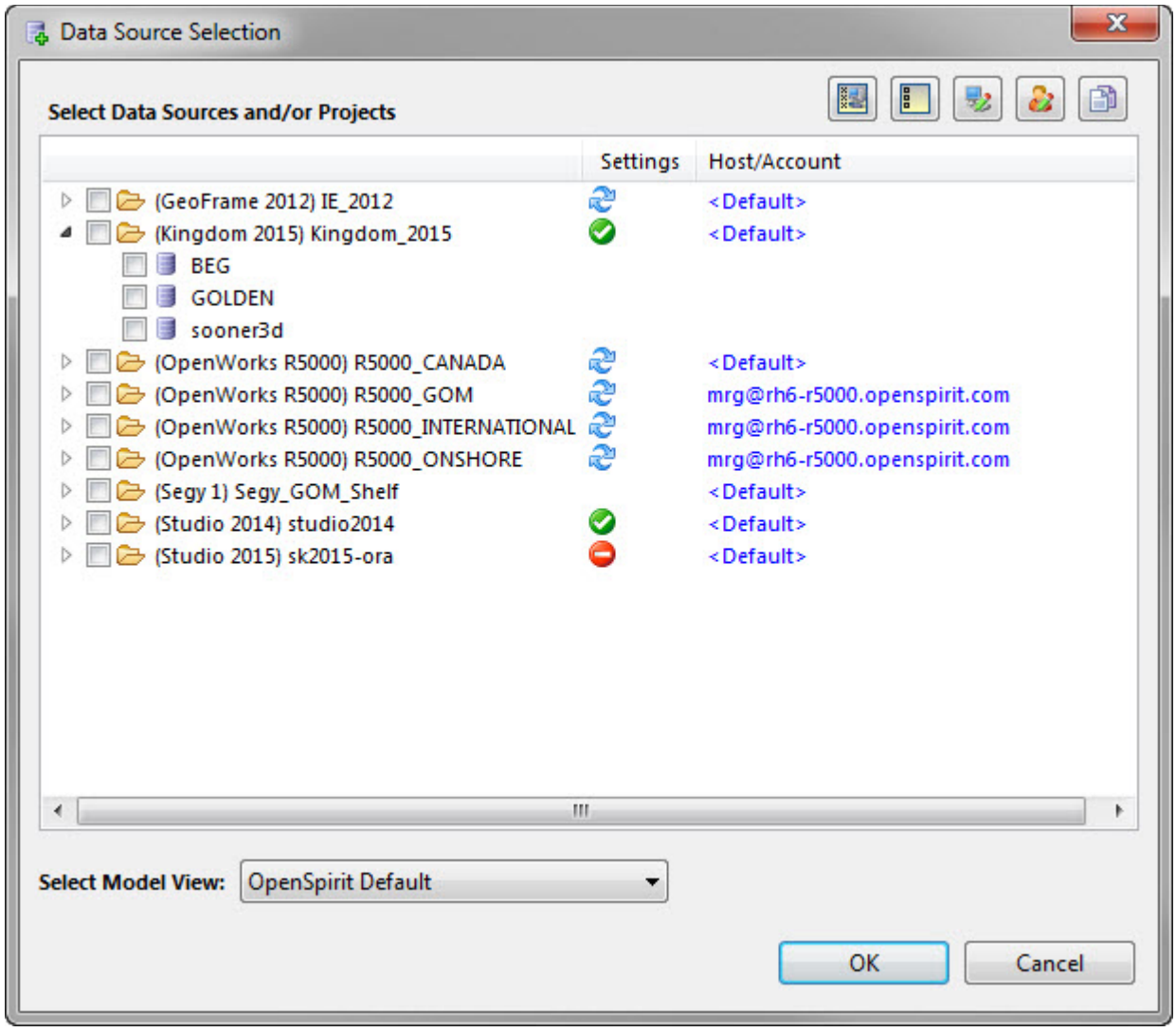

This will open the ***Set Server Activation*** window for the data source. Un-check the ***Use Default*** option to enable selecting a specific host/account to use when accessing the data source.




A specific host/account can be set on multiple data sources by selecting multiple data sources in the Data Source Selection window and pressing the ***Set host and account for selected*** icon  in the Data Source Selection window tool bar. This will open the ***Set Server Activation*** window for setting the host/account for the selected data sources. The selected data sources must be supported to run on a common operating system platform.

# Selecting a Model View

The Data Source Selection window can be used to select the data model or model view to be used by the data selector to display data. The data model or model view is selected using the ***Select Model View*** drop-down list at the bottom of the Data Source Selection dialog.




The drop-down list contains all data models and model views that are valid to use with the selected data sources. All data models and model views are shown in the model view selection list if no data sources have been selected.

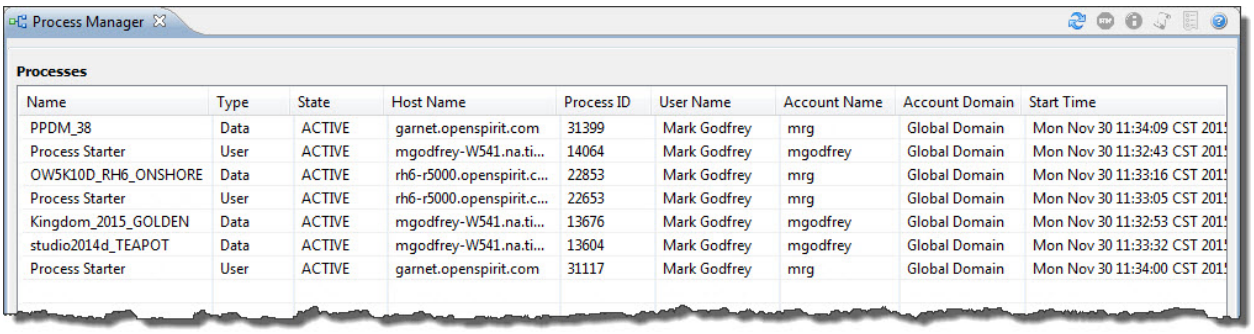
The selection list interacts with the data source display above it. Selecting data sources causes model views and data models to be removed from the model view selection list. Selecting a model view or data model in the data model selection list may remove data sources that cannot be viewed using the selected model view or data model. This interaction prevents selecting a combination of data source and model view that are incompatible. Any data source can be viewed using the OpenSpirit data model and model views. Data store specific model views and data models can only be used to view data sources of the same type.

# Process Manager Overview

The OpenSpirit framework provides access to multiple versions of a variety of *geoscience data repositories*. Each type of geoscience database has its own computing platform requirements that often change from one release version to the next. The *computing platform* required to access a particular data repository may differ from the computing platform used to run your application. The OpenSpirit framework enables these heterogeneous computing platforms to be bridged making it possible for your application to work with data that otherwise would not be accessible. This platform bridging requires the OpenSpirit framework to create processes on other computers in your company's network in order to work with data that is not accessible from your desktop computer.

Two types of processes are created by the OpenSpirit framework. They are *data connector* processes and *process starter* processes. These processes are created on demand when an OpenSpirit tool or an OpenSpirit enabled application needs to access a data repository. The processes run in the background with no user interface and terminate after some configurable period of inactivity. The Process Manager tool is used to monitor and control these background processes that are created by the OpenSpirit framework.

The Process Manager tool is accessed from the OpenSpirit Desktop by clicking on the Process Manager tool bar icon  or by choosing the ***Tools > Data Browser > Process Manager*** menu item. The Process Manager displays all of the background processes started by the OpenSpirit framework that are currently running. The Process Manager shows the processes that were created for the user that is running the OpenSpirit Desktop. The OpenSpirit Desktop shows processes that have been created for all OpenSpirit users when it is running from the OpenSpirit runtime administrator account or if the desktop has been put in *admin mode* using the admin mode button  in the desktop tool bar. The OpenSpirit shared service process is also shown when running in admin mode.




The process list displayed by the Process Manager is not automatically refreshed. A refresh button  is provided to force the Process Manager to update the process list to display the currently running processes.

The ***Name*** column in the process table displays the name given to the process by the OpenSpirit framework. Data connector process names include the name of the data source that it is connected to. Some data connector process names will also include the name of a

project if the data source does not permit a process to access multiple projects. Process starter processes all have the name ***Process Starter***. The OpenSpirit shared services process appears with the name ***Shared Service***.

The ***Type*** column categorizes the processes. Data connector processes appear with type ***Data***. Process starter processes appear with type ***User***. The shared service process appears with type ***Shared***. The type column is primarily provided to enable them to be grouped according to type by clicking on the column header to sort by type.

The ***State*** column provides an indication of the state of the process as it is starting. A process appears with a ***PENDING*** state between the time it was requested to start and the time it has completed its startup initialization. Processes appear with an ***ACTIVE*** state once they are fully initialized and ready to respond to requests.

The ***Host Name*** column shows the name of the computer that the process is running on. It may appear as an IP address during the PENDING stage of process startup.

The ***Process ID*** column shows the *operating system process id* of the process. This can be useful if you need to identify the process in the Microsoft Windows ***Task Manager*** or are using the UNIX ***ps*** or ***top*** command to monitor the process.

The ***User Name*** column shows the OpenSpirit user name of the user that caused the process to start. This may or may not be the same as their computer login account name.

The ***Account Name*** column shows the computer login account being used to run the process. This is most often the OpenSpirit user's login account name, but may differ if a different account was used when configuring data source host and accounts using the OpenSpirit User Setup wizard.

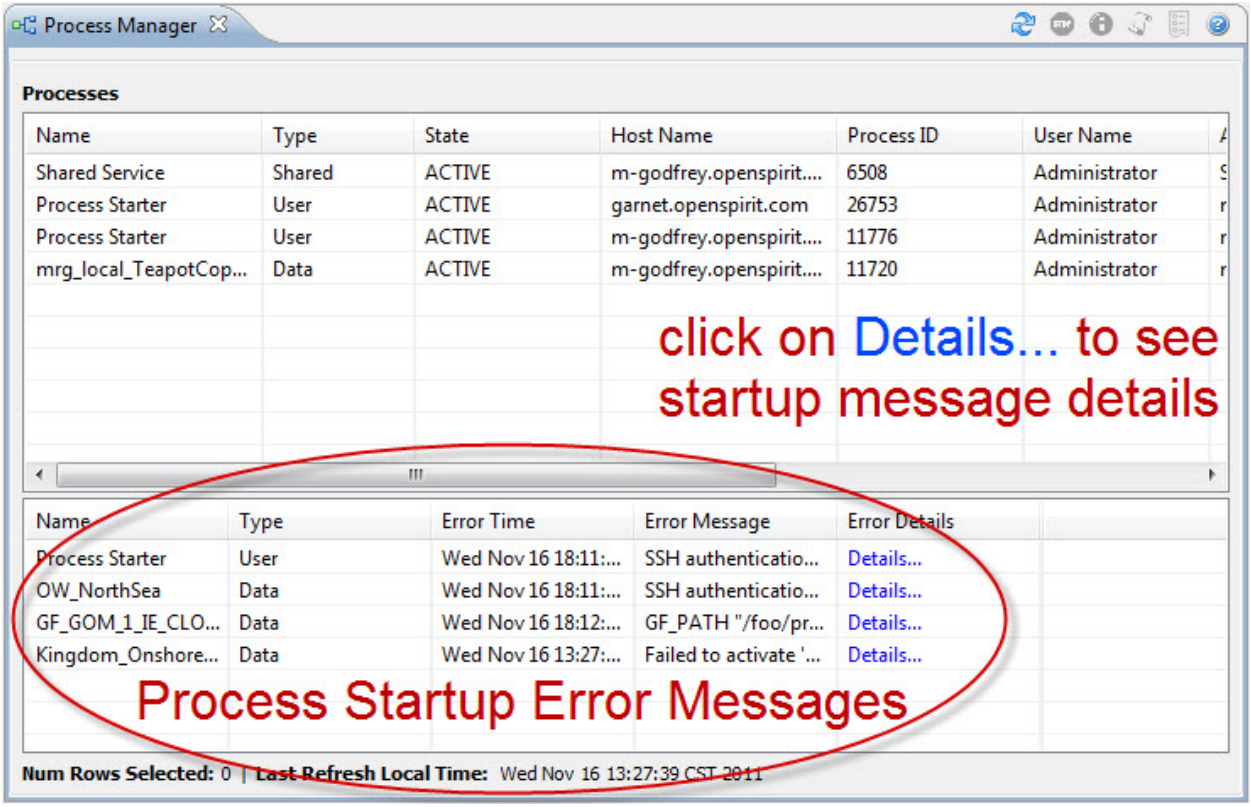
The ***Start Time*** column shows the date and time that the process started.

The ***Dedicated To*** column is usually empty. The OpenSpirit framework provides the ability for an application to request a data connector that will be dedicated for its use rather than sharing the data connector with other running applications. You may see something in this column when running the OpenSpirit Copy Manager to copy data into an OpenWorks or Studio data source. The value that appears will be the name of the copy job.

# Process Start Errors

Process start attempts by the OpenSpirit framework sometimes fail. The most common causes of failure are license checkout failure or invalid host, account, or password information entered into the User Setup wizard. Other common causes of failure are a database outage, invalid information entered into the Data Source Configuration tool, or a network outage.

A process startup failure causes a second process list to be opened in the bottom section of the Process Manager tool. This second list only shows process startup failures. The bottom section is not visible if there are no errors to be shown.




The process startup failure messages are maintained by the OpenSpirit framework for a period of time and then are purged from the system. The default time period before purge is determined by the ***Error Expiration Time*** setting on the OpenSpirit master installation advanced settings panel.

Select a startup failure message, press the right mouse button, and choose the ***Copy*** option to copy all of the selected startup error information to the system clipboard. The error information can then be pasted into an email message or document in order to preserve it before it is purged. The message information will be useful if the startup failure requires assistance from OpenSpirit support to resolve.

The information columns in the startup error message list are different from the columns in the active process list.

The ***Name*** column in the startup error list displays the same name that would appear in the active process list had the process successfully started. See the name column description in the previous section of this help guide.

The ***Type*** column in the startup error list also displays the same type that would appear in the active process list had the process successfully started. See the type column description in the previous section of this help guide.

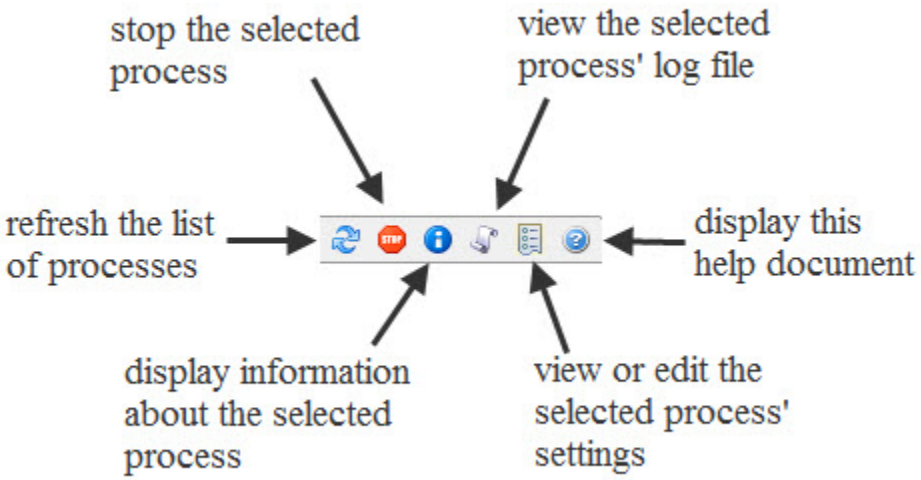
The ***Error Time*** column shows the date and time that the process start was attempted.

The ***Error Message*** column shows a message that describes the cause of the startup failure.

The ***Error Details*** column contains a **Details…** hyper link. Click on the hyper link to open a window that displays all of the startup error details.

# Process Manager Tool Bar

The Process Manager tool bar contains buttons used to monitor and control the active processes. These actions are described below. The tool bar resides in the upper right hand corner of the Process Manager window.




## Refresh Button

The refresh tool bar button will refresh the process list by looking for newly started processes and by removing any processes that are no longer running. The process list is automatically refreshed when returning to the Process Manager tool after using a different tool in the OpenSpirit Desktop.

## Stop Process Button

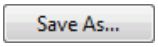
The stop process button is enabled when one or more active processes are selected. Clicking on the stop button will display a confirmation window. Answering ***Yes*** to the confirmation will stop all selected processes. Answering ***No*** to the confirmation will leave the selected processes running.

## Display Information Button

The display information button is enabled when a single active process is selected. Clicking on the information button opens a window that displays information about the selected process. The type of information that is displayed varies according to the process type. Data connector processes display the most information of all the process type. Data

connector process information includes the OpenSpirit licenses the process has checked out, the process' inactivity time out, process memory usage, the amount of time the process has been inactive, the processes log message level, the location and name of its log file, and a list of active connections to the data connector. Process starter processes do not display license information or active connection information.

# View Log File Button

The view log file button  is enabled when a single active process is selected. Clicking on the log file button opens a window that displays the content of the process' log file. The log file window contains a 

button that can be used to save the process' log file in a folder and file name of your choice. The window also provides a refresh button and an option to control line the wrapping behavior of the log window.

The selected process may be running on a different computer than is being used to run the OpenSpirit Desktop. This does not matter. The OpenSpirit framework can display an active process' log file even if the process is running on a different computer that does not expose its file system to the computer you are running the desktop on. However, very large log files may cause sluggish performance when viewing and refreshing the log file window. This most commonly occurs when the process log level has been set to the ***Debug*** or ***All*** level of logging.

# View or Edit Settings Button

The view or edit settings button  is enabled when a single active process is selected. Clicking on the settings button opens a window that displays the process settings that can be modified to control some aspects of the process' behavior. The settings that can be controlled are the process inactivity time out and the process message log level. The settings window also contains a ***Dump Stack Traces*** button. Clicking on this button causes thread call stacks to be printed to the process' log file. The call stack information can sometimes be useful to OpenSpirit support personnel when investigating a problem.

## Process Time Out

Process starter and data connector processes will shut themselves down after a period of inactivity. Process starter inactivity is measured based on the amount of time that has elapsed since it was last requested to start a process. Data connector inactivity is measured based on the amount of time that has elapsed since an application used the data connector to connect to its data source. The process inactivity timer does not start until all applications have disconnected from the data connector process.

Some applications may remain connected even though they are not making any data read or write requests. There is a separate activity time out that is used to forcibly close unused but open application connections. This time out is referred to as a ***connection time***

***out***. The default connection time out is 8 hours. The default time out is rather large to prevent the OpenSpirit framework from forcibly closing an application connection and possibly causing loss of work when the application user may have merely gone to lunch or to a long meeting. Applications are free to override the 8 hour default when making their connections to a data source.

The default process starter time out and the default data connector time out are determined by the OpenSpirit master installation's advanced settings. Speak to your local OpenSpirit administrator if you feel the default time is too short or too long.

## Log Levels

The log level determines the amount of information that is written to the process' log message file. The WARN level is the default for most process types. The meaning of each log level is described in the following table.

| Log Level | Description |
|---|---|
| **ERROR** | Produces the least amount of log file output. This level should only be used if you have no interest in anything but failures. |
| **WARN** | Produces less output than INFO. Consider using this level if you are trying to keep the log file size down and are not interested in details of successful operations. Only failure information is reported. Messages about data that could not be copied or scanned are produced, but messages about successful a successful copy or scan are not produced. |
| **INFO** | The default level. This is the recommended log level. It produces a reasonably detailed amount of information about the job execution. Messages about the number of each data type copied or scanned is produced using this log level. |
| **DEBUG** | Produces a large amount of output. You typically should not use this level unless instructed by OpenSpirit support. Large numbers of program execution messages needed to diagnose problems are produced when this log level is used. |
| **ALL** | Produces a tremendous amount of output. This level should never be used unless instructed by OpenSpirit support. Volumes of very detailed program execution messages needed to diagnose difficult problems are produced when using this log level. This log level may produce multi-gigabyte log files. |

# Help Button

The help tool bar button  is always enabled. Clicking on the help button opens this help guide.

# Sessions

A ***Session*** is simply a set of data source selections, a coordinate system preference, and a set unit of measure preferences that has been given a name. Sessions are most commonly used in conjunction with the OpenSpirit Data Selector or with third party OpenSpirit enabled applications that make use of OpenSpirit sessions. Sessions are stored in the OpenSpirit master installation's database. The Using Sessions section of this help guide describes some of the ways that sessions can be used in the OpenSpirit Desktop.

Earlier versions of the OpenSpirit framework required sessions to be created for many work flows. Session creation and use is now optional in OpenSpirit tools and applications. There may still be third party applications that require sessions to be created when connecting to the OpenSpirit framework.

## Session Visibility

Sessions can be public or private. Public sessions are visible to all OpenSpirit users. Private sessions are only visible to the user that created them. OpenSpirit administrator privileges are required to create, modify, or delete public sessions. Public sessions provide a way for a collection of sessions to be created and shared with all OpenSpirit users.

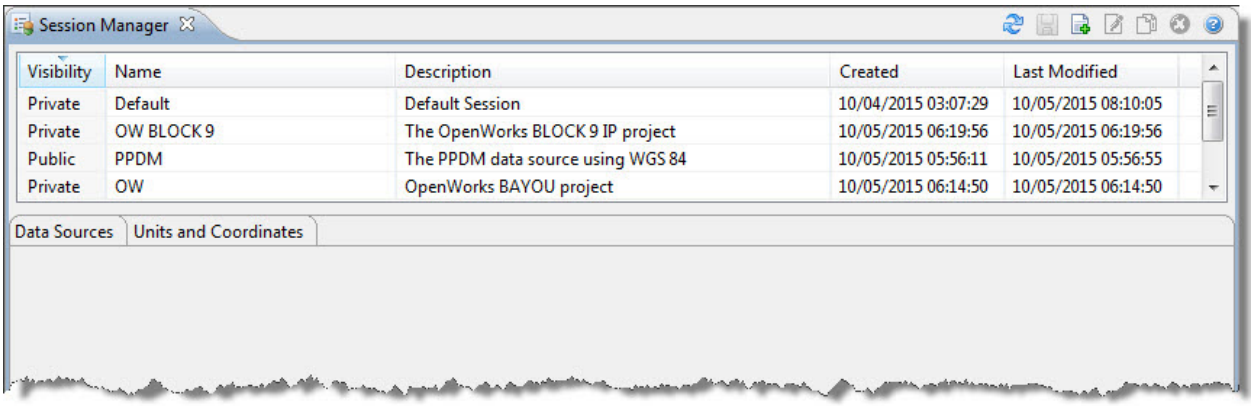
## Session Name Uniqueness

Public sessions must have unique names. A user's private sessions must have unique names. Private sessions may be given the same name as a public session. Private sessions may also have the same name as another user's private session. A user's private session that has a name that is identical to the name of a public session will hide the public session from that user. Deleting a private session that has a name that matches a public session's name will make the public session visible to the user again.

# Session Manager Overview

The Session Manager Tool is accessed from the OpenSpirit Desktop by clicking on the Session Manager tool bar icon  or by choosing the ***Tools > Data Browser > Session Manager*** menu item. The Session Manager tool is used to inspect, create, delete, and modify sessions.

The table in the top portion of the Session Manager window lists all public sessions together with all private sessions created by the user. The Session Manager also provides a tool bar with buttons used to create, view, modify, and delete sessions displayed in the table. The bottom portion of the Session Manger window is used when creating, viewing, or modifying a session.




The ***Visibility*** column in the session table indicates the public or private visibility of each session. Public sessions that are hidden by a private session having the same session name are not visible in the session table.

The ***Name*** column shows the name that was given to each session when it was created. Session names cannot be changed.

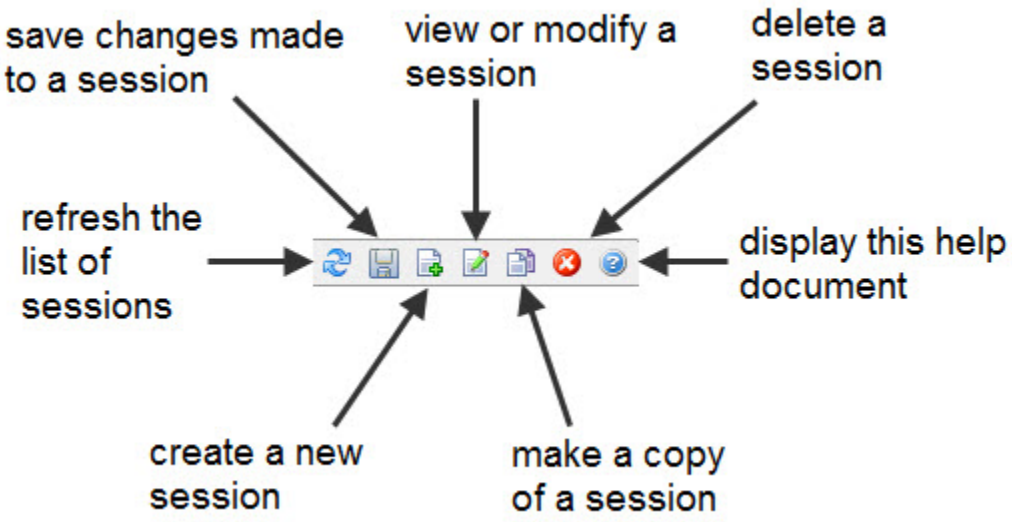
The ***Description*** column shows a textual description of a session. The description is optional and may contain any information that the session creator feels is appropriate.

The ***Created*** column shows the date and time the session was first created.

The ***Last Modified*** column shows the date and time that any change was made to the session.

# Session Manager Tool Bar

The Session Manager tool bar contains buttons used to create, edit, copy, and delete sessions. These actions are described in the following sections of this help guide. The tool bar resides in the upper right hand corner of the Session Manager window.




## Refresh Button

The refresh tool bar button  will refresh the session list by re-reading the information from the OpenSpirit master installation's database.

## Save Session Button

The save session tool bar button  will save a newly created session or will save modifications made to an existing session.

## Create New Session Button

The create session tool bar button  will open the session editor wizard in the bottom section of the session manager window enabling the new session information to be entered. See the Creating New Sessions section of this help guide for information about use of the session editor wizard to create sessions.

# Edit Session Button

The edit session tool bar button  is enabled when a session is selected in the session list. Clicking on this button will open the selected session in the session editor wizard to make it available for viewing or editing.

# Copy Session Button

The copy session tool bar button  is enabled when a session is selected in the session list. Clicking on this button will open a prompt for the name to use for the new session copy. The new copy will appear in the list of sessions. The copy can then be selected and modified by clicking on the edit session button.

# Delete Session Button

The delete session tool bar button  is enabled when one or more sessions are selected in the session list. Clicking on the delete button will display a confirmation message. All selected sessions will be deleted when the confirmation window's Ok button is pressed. Deletions cannot be undone.

 The delete button is not enabled if any public session is selected and the OpenSpirit Desktop is not in admin mode. Public sessions can only be deleted when the OpenSpirit Desktop is in admin mode.

# Help Button

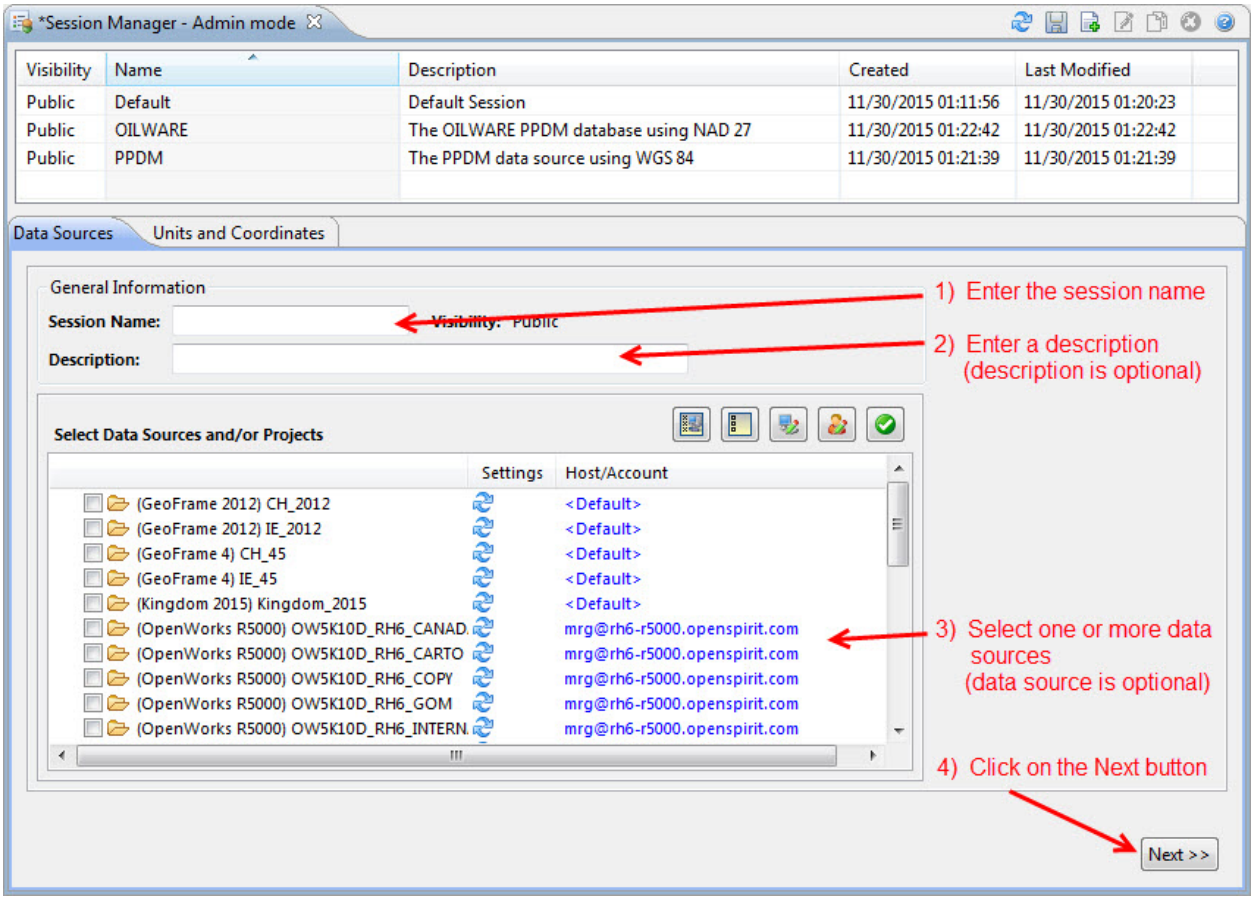
The help tool bar button  is always enabled. Clicking the help button opens this help guide.

# Creating New Sessions

New sessions are created by clicking on the ***Create a new session*** icon in the Session Manager tool bar. This will open the session editor wizard in the lower portion of the Session Manager window. Enter the name, a description, and select one or more data sources. The session name is required, but the description and data source selection is optional.

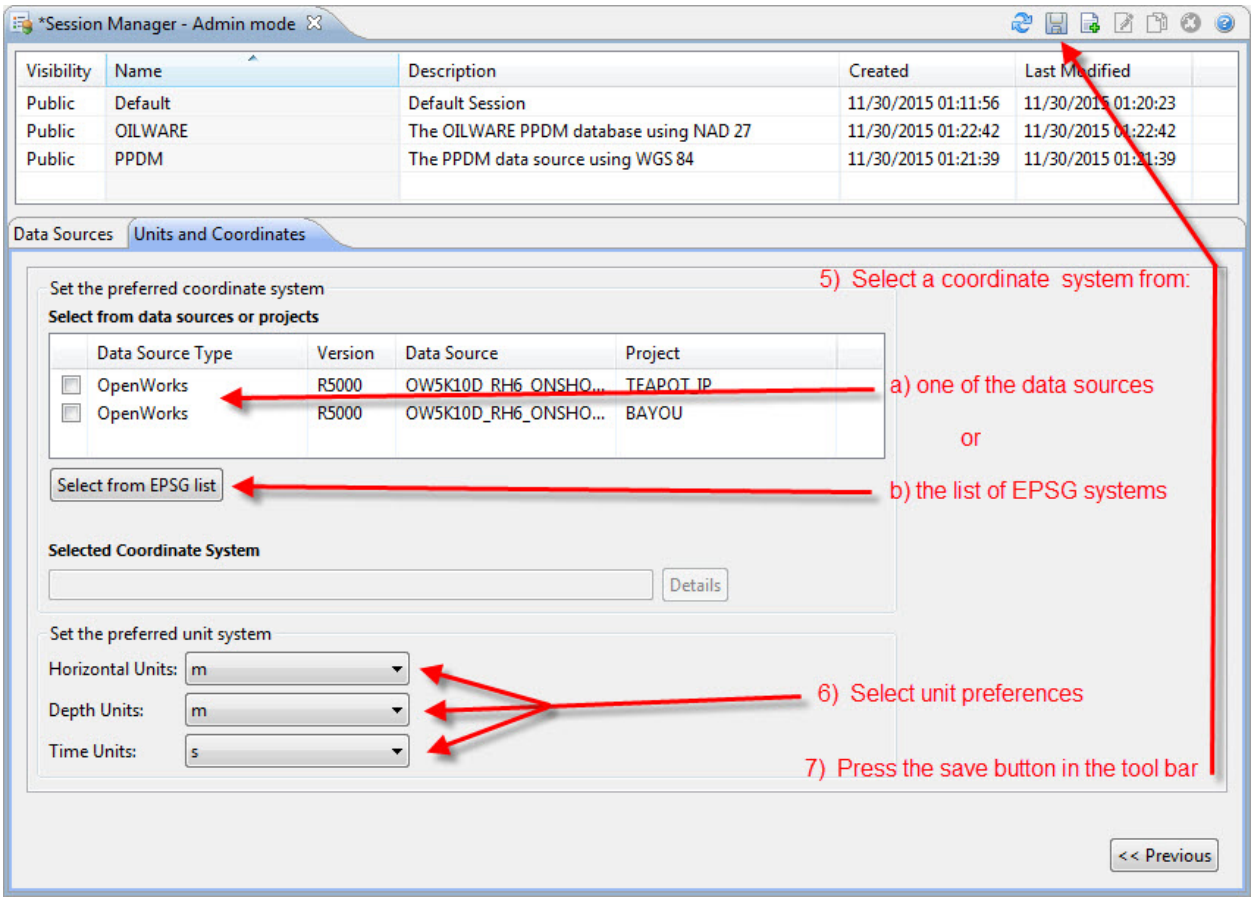
A session with no data source selection can be a convenient way to create a named coordinate system and unit preference without binding it to a specific data source selection.

The session's visibility is indicated to the right of the session name entry field. ***Private*** visibility means the session can only be seen by the user that created it. ***Public*** visibility means the session can be seen by all users except for users with a private session having the same name as the public session. The session will be created with public visibility if the OpenSpirit Desktop is in admin mode. The OpenSpirit Desktop is in admin mode when running the on the OpenSpirit administrator account. The OpenSpirit Desktop can also be put into admin mode using the admin mode toggle in the desktop tool bar.

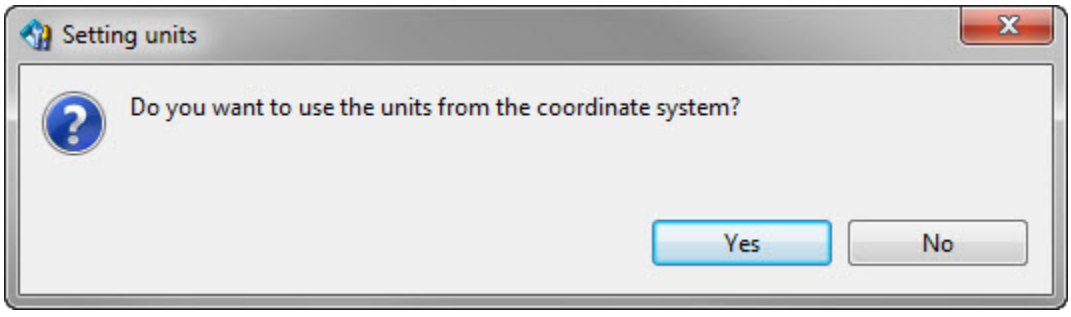


Press the Next >> button in the lower right corner of the session editor wizard to advance to the Units and Coordinates panel.

The data sources that were selected on the previous wizard panel appear in a list at the top of the Units and Coordinates panel. The session's coordinate reference system can be selected from one of these data sources, or it can be selected from the list of predefined EPSG coordinate reference systems by clicking on the Select from EPSG list button. See the Coordinate System Preferences section of the OpenSpirit Desktop Help guide for information about using the EPSG coordinate system selection window.




A window will appear after the session coordinate system is selected that asks if you want to use the coordinate system for the session's unit preferences. Answering yes will cause the unit preferences to be set to the units found in the selected coordinate system.



The last step to creating the session is to select the unit preferences and then press the save button  in the Session Manager tool bar to create the new session. The new session will appear in the session list when the save is performed.

# Viewing and Editing Sessions

A session's description, data source selections, coordinate system preference, and units' preference can be viewed and modified by opening the session in the session editor wizard. Open a session in the session editor wizard by selecting it in the session table and pressing the edit session button  in the Session Manager tool bar. Sessions can also be opened by double clicking on the session in the session table.

 The edit session button is not enabled when a public session is selected and the OpenSpirit Desktop is not in admin mode. However, double clicking on a public session will open it in the session editor wizard. Any changes made to the public session when not in admin mode will cause a private session with the same name to be created. The new private session will hide the public session for that user. Deleting the private session will restore visibility of the public session it was created from.

 Changes can be made to a session that was opened in order to view it, not to modify it. Take care to not press the save button if unwanted changes are accidently made to a session while viewing it in the session editor wizard.

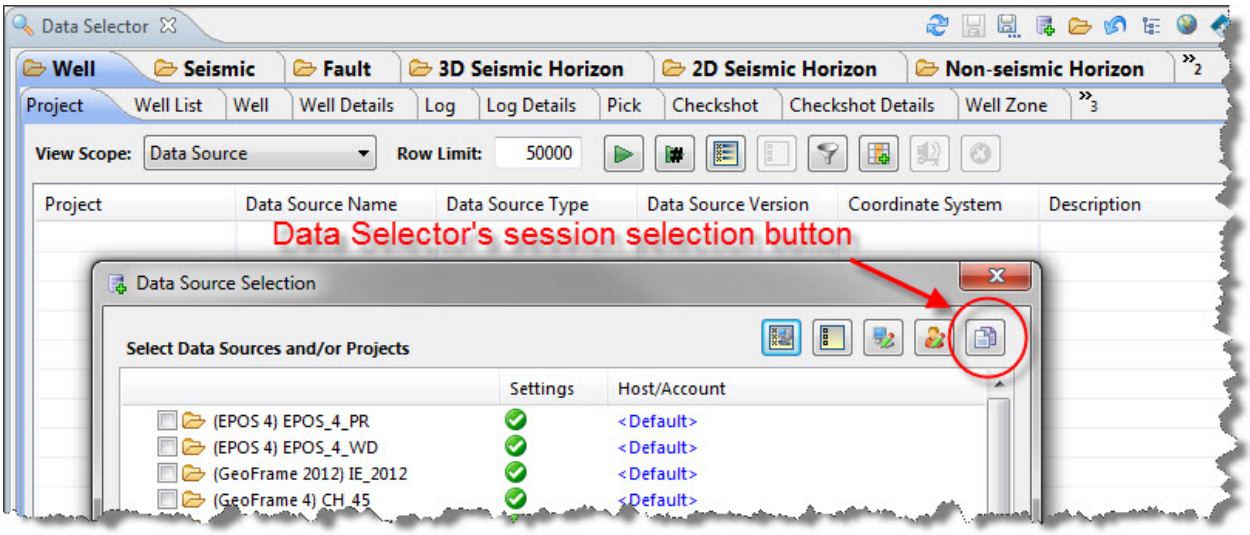
Press the save button  once all desired modifications have been made to the session.

# Using Sessions

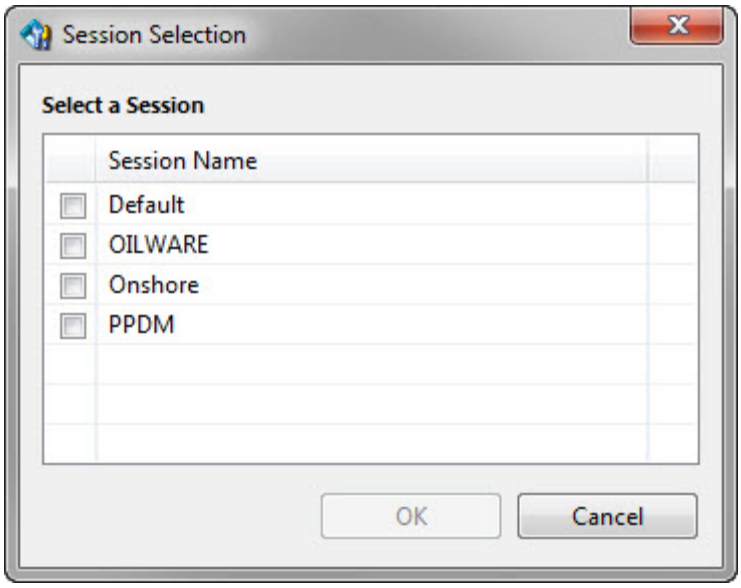
Sessions can be used in a variety of ways in the OpenSpirit Desktop and in other OpenSpirit enabled applications. This section of the help guide describes a few of the ways sessions can be used.

## In the Data Selector

The most common use of sessions is to establish a coordinate system preference, a unit preference, and a data source selection preference that can be easily selected when using the OpenSpirit Data Selector. Any combination of these preferences can be assigned to a session which can then be selected when the Data Selector's Data Source Selection window appears.



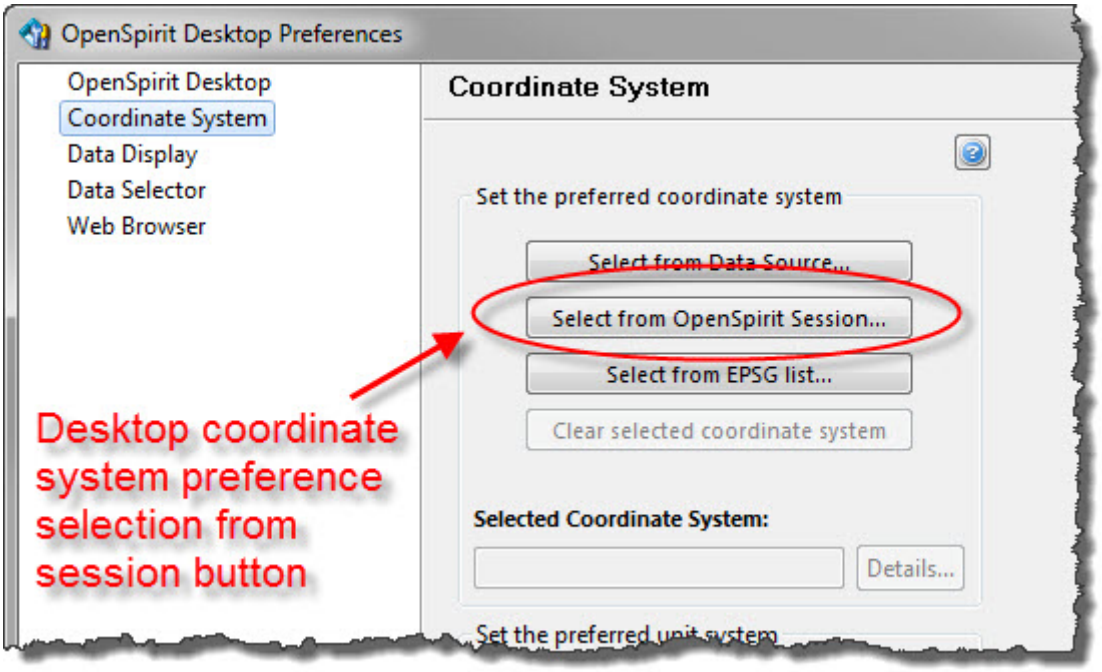

Clicking on the session selection button  in the Data Source Selection window's tool bar opens a session selection window that can be used to select a session.




Select one of the sessions and press the Ok button. The selected session's data source selections, coordinate system preference, and unit preference will then be used by the Data Selector.

# Desktop Coordinate System Preferences

Sessions can also be used to select the OpenSpirit Desktop's coordinate system preference. Click on the ***Select from OpenSpirit Session...*** button to select the desktop coordinate and unit preferences from a session.



# Administration Tools

## Topics

# Data Source Configuration

In order for OpenSpirit to access data in the various vendor data sources, you must "tell" OpenSpirit about each source, which is known as configuring the data sources. With the introduction of Satellite installations and Windows based data sources, the task of configuring all of the possible combinations of data sources is quite complex. In this section we will describe the configuration of all supported data sources and the strategy required to properly configure data sources on satellite installations. The tool used by OpenSpirit administrators to setup and configure supported data sources is the Data Source Configuration Tool, which is available in the OpenSpirit Desktop.

The Data Source Configuration Tool is the primary means of configuring vendor data sources in OpenSpirit on Linux and Windows. The information does vary between data sources but in general it consists of:

- The name of the configuration; this is a free-form unique name given by you.
- Vendor data source install directory locations; this is used to access vendor libraries and functions.
- Database information relating to the data sources; this is used to access project data in the vendor's data sources.
- Vendor license information pertaining to the data sources; which is needed in order to checkout a vendor data source license.

The configured vendor data sources contain project data that users can access using tools and applications developed with the OpenSpirit framework. The supported vendor data sources that can be configured in OpenSpirit are listed in the Data Source Details section of this guide.

A command line data source configuration utility is also available. The command line utility is described in the Command Line Configuration Utility section of this guide.

# Data Source Configuration Overview

## Getting Started

The Data Source Configuration tool is accessed from the OpenSpirit Desktop by clicking on the Data Source Configuration tool bar icon  or by choosing the ***Tools > Administrator > Data Source Configuration*** menu item.

The Data Source Configuration tool is platform aware, and will only configure data sources that run on the platform's operating system that the tool was started from. The supported platforms for each data source type are listed in the Data Source Details section of this guide.

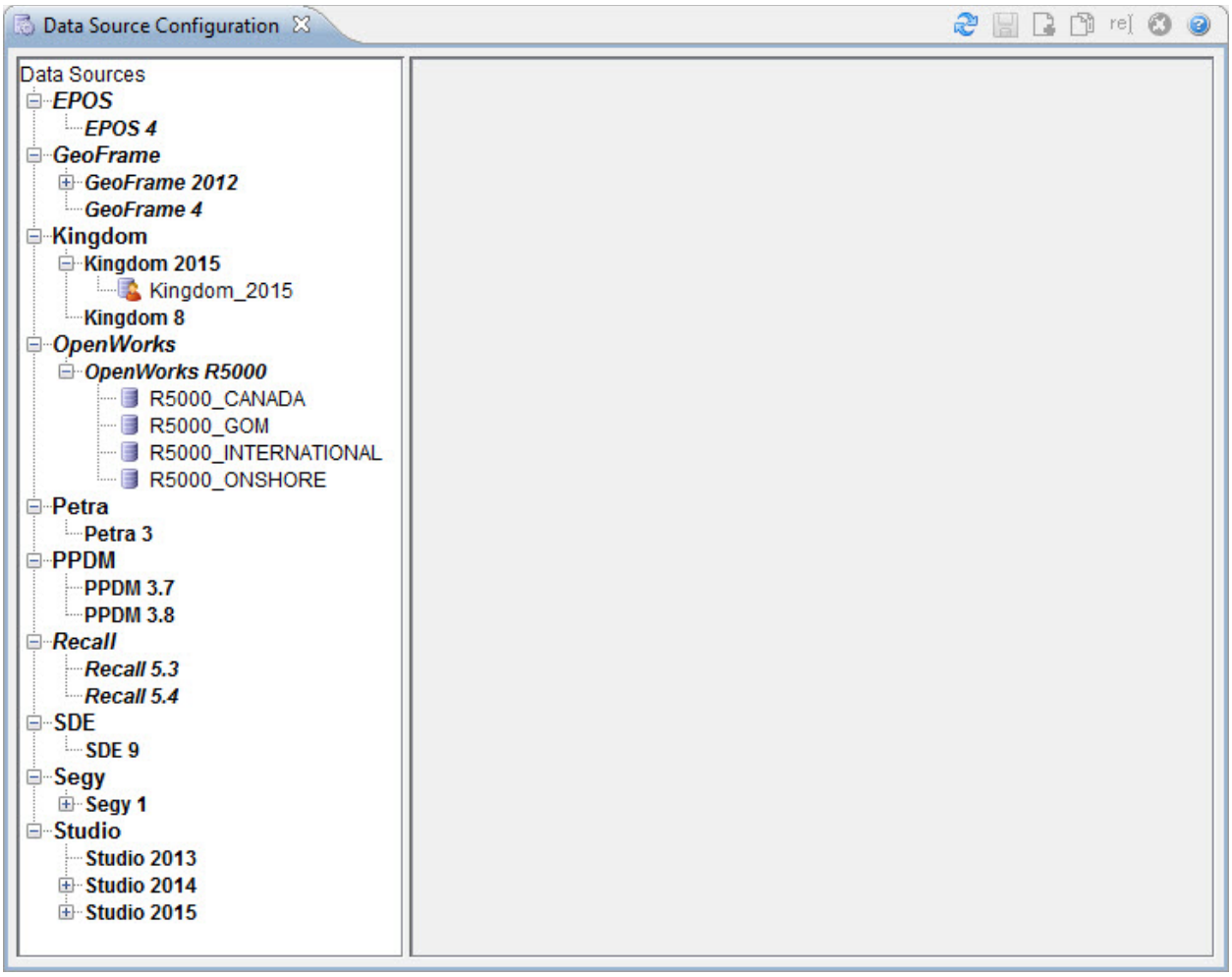
Some data source types can be configured as private data sources. Private data sources are only visible to the user that configures a private data source. Public data sources are visible to all OpenSpirit users. You must be logged in as the OpenSpirit administrator in order to create, edit, or delete public data source configurations.


Private data sources are supported by data sources that store data on local PC drives. For example, Kingdom or Petra projects that are stored on a local PC drive and are only accessible to a single Windows account.

The Data Source Configuration tool will open in read-only mode when it is run using an account that does not have the ***Administer OpenSpirit Runtime*** user right. This gives users the ability to view the various data source configurations. In this mode you can also configure private Windows based data sources, for example Kingdom projects you have local on your Window's C drive.

## Data Source Configuration Tool Layout

The tool's interface is divided into two sections: the ***Data Sources Panel*** on the left-hand side and the data source ***Attribute Panel*** on the right-hand side.




The ***Data Sources Panel*** presents a tree of data sources organized by data source type and version. Configured public data sources appear in the tree with a cylinder icon next to the data source name. Configured private data sources appear in the tree using a cylinder icon containing a person.

Data connectors that have been disabled using the OpenSpirit Install Config Manager will not appear in the Data Sources tree.

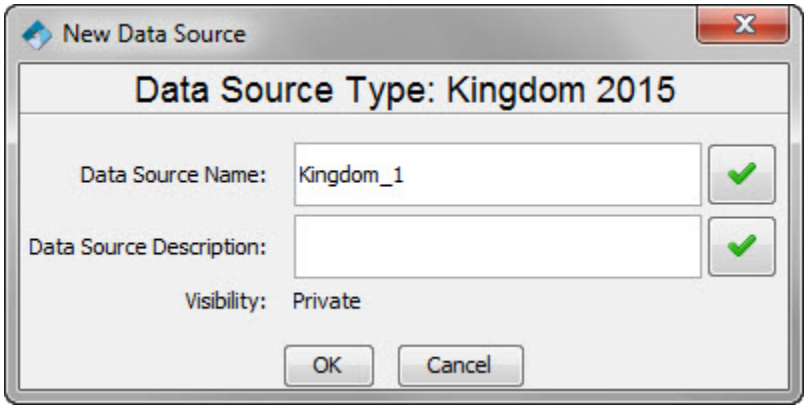
Selecting a configured data source in the tree results in display of an ***Attribute Panel*** on the right-hand side of the Data Source Configuration tool. The data source's attributes can then be viewed. The attributes may also be edited if you have permissions to administer the selected data source.

## Creating New Data Sources

New data sources are added to the tree by selecting the data source type and version node in the tree and clicking on the create data source icon in the tool bar or selecting the create option in the right mouse button popup menu. This will display the New Data Source dialog where you enter the name to be given to the new data source, an optional description

of the data source. Note, the data source description cannot be changed once the data source has been created. You must use the data source copy feature to change the description.

A public data source is created if the Data Source Configuration tool is running in admin mode. A private data source is created if the Data Source Configuration tool is not running in admin mode. Running the OpenSpirit Desktop using the OpenSpirit administrator account (i.e. the account used to install the OpenSpirit master installation) automatically runs the tool in admin mode. Admin mode is not enabled by default when running the OpenSpirit Desktop using any other account. Admin mode can be toggled on and off using the ***Tools > Administrator > Toggle Admin Mode*** menu option if you know the OpenSpirit administrator password or if your OpenSpirit account has been granted the ***Administer OpenSpirit Runtime*** right.




An ***Attribute Panel*** is then displayed on the right-hand side of the of the Data Source Configuration tool. Enter all the required information and click on the save icon in the tool bar. The information that is required varies by type and version of the data source.

Data sources can be copied by selecting a data source in the tree and clicking on the copy icon in the tool bar or selecting the copy option in the right mouse button popup window.

Data sources can be renamed by selecting a data source in the tree and clicking on the rename icon in the tool bar or selecting the copy option in the right mouse button popup window.

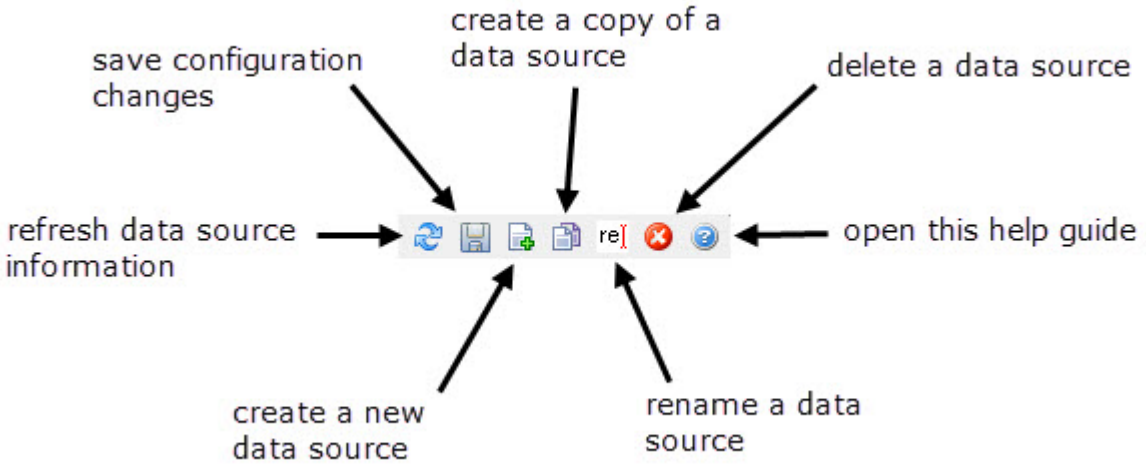
Data sources are deleted by selecting a data source in the tree and clicking on the delete icon in the tool bar or selecting the delete option in the right mouse button popup menu. When you delete a data source, a confirmation dialog will open that lists the sessions that include this data source. Proceeding with the deletion will remove the deleted data source from all associated sessions.

Keep in mind that the data source may also be referenced by OpenSpirit Copy Manager jobs, Scan Utility jobs, and by data keys saved in scan data sets and application projects, such as Petrel projects.

Unsaved attribute value edits can be restored to the currently saved state by pressing the refresh icon in the tool bar.

# Data Source Configuration Tool Bar

The Data Source Configuration tool bar contains buttons used to refresh, save, create, copy, rename, and delete data source configurations. These button actions are described below. The tool bar resides in the upper right hand corner of the Data Source Configuration window.




## Refresh Button

The refresh button refreshes the content of the data source tree that resides along the left side of the data source configuration tool and it refreshes the configuration settings of the currently selected data source. A save prompt will appear if there are any unsaved changes in the currently selected data source configuration.

## Save Button

The save button is enabled when a change is made to a data source configuration setting. Clicking on the button will save the changes to the OpenSpirit metadata repository.

## Create Button

The create button is enabled when a data source type is selected in the data source tree that can be configured on the operating system platform that the OpenSpirit Desktop is running on. See the Creating_New_Data_Sources section for information about creating data source configurations.

## Copy Button

The copy button is enabled when a data source is selected in the data source tree that can be configured on the operating system platform that the OpenSpirit Desktop is running on. Clicking on the copy button opens a prompt for the name to give the new copy.

## Rename Button

The rename button is enabled when a data source is selected in the data source tree that can be configured on the operating system platform that the OpenSpirit Desktop is running on. Clicking on the rename button opens a prompt for the new name to give to the data source.

A data source may be referenced by OpenSpirit Copy Manager jobs, Scan Utility jobs, sessions, and by data keys saved in scan data sets and application projects, such as Petrel projects. Renaming a data source will invalidate any items that refer to it.

## Delete Button

The delete button is enabled when a data source is selected in the data source tree. Clicking on the delete button opens a confirmation prompt.

Any credentials and server activation preferences entered by users will also be removed when deleting a data source. Also, the data source may be referenced by OpenSpirit Copy Manager jobs, Scan Utility jobs, sessions, and by data keys saved in scan data sets and application projects, such as Petrel projects. Deleting a data source will invalidate any items that refer to it.

## Help Button

The help button opens this help guide.

# Common Configuration Settings

The process of configuring a data source may seem overly complex, therefore you should take time to gather the information needed for each data source that you will be configuring. The Data Source Configuration Tool attempts to automatically gather and validate as many configuration values as it can. It does this by interrogating the data source's (i.e. GeoFrame, OpenWorks, and Kingdom) setup files after you have entered the configuration name and the install directory location for the data source. During the configuration of different data sources the configuration tool will provide feedback information and hints in the form of helper icons.

Each data source type requires a different set of configuration information. However, many of the settings are for similar types of information. A standard set of data entry fields and

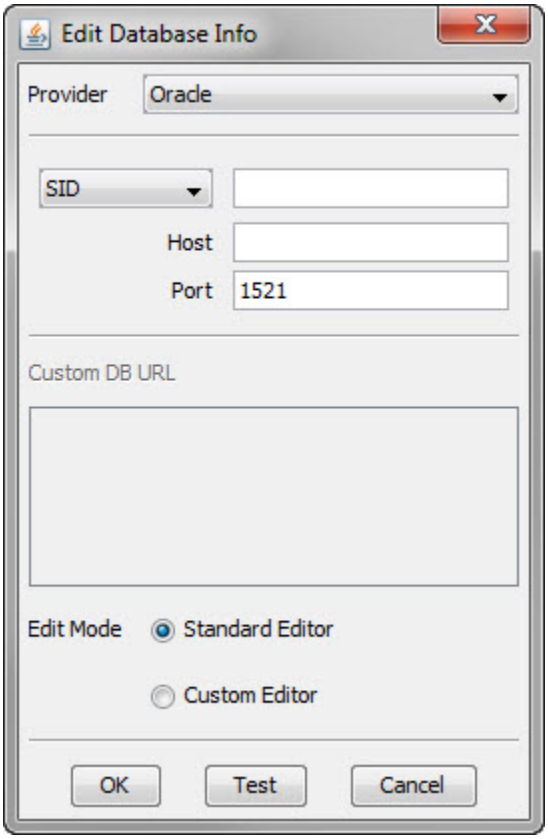
icons are used in the configuration panels for all of the data source types. The helper icons and their descriptions are as follows:

| | |
|---|---|
|  | File Selector: pressing this icon will open a file select dialog which is used to set directory locations and for picking file location.<br>Ex. Selecting the GeoFrame install directory |
|  | Verification Indicator: this icon indicates that the Configuration Tool was able to verify the input value. This verification can be related to:<br>file or directory location<br>project data source Oracle connection information is correct<br>OpenSpirit query account is accessible via account name/password |
|   | Non-Verification Indicator: this icon indicates that the Configuration Tool could not verify the input value. Also, the background color of the value input will be colored light red as a further indication.<br>Pressing this icon will open an information dialog that informs you of the reasons that the value could not be verified.<br>*NOTE: The Tool attempts to verify all entries, but in some environments (even when the values are known to be correct) the verification could fail. Therefore, you have the ability to save the configuration even with non-verified values.* |
|  | Dropdown Selector: when pressed, this icon presents you with a list of values to select from. The values in the list are determined by the configuration parameter you are selecting. They are:<br>1) If you are selecting a directory/file location the list is populated with all the previously selected locations.<br>2) If you are selecting an Oracle parameter (i.e. OWSYSSID and TWO_TASK) then the list is populated with all the Oracle<br>Instances found after parsing the tnsnames.ora file. |
|  | Builder: pressing this icon will bring up dialogs to help you configure the following:<br>1) URL Builder: this Builder is associated with the DB URL value. The Builder creates a URL to facilitate connection to the project data source's (GeoFrame, OpenWorks, Studio, etc.) Oracle or SQL Server database. This URL tells OpenSpirit where to find the project databases it needs to access.<br>2) Query Account Builder: this Builder is associated with the Query Account values. The Builder is used to create a database account in the project data source's database. This query account is typically used by OpenSpirit to access the names of available projects. |
|  | Add a row (Project Catalog builder only) |
|  | Delete a row (Project Catalog builder only) |

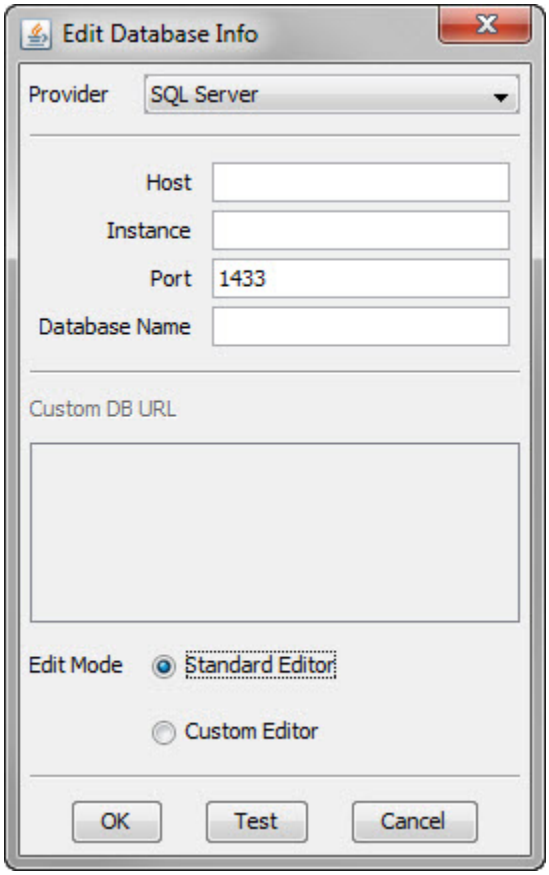
## Database URL Builder

The database URL dialog is used to enter information used to connect to an Oracle or SQL Server database.

URL Builder - Oracle




URL Builder - SQL Server




| Name | Description | Hints & Finding Values |
|---|---|---|
| **Provider** | The type of database provider, Oracle or SQL Server. | Ask your database administrator. |
| **Oracle Provider** | | |
| **SID/ServiceName** | Choose to use an Oracle SID or an Oracle service name. Enter the SID or Service Name of the data source's Oracle instance. | The SID and service names can be found in your tnsname.ora file. |
| **Host** | The host name of the computer running the data source's Oracle instance. | Located in the tnsname.ora file. This can either be the machine name or its IP address. |
| **Port** | The Oracle listener port number. | The listener port can be found in your tnsname.ora file. The default *Oracle port number is 1521.* |

| Name | Description | Hints & Finding Values |
|---|---|---|
| **Custom DB URL** | Select the Custom Editor option to enter custom database URLs such as URLs needed to support Oracle RAC. The Custom DB URL field is enabled by selecting the Custom Editor option. | Use of the custom field requires expertise in JDBC URL syntax. Only used this field when instructed by OpenSpirit support. |
| **SQL Server Provider** | | |
| **Host** | The host name of the computer running the data source's SQL Server instance. | Ask your local database administrator. |
| **Instance** | The instance name of the data source's SQL Server database. Leave this field blank if the database is in the default SQL Server instance. | Ask your local database administrator. |
| **Port** | The port number of your SQL Server datbase instance. | Ask your local database administrator. The default SQL Server port number is 1433. |
| **Database Name** | The name of the dataabse within the SQL Server instance. This can often be left blank if the account used to access the database has the correct database as its default database. | Ask your local database administrator. |
| **Custom DB URL** | Select the Custom Editor option to enter custom database URLs. The Custom DB URL field is enabled by selecting the Custom Editor option. | Use of the custom field requires expertise in JDBC URL syntax. Only used this field when instructed by OpenSpirit support. |

## Database Query Account Builder

The database query account builder dialog is used to create a new database account to be used to access OpenWorks or GeoFrame project information. The dialog is provided as a convenience. Most companies will choose to create the query account using Oracle tools rather than this OpenSpirit query account builder.


| Name | Description | Hints & Finding Values |
|---|---|---|
| **DBA Account** | Oracle account with permissions to create new Oracle accounts. | This needs to be a DBA privileged account that will be used to create the new query account. OpenSpirit does not store this DBA account and password anywhere. It is only used to create the new query account when the Ok button is pressed. |
| **DBA Password** | Password to the Oracle account. | |
| **New Account** | The name of the new Oracle query account to be created. | This account only requires connect privilege to the project data source of the Oracle database because the accessed tables have public readaccess. See the help for a specific data source type for more details about the use of the query account.<br>This account name and encrypted password will be stored in the OpenSpirit metadata repository. |
| **New Password** | The password to be assigned to the new Oracle query account. | |
| **Verify Password** | Repeat the password to avoid typing errors. | |

# Data Source Naming

The data source name is an important part of configuring OpenSpirit data sources. The name is part of an OpenSpirit data key string and is used by OpenSpirit enabled applications to find the data in the source projects. Many applications save the OpenSpirit data key string with the data transferred via OpenSpirit, so any updates can be written back to the original source project. It is critical that the data source name stay constant. You should avoid changing data source names as you upgrade OpenSpirit and the associated applications.

With this in mind make sure you pick a name generic enough to withstand upgrades but specific enough so your users can easily find their data.

# Project Catalog Scanner

There are certain OpenSpirit supported data sources that do not have a list or catalog of projects. Theses data sources have their projects defined by a directory structure. Presently Kingdom and Petra are supported data sources that fall into this category. In order for OpenSpirit to "know" about the projects associated with these data sources, it is necessary to populate a Project Catalog that consists of the project names and disk file locations. This is accomplished by using the Project Catalog Scanner. The Project Catalog Scanner is part of the configuration panel of the affected data sources.

To register projects to the catalog, go to the Project Catalog section of the configuration panel and press the folder icon and browser to the top level directory of the project source. Once that is selected press the *"Add All Projects Under Path. Select the Path with the File Chooser."* button. The scanner will then interrogate the directory path and add rows for each relevant project found. You can also manually add projects individually by pressing the ***Add Row*** icon  and entering the project information in the blank row that was added. Conversely you can delete individual rows by selecting the row and pressing the ***Delete Row*** icon  .

Once a project is added and saved it will become available for use in the Data Selector.

# Treatment of Coordinate Systems

Some of the data sources that OpenSpirit has data connectors to require both specification of the project's coordinate system as well as the preferred method of doing a datum shift from the project's geodetic datum to the WGS 84 datum. This information must be supplied when the project is created using the vendor's data management tools. This so called "early-binding" approach is utilized by:

- OpenWorks
- GeoFrame
- Kingdom 8 (Kingdom 2015 chooses the datum shift for you)
- Studio

When OpenSpirit connects to these types of projects the OpenSpirit data connector reads the project's map projection system type and parameters, the associated geographic system and parameters, and the preferred datum shift type and parameters and translates these into standard EPSG nomenclature (see http://www.epsg.org). Then if any application requests spatial data via OpenSpirit (e.g. a well or seismic line location) OpenSpirit will use its Coordinate Service (based on ESRI's Projection Engine) and the parameters read from the source project to transform the data to the requested coordinate system. If the requested coordinate system has a different datum than the source spatial data will be shifted to

WGS84 based on the datum shift method and parameters defined in the source coordinate system.

Other data sources take the "late-binding" approach and only define the map and/or geographic coordinate system for data stored in their project and do not supply any information on how to do a datum shift to WGS84. This is the approach used by:

- EPOS
- Petra
- PPDM
- SDE

In order to conveniently use data from these data sources in OpenSpirit workflows we have added the ability when these data sources are configured (e.g. made known to OpenSpirit) to specify the preferred datum shift for every datum found in that datastore. So when a PPDM or SDE datastore is registered with OpenSpirit a scan is done to find the unique set of datums used in that datastore instance and the administrator is required to choose the preferred datum shift method for each datum to shift it to WGS84. If you wish to use a different datum shift based on where the data is spatially located (e.g. use NADCON in the USA but use NTV2 in Canada to shift from NAD27 to WGS84). Then one can configure two OpenSpirit datastore instances that point to the same datastore instance but utilize different datum shifts between NAD27 to WGS84. In future releases of OpenSpirit we plan to make the specification of datum shift policies more flexible by allowing spatial dependent policies to be set and stored in the OpenSpirit metadata repository along with the EPSG coordinate system definitions.

To start configuring the Data Source, select the desired data source type and version in the data source tree and click on the create data source icon  in the tool bar.

# Command Line Configuration Utility

A command line tool is available for configuring data sources when a graphical display terminal is not available on the computer that a data source needs to be configured on.

The command line data source configuration utility is started on Linux using the ***dataSourceConfig.sh*** script found in the ***bin/etc*** directory of your OpenSpirit software installation. The utility is also available on Windows and is started using the ***dataSourceConfig.bat*** file found in the ***bin\etc*** folder.

The command line utility can be used to create, update, delete, rename, and list data source configurations. The utility must be run using the OpenSpirit administrator account used to create the master configuration, or an OpenSpirit account that has been granted the ***Administer OpenSpirit Runtime*** user right.

## Create Data Source

Use the following command line options to create a new data source:

```
-create <input file>
```

where **<input file>** is the name of the file containing the data source configuration parameter values. Example parameter files for GeoFrame, OpenWorks, and SEGY are provided in the `bin/etc` directory. Create a copy of one of the example files and edit it to provide the values needed for your data source

## Update Data Source

Use the following command line options to modify an existing data source:

```
-update <input file>
```

where **<input file>** is the name of the file containing the data source configuration parameter values. Example parameter files for GeoFrame, OpenWorks, and SEGY are provided in the `bin/etc` directory. Edit one of the example files to provide the values needed for your data source

## Delete Data Source

Use the following command line options to delete an existing data source:

```
-delete <data source type name> <data source type version>
<data source name>
```

where **<data source type name>** is the name of the data source type (e.g. **GeoFrame** or **OpenWorks**)

**<data source type version>** is the version of the data source type (e.g. **2012** or **R5000**)

**<data source name>** is the name that was given when creating the data source

## Rename Data Source

Use the following command line options to rename an existing data source:

```
-rename <data source type name> <data source type version>
<data source name> <new data source name>
```

where **<data source type name>** is the name of the data source type (e.g. **GeoFrame** or **OpenWorks**)

**<data source type version>** is the version of the data source type (e.g. **2012** or **R5000**)

**<data source name>** is the name that was given when creating the data source

**<new data source name>** the new name to give the data source

## List Data Source

Use the following command line options to list out the parameters of an existing data source.

 Some data source configurations contain database account passwords. The database account password parameters are shown in clear text in the parameter output:

```
-list <data source type name> <data source type version>
<data source name> [output file]
```

where **<data source type name>** is the name of the data source type (e.g. **GeoFrame** or **OpenWorks**)

**<data source type version>** is the version of the data source type (e.g. **2012** or **R5000**)

**<data source name>** is the name that was given when creating the data source

**[output file]** optional argument that specifies the name of a file that the parameters should be written to, omit this option to list the parameters to the console

# Data Source Configuration Details

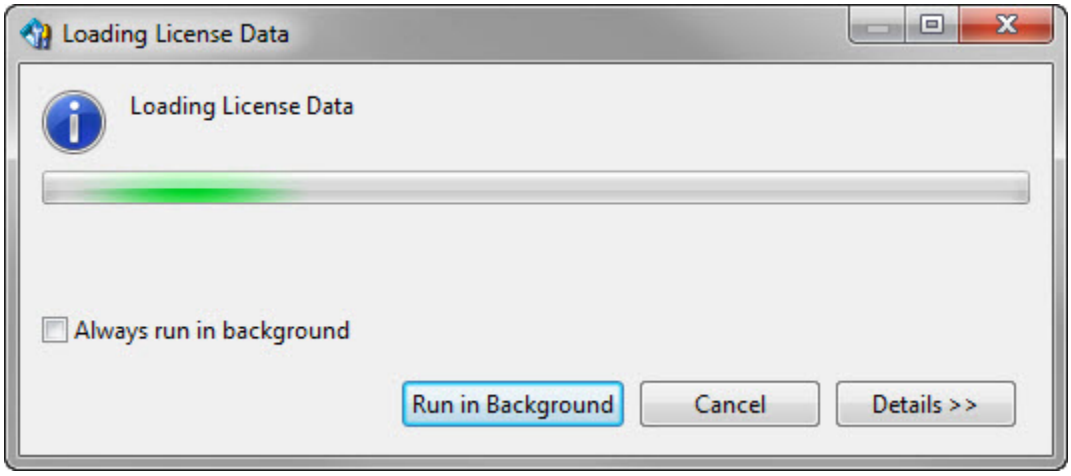
The details how each data source type is configured are describing in the individual data source Installation & Configuration guides or from the on-line Help System.

# License Monitor

The License Monitor tool is accessed from the OpenSpirit Desktop by clicking on the License Monitor tool bar icon in the Administrator tool bar, or by choosing the ***Tools > Administrator > License Monitor*** menu item. The License Monitor tool is used to view the features that are available in your OpenSpirit license and to monitor their usage. The License Monitor can also be used to force check in licenses when running the OpenSpirit Desktop in admin mode.

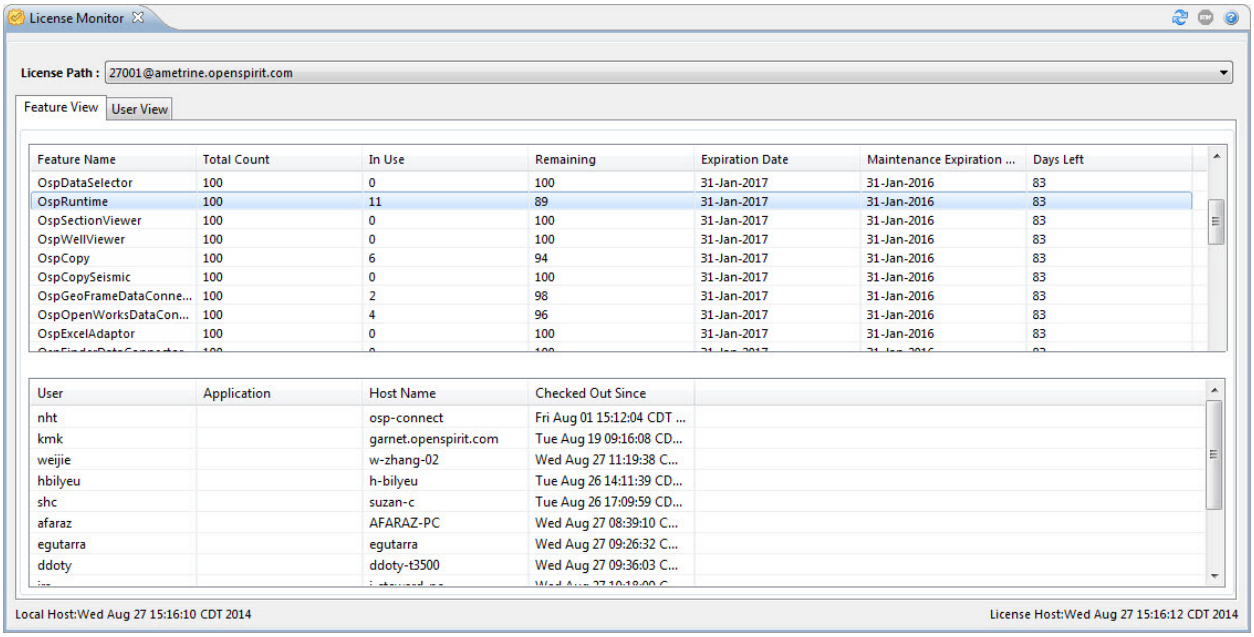
The license path shown at the top of the License Monitor tool is a configuration setting of your OpenSpirit master installation. The License Monitor tool displays the license path but cannot be used to modify the license path. The Install Config Manager tool is used to modify the OpenSpirit master installation's license path setting.

The License Monitor tool connects to the OpenSpirit FlexLM license daemon when it is first displayed to retrieve the current license information. This can take from a few seconds to a few minutes depending on how many license features there are in your OpenSpirit license file and depending on how many users have licenses checked out. A progress window appears while the loading is underway. Pressing the ***Run in Background*** button will dismiss the progress dialog enabling you to view the license information in the License Monitor as it is read from the license daemon.




You may begin interacting with the License Monitor tool once the license information has been obtained from the license daemon. Pressing the refresh icon will cause the License Monitor to request the license information from the license daemon again resulting in the progress dialog to be re-displayed. Select the ***Always run in background*** option on the progress dialog to prevent it from popping up each time a refresh is performed.

The License Monitor tool provides a license feature oriented view and a user oriented view of your OpenSpirit license features. Both views provide the same information, it is just organized differently.

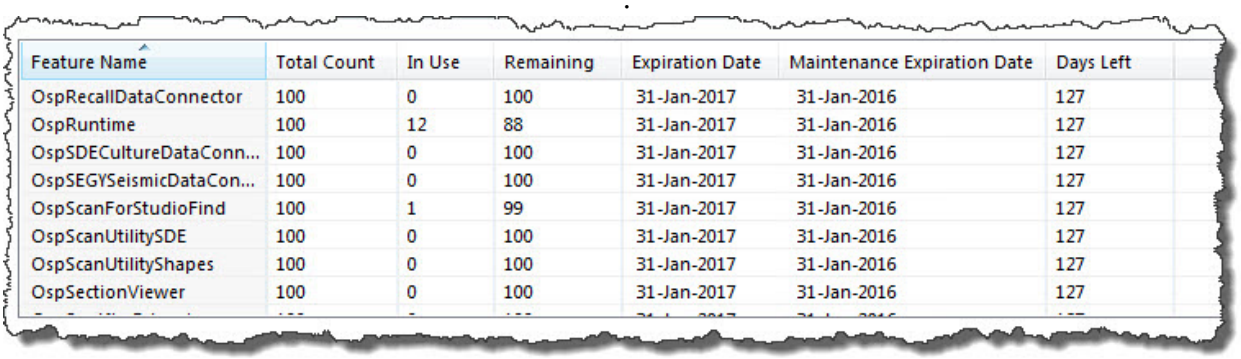



# License Path Component Selection

The license daemon that is currently being monitored by the License Monitor tool is displayed above the ***Feature View*** and ***User View*** tabs. The License Monitor tool can only communicate with a single OpenSpirit FlexLM license daemon even though an OpenSpirit installation can be configured to use licenses from multiple license daemons. The first component in a multi-daemon configuration is selected by default. Use the ***License Path*** selector to select another license daemon to monitor if you have a multi-daemon license path.

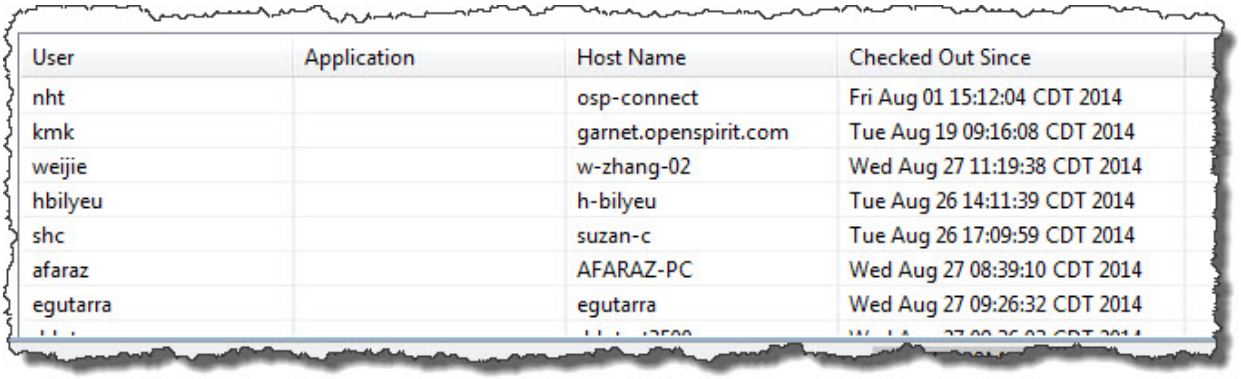

# Feature View

The License Monitor tool's ***Feature View*** tab is used to view license checkout information by feature name. The License Monitor tool's ***Feature View*** tab shows two tables of information. The top table lists all of the license features that exist in your OpenSpirit license file. The list includes the total number of features that exist in the license, how many are currently checked out, how many are available to be checked out, the date the feature will expire, the date that maintenance will expire, and the number of days remaining before maintenance expires.



| Feature Name | Total Count | In Use | Remaining | Expiration Date | Maintenance Expiration Date | Days Left |
|---|---|---|---|---|---|---|
| OspRecallDataConnector | 100 | 0 | 100 | 31-Jan-2017 | 31-Jan-2016 | 127 |
| OspRuntime | 100 | 12 | 88 | 31-Jan-2017 | 31-Jan-2016 | 127 |
| OspSDECultureDataConn... | 100 | 0 | 100 | 31-Jan-2017 | 31-Jan-2016 | 127 |
| OspSEGYSeismicDataCon... | 100 | 0 | 100 | 31-Jan-2017 | 31-Jan-2016 | 127 |
| OspScanForStudioFind | 100 | 1 | 99 | 31-Jan-2017 | 31-Jan-2016 | 127 |
| OspScanUtilitySDE | 100 | 0 | 100 | 31-Jan-2017 | 31-Jan-2016 | 127 |
| OspScanUtilityShapes | 100 | 0 | 100 | 31-Jan-2017 | 31-Jan-2016 | 127 |
| OspSectionViewer | 100 | 0 | 100 | 31-Jan-2017 | 31-Jan-2016 | 127 |

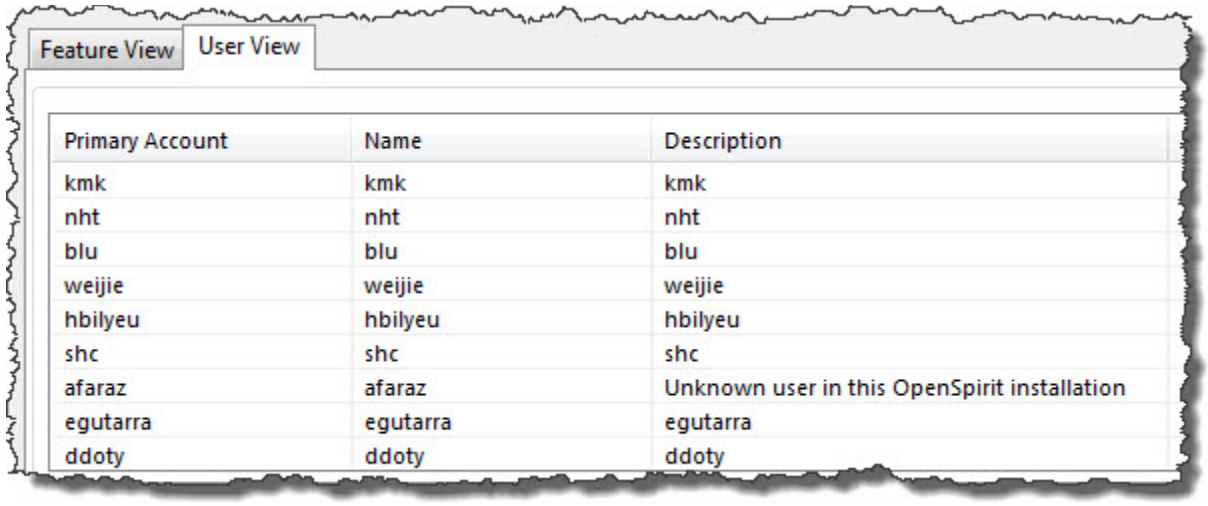
Selecting a feature will display information about all checkouts of the selected feature in the bottom table of the ***Feature View*** tab. Each user that has the selected feature checked out will appear as a row in the bottom table. Each row shows the user account, host name, and feature check out time. An application name is also displayed if the ***OspAppConnection*** feature was selected.



| User | Application | Host Name | Checked Out Since |
|---|---|---|---|
| nht | | osp-connect | Fri Aug 01 15:12:04 CDT 2014 |
| kmk | | garnet.openspirit.com | Tue Aug 19 09:16:08 CDT 2014 |
| weijie | | w-zhang-02 | Wed Aug 27 11:19:38 CDT 2014 |
| hbilyeu | | h-bilyeu | Tue Aug 26 14:11:39 CDT 2014 |
| shc | | suzan-c | Tue Aug 26 17:09:59 CDT 2014 |
| afaraz | | AFARAZ-PC | Wed Aug 27 08:39:10 CDT 2014 |
| egutarra | | egutarra | Wed Aug 27 09:26:32 CDT 2014 |

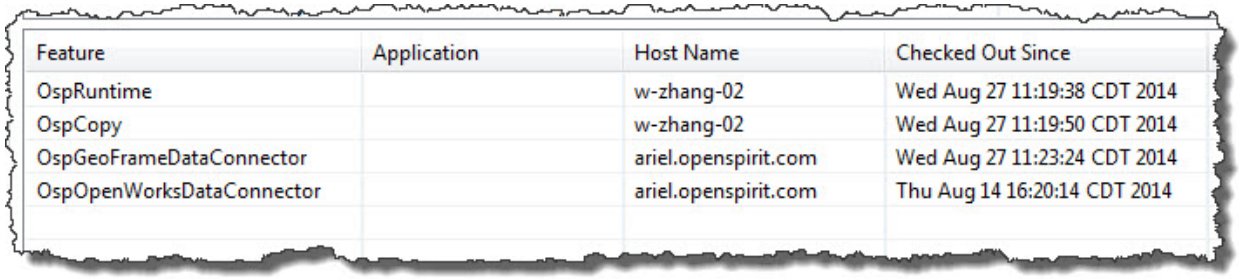
# User View

The License Monitor tool's ***User View*** tab is used to view license checkout information by user. The ***User View*** tab shows two tables of information. The top table lists all of the users that have one or more OpenSpirit license features checked out. The list includes the primary account of the user, the user's name, and the user's description.




OpenSpirit license files that are shared between multiple OpenSpirit master installations may result in features being checked out by an account that has not be registered with the master installation that the License Monitor tool is connected to. The description of these unknown users will appear as *"Unknown user in this OpenSpirit installation"*.

Selecting a user will display information about all the license features checked out by the selected user. The information includes the license feature name, the host name that the application or data connector is running on, and the time that the license was checked out. An application name is also displayed for the ***OspAppConnection*** features to indicate the application that has the universal application connection license feature checked out.




# Refreshing License Information

The License Monitor tool reads the license information from the OpenSpirit FlexLM daemon when it is first displayed. You must click on the refresh icon to force the tool to re-read the license information to see any changes that occur after the tool is open. A refresh is performed automatically when performing a force check-in or when changing the selected license path component.

# Force License Check-in

The License Monitor tool can be used to check licenses in when the OpenSpirit Desktop is connected in ***Admin Mode***. This is equivalent to using the FlexLM ***lmremove*** utility. License

check-in is performed by selecting a feature or a user and clicking on the stop sign icon  in the License Monitor tool bar. The License Monitor tool will trigger an automatic refresh when a force check-in is performed.

Selecting a feature in the ***Feature View*** tab will check in all existing check-outs of the selected feature for all OpenSpirit users. Selecting a user in the ***Feature View*** tab will check in the selected feature checked out by the selected OpenSpirit user.

Selecting a user in the ***User View*** tab will check in all existing check-outs of all features for the selected OpenSpirit user. Selecting a feature in the ***User View*** tab will check in the selected feature for the selected OpenSpirit user.

Licenses that are checked in using the License Monitor tool will be checked back out if the application that originally checked it out is still running. There is typically a delay of 10 to 15 minutes before the license is checked back out by the running application.

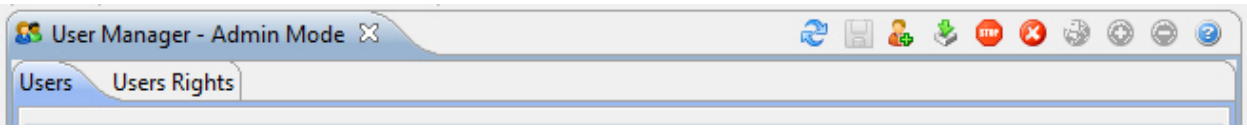
 Consider using the Process Manager tool or the User Manager tool's user deactivation option if your goal is to free up all OpenSpirit licenses that are being consumed by a specific user.

# User Manager

The User Manager Tool is accessed from the OpenSpirit Desktop by clicking on the User Manager tool bar icon  or by choosing the ***Tools > Administrator > User Manager*** menu item. The User Manager tool can be used to view and modify information about registered OpenSpirit users. It can also be used to grant and revoke user rights.

The User Manager window tab will display ***Admin Mode*** when connected as the administrator. Admin mode must be enabled to make changes to the user information. The User Manager tool can only be used to view user information if not run in admin mode.

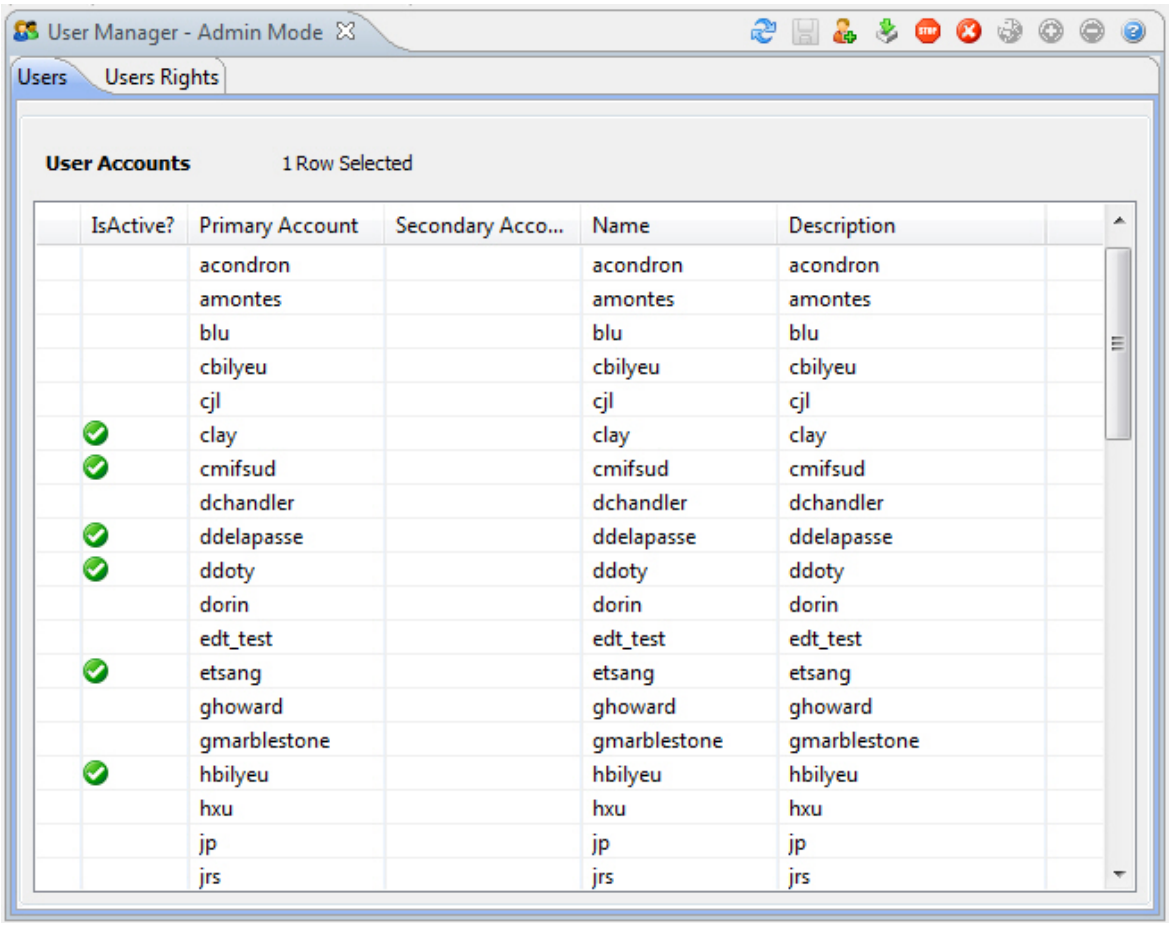
The User Manager tool has two tab displays, a **Users** tab and a **Users Rights** tab.



# Users tab

## Users tab overview

The ***Users*** tab displays a table of all the registered OpenSpirit users. The list may be sorted by any of the columns by clicking on the header of the column to sort by. The **Is Active?** column indicates, with a check mark, if the user is currently connected to the OpenSpirit services.




Users are automatically registered with the OpenSpirit framework the first time they run any OpenSpirit enabled application. Automatically registered users will appear with a primary account, name, and description that all match the name of the Windows or Linux account that they were running on when automatically registered. A user's primary account cannot be changed. Users must be deleted and re-registered to change their primary account. The secondary account is optional and can be edited. User names and descriptions may also be edited.

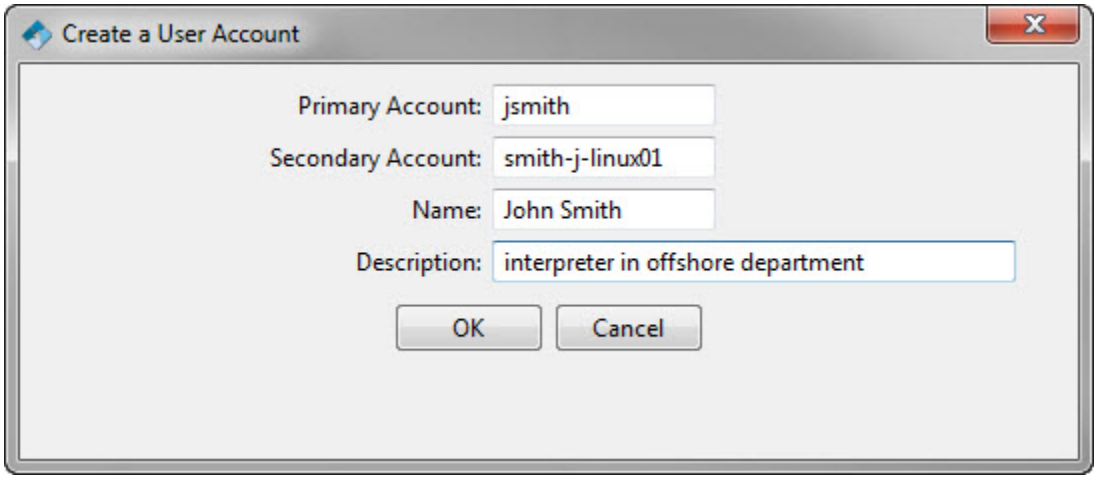
The User Manager's tool bar contains buttons that can be used to create, delete, and disconnect OpenSpirit users.

# Adding New Users

The User Manager tool can be used to register new OpenSpirit users rather than waiting for automatic registration to occur. Explicit user registration is most often performed when it is desired to have the user name or description fields contain values other than merely duplicating the primary account name.

New users can be added individually by clicking on the create user icon .

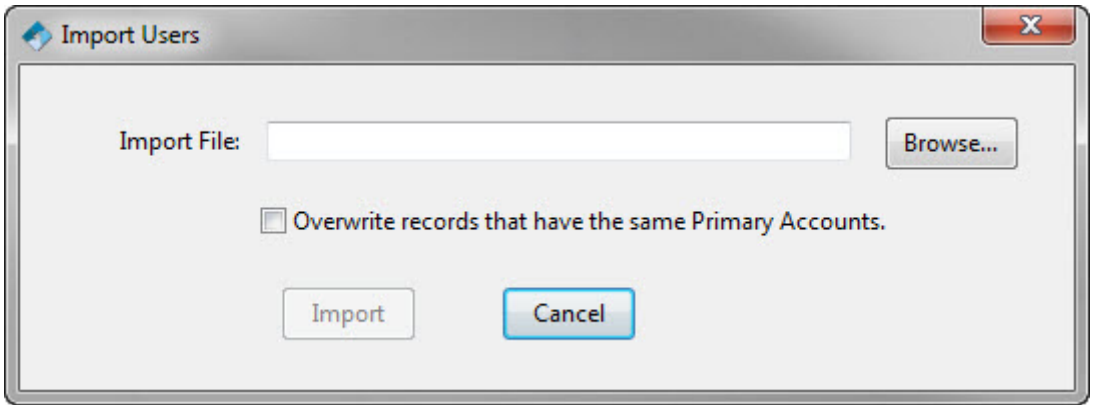
The create user icon will open a dialog that is used to enter the new user's primary account, secondary account, name, and description. The primary account field is the only required field. The name and description will default to the primary account value if left blank. The secondary account is optional and is typically left blank. No validation is performed on the values entered for the primary and secondary accounts, so take care to enter the account names accurately. The primary account cannot match any existing user's primary or secondary account. The secondary account cannot match any existing user's primary or secondary account.




Users can also be added in batch by clicking on the import icon to select a file containing information for many users. The import file should contain a line for each user using a vertical bar character to separate the account fields. The file should be in the form of:

```
Primary Account | Secondary Account | Name | Description
```

The import dialog provides an option to overwrite or to skip any users that match an existing primary account.




# Deleting Users

The User Manager tool can be used to delete OpenSpirit users. Deleting an OpenSpirit user will remove all information associated with a user from the OpenSpirit repository. This includes the user's sessions, server activation preferences, data source credentials, and private data source configurations. Deleting a user does not remove any Windows or Linux account associated with the user. Only OpenSpirit information is removed.

Users are deleted by selecting one or more rows in the user table and pressing the delete icon . An "are you sure" dialog will be displayed giving you a chance to change your mind and cancel the deletion.

User deletion cannot be undone. All of the user's preference sessions, private data source configurations, and preference settings will be lost when the user is deleted.

# Editing User Information

The user name, description, and secondary account information can be edited by simply clicking in the table cell and typing. Edits to user information are not saved until you click on the save icon in the User Manager tool bar. An edit icon is displayed in the left most column of each user that has been edited. The edit icons go away when the edits are saved by clicking on the save icon.

The secondary account is used to associate another Windows or Linux account with an OpenSpirit user. It is typically only used when an OpenSpirit user has different account names on Windows and Linux and wishes to run OpenSpirit applications on both accounts. A secondary account is not required to run data connector processes under different accounts. A secondary account is only needed to run applications under two different account names and have them treated as a single OpenSpirit user.

No validation is performed on secondary account information entered using the User Manager tool. Secondary accounts cannot match any other existing primary account or any other existing secondary account.

# Disconnecting Users

The User Manager tool can be used to disconnect active users from the OpenSpirit runtime. This feature is provided to enable the OpenSpirit administrator to free resources being held by OpenSpirit users if it is not possible for the user to release the resources themselves.

 Disconnecting a user will force the user's data connector processes to shut down and will disconnect any OpenSpirit enabled applications they may be running. Disconnected users will likely have to restart their OpenSpirit applications to recover from a disconnect. No warning is given to the disconnected user, so make sure they are not at risk of losing valuable work before disconnecting them.

Users that are running one or more OpenSpirit enabled applications or data connectors will appear with a green check  in the ***IsActive?*** column of the user table. Select one or more active users and click on the stop sign icon  in the User Manager tool bar to deactivate the selected active users.

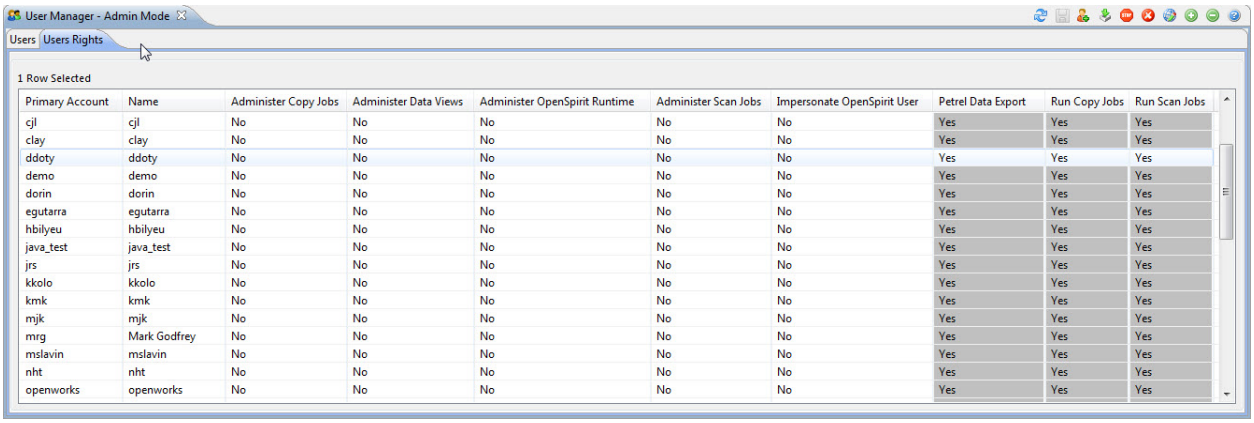
# Refreshing User List

Click on the refresh icon  to refresh the list of users shown in the User Manager tool. Refresh will include any new users that have been registered since the list was last displayed. Refresh can also be used to discard any unsaved edits to user information.

# Users Rights tab

## Users Rights tab overview

Companies may wish to restrict access to some of the capabilities provided by OpenSpirit tools. For example, some companies may want to restrict the ability to run OpenSpirit scan jobs to their data management personnel. Other companies may want to prohibit Petrel users from exporting data out of Petrel using the OpenSpirit Ocean Petrel Application Adapter. The granting and revoking of these rights is done using the **Users Rights** tab in the **User Manager** tool.




| Primary Account | Name | Administer Copy Jobs | Administer Data Views | Administer OpenSpirit Runtime | Administer Scan Jobs | Impersonate OpenSpirit User | Petrel Data Export | Run Copy Jobs | Run Scan Jobs |
|---|---|---|---|---|---|---|---|---|---|
| cjl | cjl | No | No | No | No | No | Yes | Yes | Yes |
| clay | clay | No | No | No | No | No | Yes | Yes | Yes |
| ddoty | ddoty | No | No | No | No | No | Yes | Yes | Yes |
| demo | demo | No | No | No | No | No | Yes | Yes | Yes |
| dorin | dorin | No | No | No | No | No | Yes | Yes | Yes |
| egutarra | egutarra | No | No | No | No | No | Yes | Yes | Yes |
| hbilyeu | hbilyeu | No | No | No | No | No | Yes | Yes | Yes |
| java_test | java_test | No | No | No | No | No | Yes | Yes | Yes |
| jrs | jrs | No | No | No | No | No | Yes | Yes | Yes |
| kkolo | kkolo | No | No | No | No | No | Yes | Yes | Yes |
| kmk | kmk | No | No | No | No | No | Yes | Yes | Yes |
| mjk | mjk | No | No | No | No | No | Yes | Yes | Yes |
| mrg | Mark Godfrey | No | No | No | No | No | Yes | Yes | Yes |
| mslavin | mslavin | No | No | No | No | No | Yes | Yes | Yes |
| nht | nht | No | No | No | No | No | Yes | Yes | Yes |
| openworks | openworks | No | No | No | No | No | Yes | Yes | Yes |

The rights that can be managed using the **Users Rights** tab are:

| User Right | Description | Default |
|---|---|---|
| Administer Copy Jobs | The right to create, view, modify, delete, schedule and run copy jobs.<br>The right to create, view, modify* and delete* public copy rules.<br>The right to view, modify, delete, schedule and run copy jobs created by other users.<br>The right to monitor and cancel copy jobs run by any user.<br>The right to view and delete copy job run histories for jobs run by any user. | No |
| Administer Data Views | The right to create, view, modify*, and delete* public model views. | No |
| Administer OpenSpirit Runtime | The right to act as the OpenSpirit administrator without having to know the OpenSpirit password. | No |
| Administer Scan Jobs | The right to create, view, modify, delete, schedule and run scan job definitions.<br>The right to schedule and run scan jobs.<br>The right to view, modify, delete, schedule and run scan job definitions created by other users.<br>The right to monitor and cancel scan jobs run by any user.<br>The right to view and delete scan job run histories for jobs run by any user. | No |

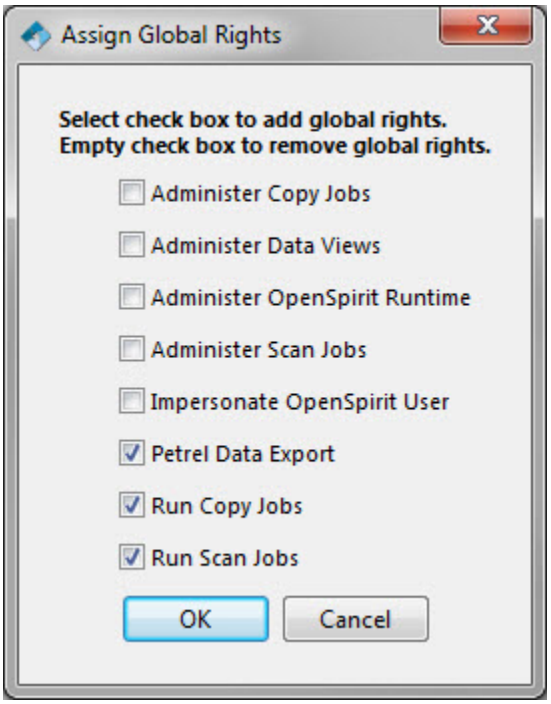
| User Right | Description | Default |
|---|---|---|
| Impersonate OpenSpirit User | The right to access OpenSpirit data connectors running as a different OpenSpirit user. This right is typically used to enable a web service account to act on behalf of other OpenSpirit users. | No |
| Petrel Data Export | The right to use the *export* and *save to external* features of the TIBCO OpenSpirit Adapter for Petrel. | Yes |
| Run Copy Jobs | The right to create, view, modify, and delete copy job definitions.<br>The right to view public copy rules.<br>The right to schedule, run, monitor and cancel copy jobs.<br>The right to view and delete copy job run histories. | Yes |
| Run Scan Jobs | The right to create, view, modify, and delete scan job definitions.<br>The right to schedule, run, monitor and cancel scan jobs.<br>The right to view and delete scan job run histories. | Yes |

* *The default copy rules and model views provided with the OpenSpirit software cannot be modified or deleted. Copies can be modified.*

# Assigning Global Rights

Global rights are rights that are granted to every OpenSpirit user. Any OpenSpirit right can be made global. You must have administrator privilege to grant or revoke global rights.

Global rights are granted or revoked by clicking on the Global rights icon  in the User Manager tool bar. This displays the ***Assign Global Rights*** window.

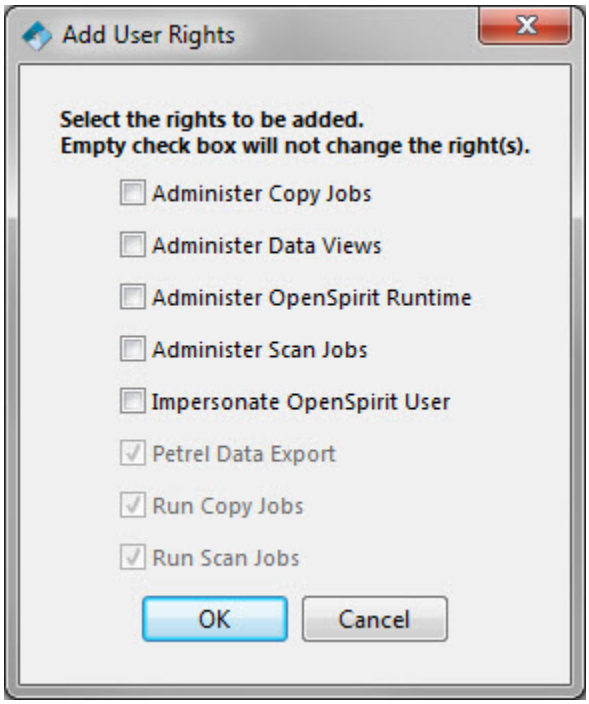



All OpenSpirit rights are listed. Check the rights you would like all users to have and un-check the rights that you want to control on a per-user basis.

It is **strongly** advised to never make the ***Administer OpenSpirit Runtime*** right or the ***Impersonate OpenSpirit User*** right a global right.

## Adding User Rights

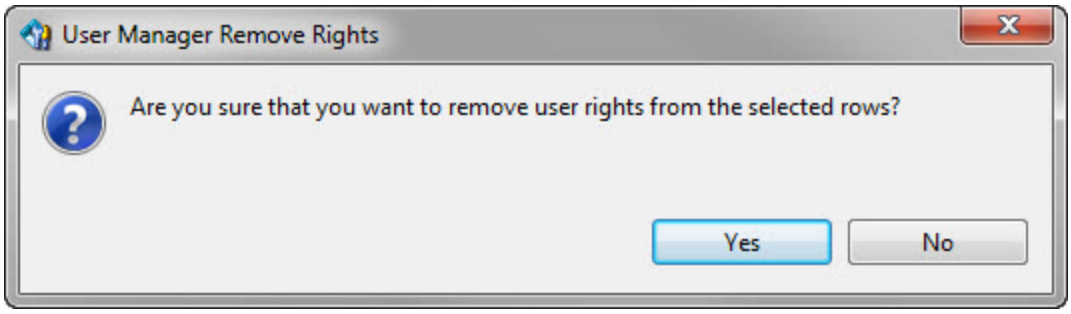
Rights that are not already granted as a global right may be granted to specific users by selecting one or more user rows and clicking on the Add rights icon in the User Manager tool bar. This displays the ***Add User Rights*** window.



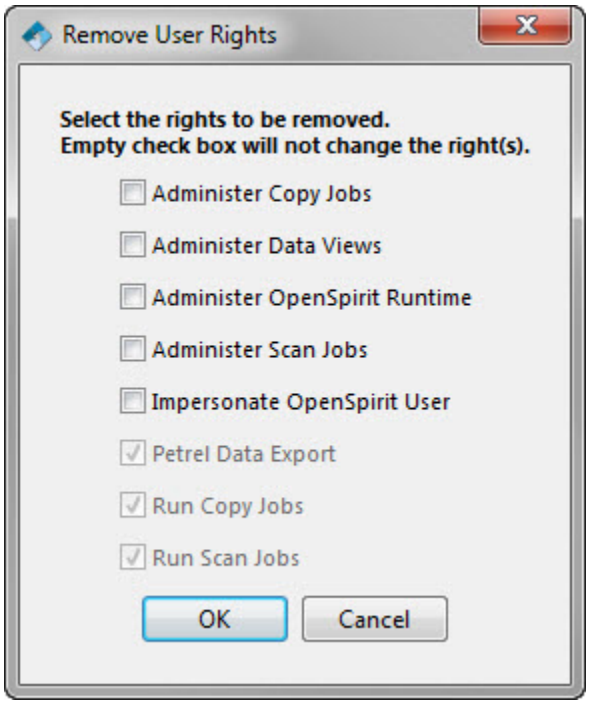

All OpenSpirit rights are listed. Global rights appear greyed out and cannot be controlled at the user level. Check the non-global rights that you want to grant to the selected users. Any rights that the selected users already had prior to displaying the ***Add User Rights*** window are unaffected. Rights cannot be removed from a user by un-checking them in the ***Add User Rights*** window. Rights can only be added using this window. Use the Remove User Rights window to take rights away from users.

## Removing User Rights

Rights that are not already granted as a global right may be removed from specific users by selecting one or more user rows and clicking on the Remove rights icon in the User Manager tool bar. This displays an ***Are you sure*** warning.




Click the No button to cancel the user rights removal operation. Click the Yes button to proceed to the ***Remove User Rights*** window.




All OpenSpirit rights are listed. Global rights appear greyed out and cannot be controlled at the user level. Check the non-global rights that you want to remove from the selected users. Any selected user that has a right that you check will have that right removed when the ***Ok*** button is pressed.

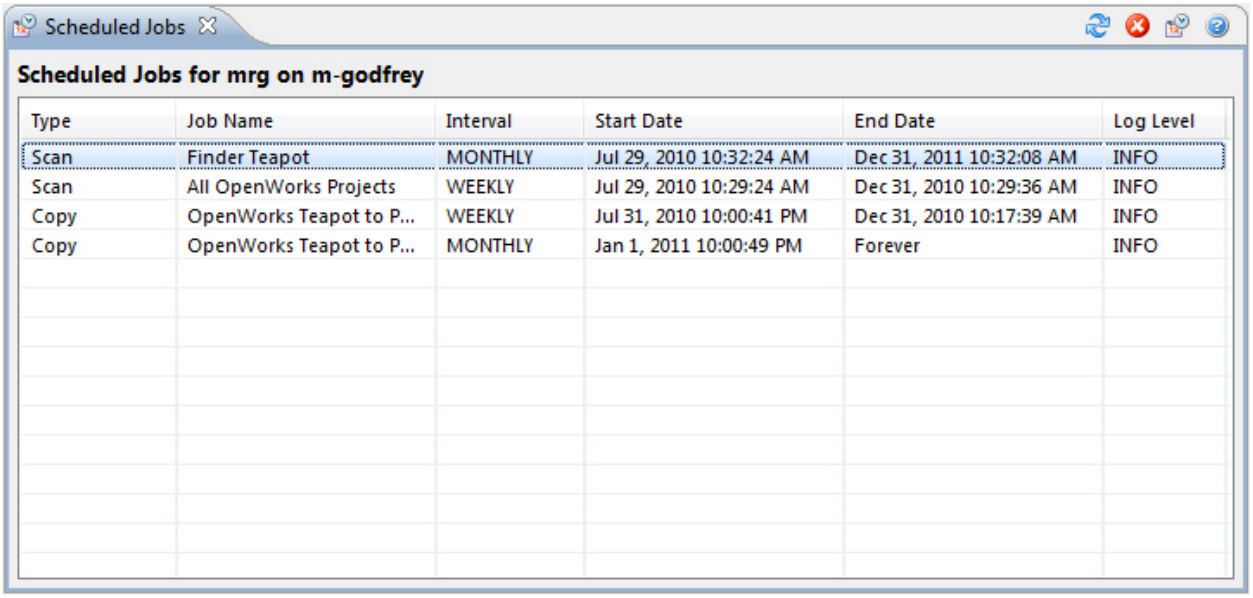
# Data Management Tool

## Topics

# Scheduled Jobs

## Scheduled Jobs Overview

The Scheduled Jobs tool is used to view and manage scheduled copy and scan jobs. The Copy Job Manager and Scan Job Manager tools must be used to do the initial job scheduling. Jobs appear in the Scheduled Jobs window once they have been scheduled using the copy or scan tool. The Scheduled Jobs window will open automatically when a job is scheduled using the Copy Job Manager or Scan Job Manager tool. The Scheduled Jobs window can also be opened by clicking on the Scheduled Jobs icon in the OpenSpirit Desktop tool bar or by choosing the ***Tools > Data Manager > Scheduled Jobs*** menu item.



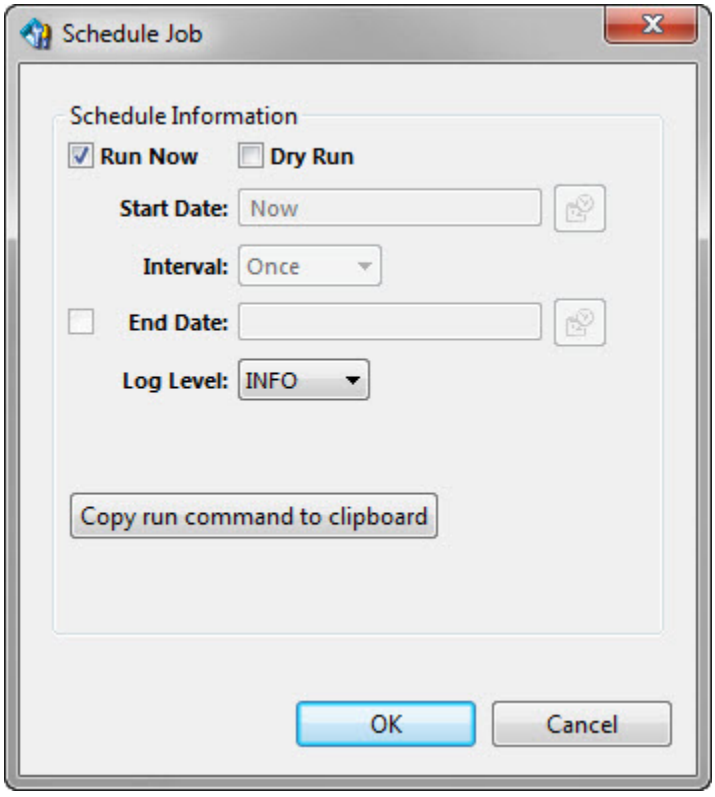

OpenSpirit job scheduling is delegated to the computer's native job scheduler. Jobs scheduled on computers running a Microsoft Windows operating system are registered with the Microsoft Windows Task Scheduler. Jobs scheduled on computers running a Linux operating system are registered with the Linux cron daemon. The native scheduler (Task Scheduler or cron) must be available on the computer you are using to schedule The login account used to schedule OpenSpirit jobs must have the appropriate permissions to use the native scheduler. Check with you company's IT organization if you have problems accessing the native scheduler.

OpenSpirit's use of your computer's native scheduler means that information about scheduled jobs is only available when running on the computer used to schedule the job and only when using the login account used to schedule the job. The list of Scheduled Jobs displayed by the Scheduled Jobs tool is read directly from your computer's native job scheduler.

Jobs scheduled using OpenSpirit can be changed or removed using the Windows Task Scheduler on Windows or cron commands on Linux. Also, scheduled jobs are not removed when un-installing or upgrading your OpenSpirit runtime. Upgrading your OpenSpirit runtime may require removing jobs scheduled with earlier versions of OpenSpirit.

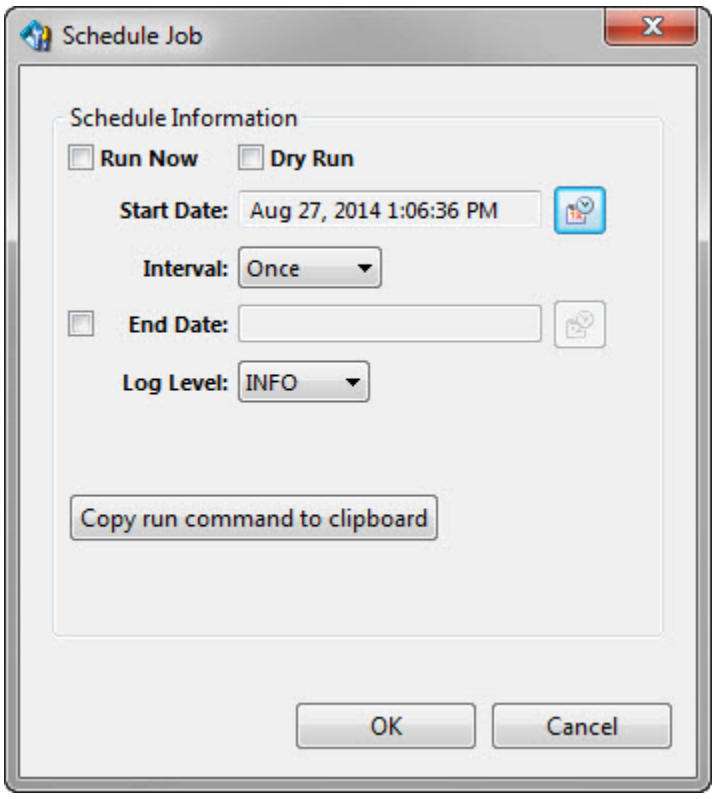
## Rescheduling Jobs

Jobs displayed in the Scheduled Jobs window can be rescheduled by selecting the job entry and clicking on the Reschedule icon in the Scheduled Jobs tool bar. This will open the Schedule Job window.

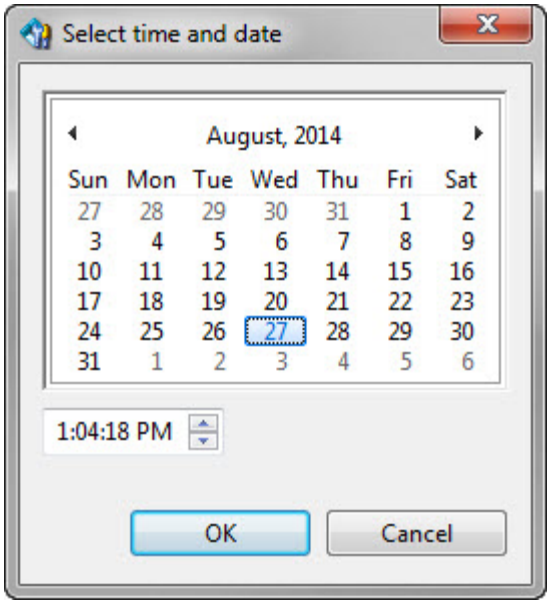



The Schedule Job window will open with the ***Run Now*** option enabled. Pressing the ***Ok*** button without making any change to the settings will cause the job to be started immediately. The schedule for the job will remain unchanged, but the job will be started when the ***Ok*** button is pressed.

Un-checking the ***Run Now*** option enables the date selection icon for selecting a job start date.

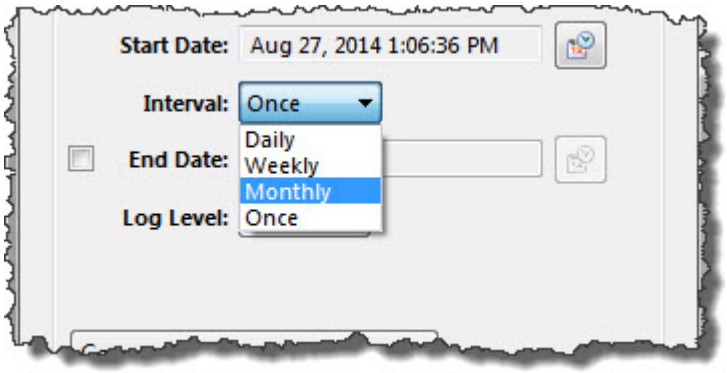



Click on the date selection icon  to select the date and time that you want the job to begin running. The Select time and date window will open. Select the date and time of day you want the job to start.

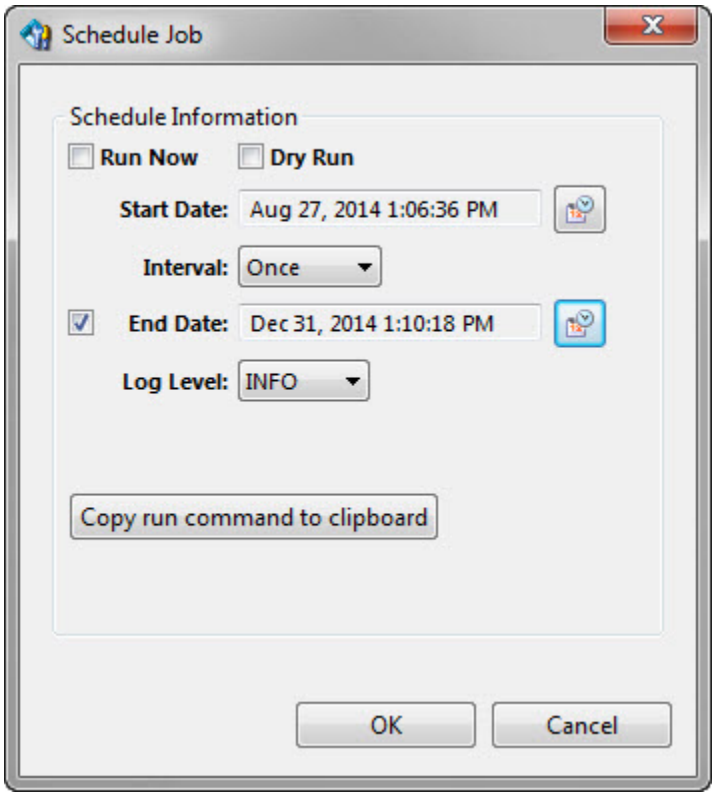



 Try clicking on the Month/Year title in the calendar. Use of the calendar selector is described in the Data Selector help document in the ***Query Filter Values*** section.

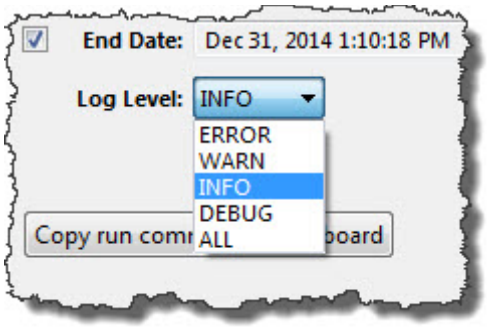
Next select the interval that you want to schedule the job to run. Select ***Once*** to run the job on the specified start date and then never run it again. Select ***Daily*** to run the job every day, ***Weekly*** to run once per week, and ***Monthly*** to run once per month. The job will start at the time of day selected for the start date.




Selecting the ***End Date*** option will enable the date selection icon  for selecting a job end date. Jobs scheduled with an interval other than ***Once*** that do not have an end date will continue to start at the prescribed interval indefinitely. Jobs having an end date will run at the specified interval until the end date is passed.




Finally select the logging level you want to use when running the job. The log level determines the amount of information that is written to the job's log file when the job is run. The INFO level is selected by default.




The meaning of each log level is described in the following table.

| Log Level | Description |
|---|---|
| **ERROR** | Produces the least amount of log file output. This level should only be used if you have no interest in anything but failures. |
| **WARN** | Produces less output than INFO. Consider using this level if you are trying to keep the log file size down and are not interested in details of successful operations. Only failure information is reported. Messages about data that could not be copied or scanned are produced, but messages about successful a successful copy or scan are not produced. |
| **INFO** | The default level. This is the recommended log level. It produces a reasonably detailed amount of information about the job execution. Messages about the number of each data type copied or scanned is produced using this log level. |
| **DEBUG** | Produces a large amount of output. You typically should not use this level unless instructed by OpenSpirit support. Large numbers of program execution messages needed to diagnose problems are produced when this log level is used. |
| **ALL** | Produces a tremendous amount of output. This level should never be used unless instructed by OpenSpirit support. Volumes of very detailed program execution messages needed to diagnose difficult problems are produced when using this log level. This log level may produce multi-gigabyte log files. |

The ***Copy run command to clipboard*** button will place the command used to run the job in the system clipboard. This can be used to either run the job manually, or to enter the job into a different job scheduling system. Use the paste feature of another application, such as Notepad or Microsoft Word, to obtain the command placed in the system clipboard by clicking on this button.

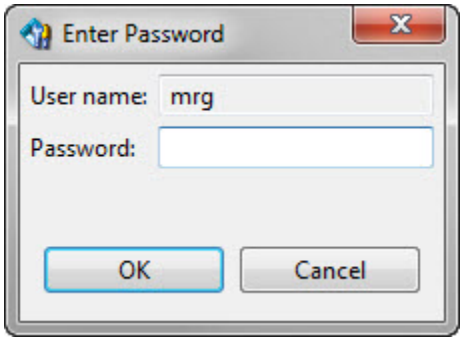
Following is an example of the command used to run a copy job on Microsoft Windows. The **66dca794-56ce-43e1-ada3-f7a003e2a48d** portion of the command is an id that refers to the copy job definition stored in the OpenSpirit master installation's metadata repository. This id will not be valid when used with an OpenSpirit master installation that does not contain the copy job with this id.

```
"C:\Program Files\OpenSpirit\v4.2\bin\ospjob.bat" OpenWorks_Teapot_to_Petra
66dca794-56ce-43e1-ada3-f7a003e2a48d INFO false Copy
```

The run command may only be valid for starting the job on the same computer and account used to create the job and schedule it.

Press the Ok button to save the schedule changes.

Saving a job schedule on Windows will display a prompt for your Windows account login password. The password is used to register the job with the Microsoft Windows Task Scheduler. No password prompt appears when scheduling on Linux.

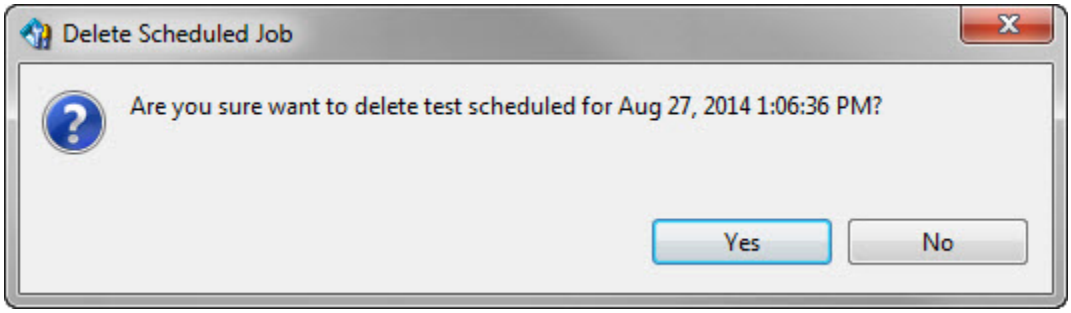



Enter your password and press the Ok button to schedule the job using the Microsoft Windows Task Scheduler. The password is not saved by OpenSpirit.

The job should show the new schedule in the job list.

## Removing a Job Schedule

Jobs that have been scheduled can be removed by selecting the job and clicking on the Remove icon in the Scheduled Jobs window tool bar. A confirmation window will open to confirm your desire to remove the job. Removing a schedule job only removes it from the scheduler. The copy job definition or scan job definition remains in the OpenSpirit metadata repository and is available for rescheduling using the Copy Job Manager or Scan Job Manager tool.

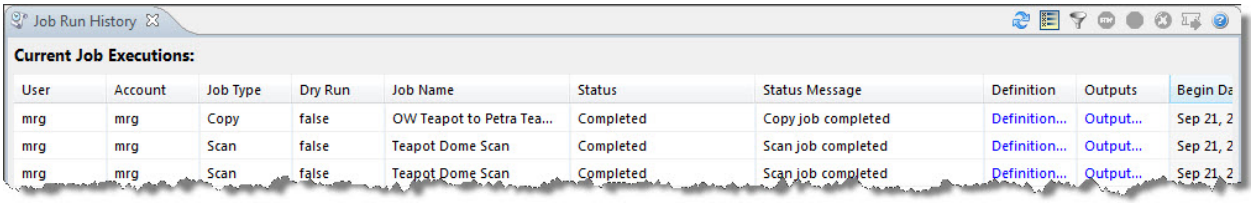


# Job Run History

## Job Run History Overview

The Job Run History tool is used to view running Copy Manager and Scan Utility jobs and to view the output from jobs that have run in the past. There is no reason to use this tool if you are not using the optional Scan Utility or Copy Manager tool.

The Job Run History tool is accessed from the OpenSpirit Desktop by clicking on the Job Run History icon  in the Data Manager tool bar, or by choosing the ***Tools > DataManager > Job Run History*** menu item. This will cause the Job Run History window to open.




The Job Run History window shows the history of your Scan Utility and Copy Manager job runs. The history includes the date and time that the job started, the date and time the job completed, and the date and time that the job's status message was last updated. Jobs that are currently running will not have a finish date.


OpenSpirit users that have been granted the ***Administer Copy Jobs*** user right will see run histories for copy jobs run by all users. OpenSpirit users that have been granted the ***Administer Scan Jobs*** user right will see run histories for scan jobs run by all users. The OpenSpirit administrator user sees copy and scan run histories for all users. All other OpenSpirit users only see histories for jobs they run; they do not see other user's jobs.

## Job Execution Display Columns

The ***User*** column shows the name of the OpenSpirit user that ran the job.

The ***Account*** column shows the login account that was used to run the job.

The J***ob Type*** column indicates the type of job, ***Copy***, ***Scan***, or ***StudioFindScan***.

The ***Dry Run*** column displays the word ***true*** if the job was a dry run. The word ***false*** is displayed if the job was an actual run. Dry run is only supported for copy jobs.

The ***Job Name*** column displays the name of the copy job or scan job.

The ***Status*** column shows the current status of the job.

The ***Status Message*** column changes periodically when the job is running to provide an indication of what the job is doing.


The ***Definition*** column contains hyperlinks that can be used to open a read only view of the copy or scan job definition. Click on a link to view a copy or scan job definition. Opening a job definition may take a few moments if the job definition view needs to initiate data queries in order to display the job's data selections. See the help guide for Copy Manager or Scan Utility for details of the job definition views.


The ***Outputs*** column contains hyperlinks that can be used to open a view of the job execution report, messages, and rejection list. Click on a link to view output generated by a copy or scan job. Job outputs can be viewed during a job run as well as after the job run has completed. See the help guide for Copy Manager or Scan Utility for details of viewing the job outputs.

The ***Begin Date*** column shows the date and time that the job began running.

The ***Finish Date*** column shows the date and time that the job finished. The words ***Not Set*** will appear if the job is still running or if it terminated abnormally.

The ***Last Updated*** column shows the date and time that the job's status message was last updated.

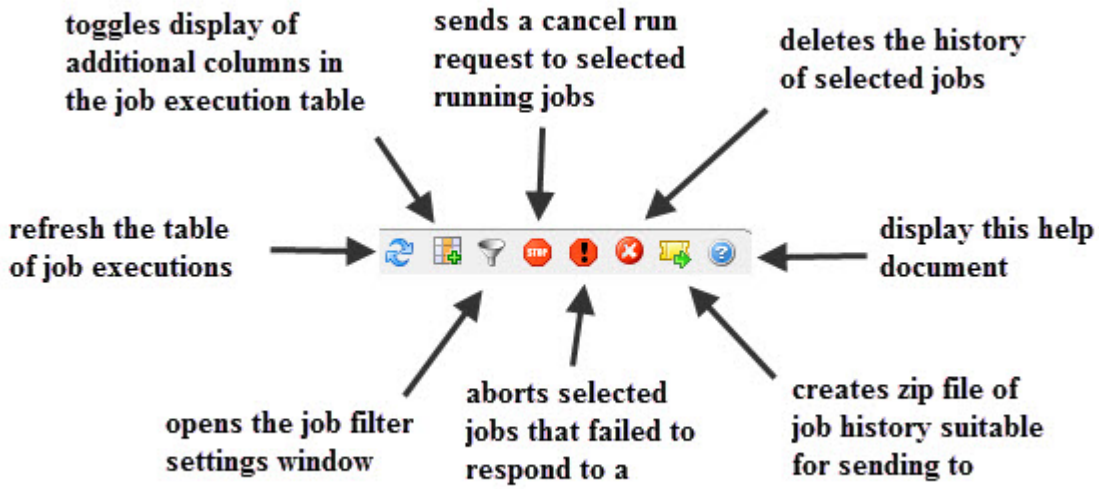
The ***Host*** column only appears if the additional columns toggle  is enabled. The column shows the name of the computer that the job was run on.

The ***PID*** column only appears if the additional columns toggle  is enabled. The column shows the operating system process id of the job. This can be helpful when using other system tools to identify and monitor the job's process when it is still running. The information is of little use once the job terminates.

# Job Run History Tool Bar

The Job Run History window provides a tool bar containing buttons that can be used to control the job history display and to operate on jobs that are still running and on jobs that

are no longer running. Some tool bar buttons are not enabled until one or more job histories are selected.




## Refresh Button

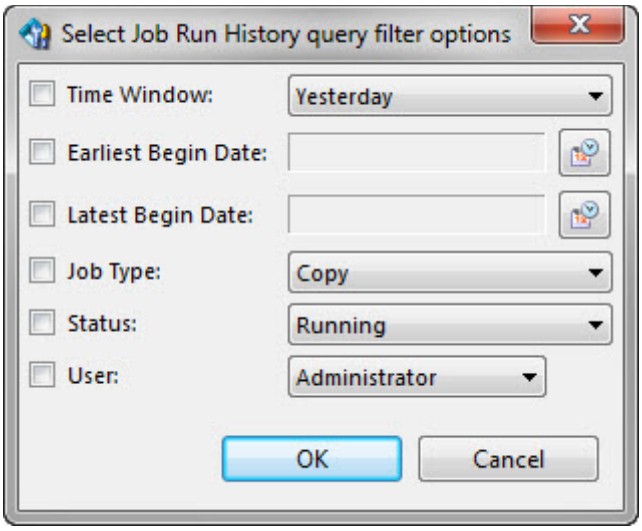
The refresh tool bar button will refresh the entire job execution table by re-reading the information from the OpenSpirit master installation's database.

## Additional Columns Button

The show additional columns button toggles on and off the display of additional columns in the table of job executions. The additional columns are displayed on the far right which may require the table to be scrolled to the right to see them. The additional columns are the Host and PID columns.

## Filter Button

The filter button opens the job run history query filter window which provides several options to filter job execution rows from being displayed in the table. This can be useful when you have a very large number of job run histories.




Check one or more filter options by clicking on check boxes along the left edge of the options window. Jobs matching all selected filter options will be shown in the job history table.

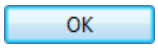
The ***Time Window*** option provides a few common time intervals to use as filter criteria. The time windows or intervals are ***Yesterday***, ***Last Week***, ***Last Month***, and ***Last Year***. The time window filter is applied based on the begin date of the jobs. Choose one of these options to filter out all jobs that did not begin running during the selected time window.

The ***Earliest Begin Date*** and ***Latest Begin Date*** options provide a way to filter jobs based on a specific interval of time. These options are not available if the ***Time Window*** option is enabled. Specify only a first begin date to filter out jobs older than the specified date. Specify only a latest begin date to filter out jobs newer than the specified date. Specify both an earliest and latest begin date to filter all jobs except those started during the specified time interval.

The ***Job Type*** option is used restrict the job histories to only a specific type of jog (e.g. only copy jobs or only scan jobs).

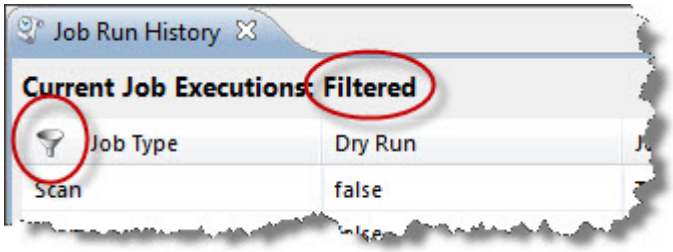
The ***Status*** option is used to restrict the job histories to only those histories having a specified job status.

The ***User*** option is used to restrict the job histories to only show jobs run by a specified OpenSpirit user. This option is only useful if you are a Copy or Scan job administrator or the OpenSpirit administrator. Regular users can only see their own jobs anyway.

Press the 

button at the bottom of the filter window to dismiss the window and apply the filter to the job run history table.

The word ***Filtered*** appears next to the Current Job Executions title above the table of job histories to indicate when a filter is in effect. A filter icon  also appears in the column heading of the columns that are being used to filter.




## Cancel Button

The cancel button is enabled when at least one running job is selected. Pressing the cancel button sends a cancel request to the running jobs that have been selected. The job should cleanly terminate at the next opportunity. The job's status column will indicate that a cancel has been requested. The job should terminate at the next opportunity.

## Abort Button

The abort button is enabled when a job with a ***Cancel Requested*** status is selected. Pressing the abort button will initiate an attempt to forcibly kill the running job's process. An abort can only be performed when the job is running on the same machine as the OpenSpirit Desktop and is running under the same account.

The abort button should only be used as a last resort. It can cause the running job to exit in a way that could potentially cause corruption of the job's message log or possibly corrupt the database that it is writing its output to.

## Delete Button

The delete button is enabled when one or more completed jobs are selected. Pressing the delete button will delete the history record and job output of all selected jobs. The history cannot be recovered after deletion, so make sure the history is no longer needed before performing a delete.

Job run histories are maintained in the OpenSpirit master installation's database. Histories can be quite large and can accumulate over time consuming significant storage space in the OpenSpirit master installation. Large numbers of histories can also slow down performance of the Job Run History tool. Consider deleting old histories that are no longer needed for audit trail purposes.

## Send to Support Button

The send to support button is enabled when a single job is selected. Pressing the send to support button causes a zip file to be created that contains files that will be helpful when entering a support issue about problems running the job. A window will appear that shows where the zip file was created. The zip file is not automatically sent to TIBCO OpenSpirit Support. The user is responsible for attaching the zip file to a support request entered using the TIBCO online support portal.

## Help Button

Pressing the help button  opens this help document.

# Model Views

A *Model View* represents a custom view of the *OpenSpirit data model* or of a *native data model*. *Model View*s are similar in concept to SQL views. They are used to present a database in a more user friendly form. A model view can present a subset of the data model's *data type*s and *attribute*s. A model view can also change the names of data types and attributes and can join related data types to create a new data type. Model views enable companies to present data in the OpenSpirit tools using terminology common to the company. Model views also enable companies to subset the data types to only expose the *data type*s and *attribute*s that are populated with data in their data stores.

The OpenSpirit framework ships with a single model view for the *OpenSpirit data model*. It is used for browsing data in the Data Selector. Installing the optional OpenSpirit Scan Job Manager adds another model view that is based on the *OpenSpirit data model*. The scan model view is used to control how spatial data is handled by the Scan Job Manager tool. The Model View Manager tool can be used to inspect these model views, derive new model views from them, or create entirely new model views for viewing the *OpenSpirit data model* or for viewing *native data model*s.

# Model View Manager Overview

The Model View Manager Tool is accessed from the OpenSpirit Desktop by clicking on the Model View Manager tool bar icon  or by choosing the ***Tools > Data Manager > Model View Manager*** menu item. The Model View Manager tool is used to inspect, create, and modify model views used by the OpenSpirit Data Selector and the OpenSpirit Scan Job Manager.

The table in the upper left corner of the Model View Manager window lists all of the model views that exist in your OpenSpirit installation. The model views are stored in the OpenSpirit metadata repository that resides in the OpenSpirit master installation.

The ***Default*** column indicates if a model view is the default model view for its type. Only one model view of a given type can be a default. Marking a model view as the default for its type will cause the tools that use the model view to have it selected by default. For example, making a Data Selector model view the default will cause the Data Selector tool to show it as the selected model view in its Data Source Selection window. Making a Scan Job model view the default will cause the Scan Job Manager to show it as the default scan model view.

The ***Model View Name*** column shows the name of the model views.

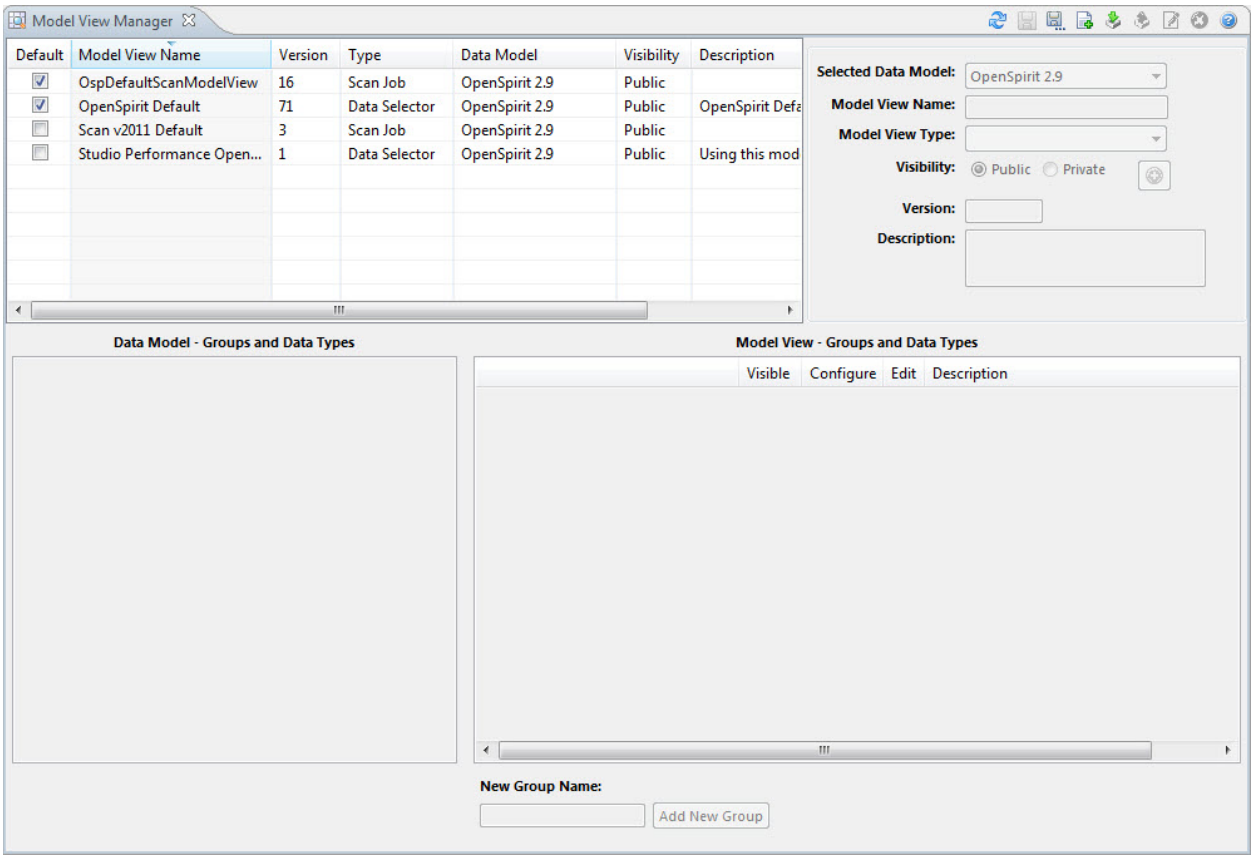
The ***Version*** column shows the model view's version. Newly created model views are assigned version 1.0. The version number is incremented each time the model view is edited. Only the highest version of a model view is available in the Model View Manager.

The ***Type*** column indicates if the model view was created for use in the Data Selector, the Scan Job Manager, or in Studio Scan.

The ***Data Model*** column indicates the data model that the view is for.

The ***Visibility*** column indicates if the model view is available for use by all OpenSpirit users or only by the user running the Model View Manager. Private model views can only be seen and used by the user that creates them.

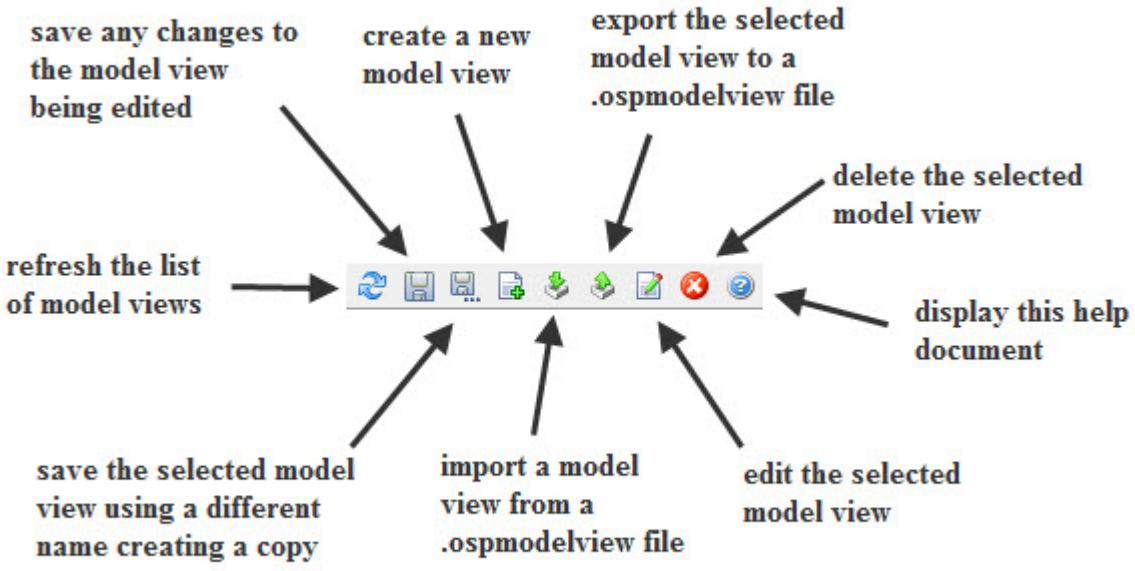
The ***Description*** column displays an optional textual description that is typically used to describe the purpose of the model view.




The upper right section of the Model View Manager window is primarily used when creating new model views. It can also be used to edit the description and properties of a model view. The bottom half of the Model View Manager window is used to browse and edit the details of the model view.

# Model View Manager Tool Bar

The Model View Manager tool bar contains buttons used to view, create, edit, delete, import, and export model views. These actions are described in the following sections of this help guide. The tool bar resides in the upper right hand corner of the Model View Manager window.




## Refresh Button

The refresh button closes any model view that is open for edit and re-reads the list of model views from the OpenSpirit metadata repository.

## Save Button

The save button is enabled when a model view is open for editing and at least one change has been made to the model view. Press the save button to write the model view changes to the OpenSpirit metadata repository.

## Save As Button

The save as button  is used to create a copy of a model view. Select a model view in the model view list and press the save as button. You will be prompted to enter the name to give the new model view. The new copy will appear in the model view list.

## Create Button

The create button  is used to create a new model view. See the Creating New Model Views section of this guide for information about creating new model views.

## Import Button

The import button  is used to import a model view file that was created using the model view export feature. Click on the import button to open a file selection window. Select the model view file to be imported. The imported model view will appear in the model view list.

## Export Button

The export button  is used to export a model view to a file. Export is typically used to copy a model view to a different OpenSpirit master installation. The model view file can be loaded into an OpenSpirit installation using the import feature.

Select the model view to be exported and click on the export button. You will be prompted to select the directory that the model view will be exported to. The model view will then be written to a file where the file name is the same as the model view name and the file name extension will be ***.ospmodelview***. For example, exporting a model view named ***MyModelView*** will create a file named ***MyModelView.ospmodelview***.

## Edit Button

The edit button  is enabled when a model view is selected in the model view list. Click on the edit button to open the selected model view for editing. Model views can also be opened for editing by double clicking on a model view in the model view list. See the Editing Model Views section of this guide for information about model view editing.

## Delete Button

The delete button  is enabled when a model view is selected in the model view list. Click on the delete button to delete the selected model view. Model view deletion cannot be undone.

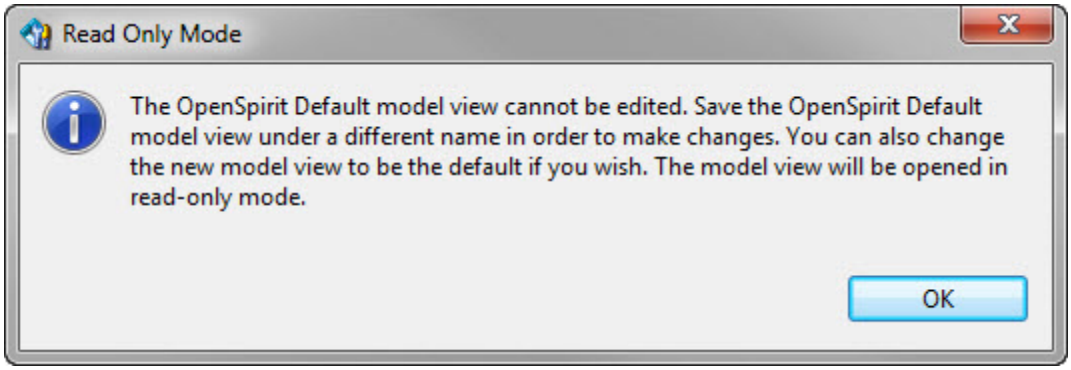
# Help Button

The help button  opens this help guide.

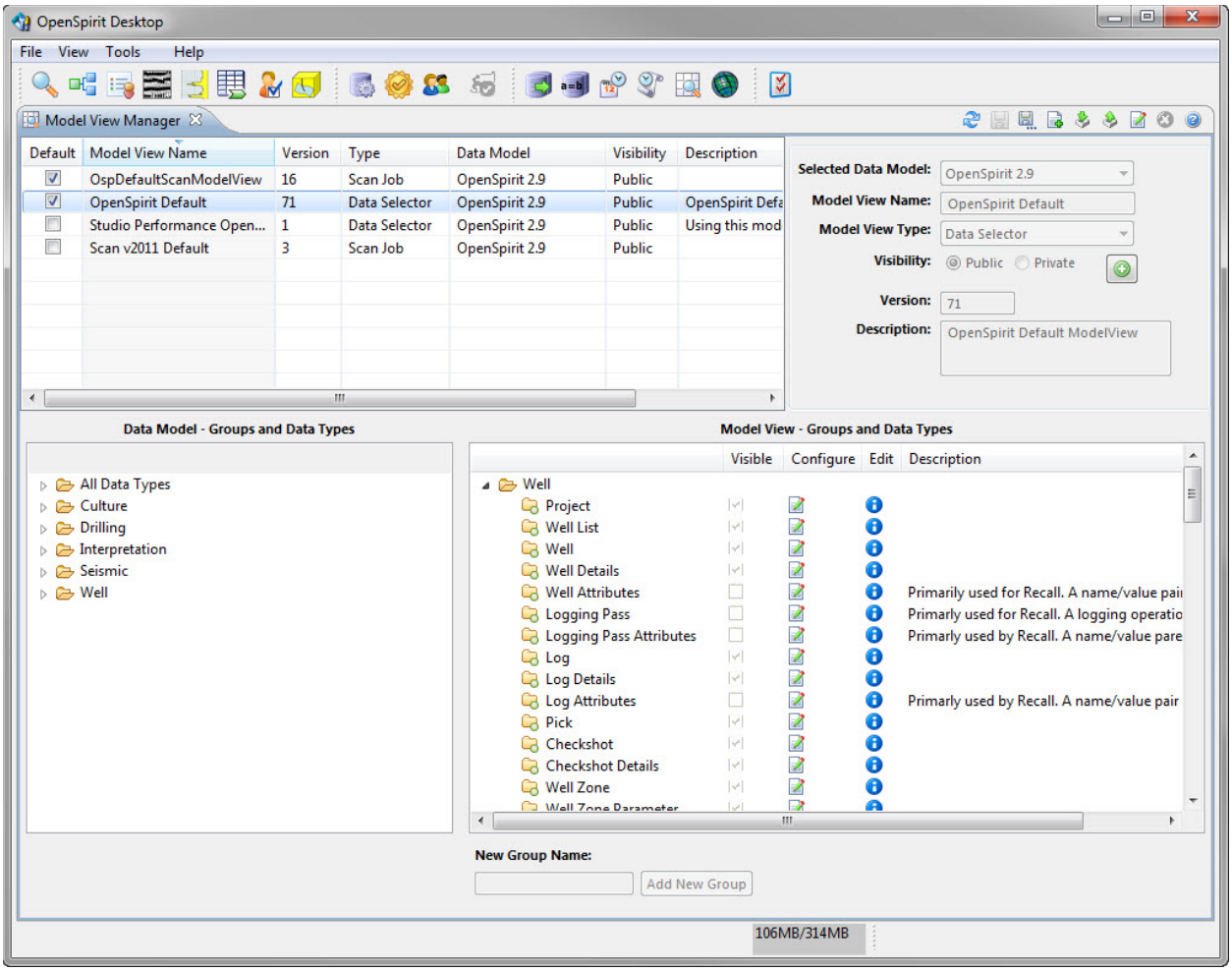
# Viewing Model Views

Model views can be viewed by double clicking on a model view in the model view table, or by selecting a model view and clicking on the ***Edit*** icon  in the Model View Manager tool bar. The model view will be open for both viewing and editing if the user has edit rights to the model view. The model view will be opened in a read only mode if the user does not have permission to edit it. The default data selector model view and scan job model view that is included in your OpenSpirit installation cannot be edited. You must make a copy in order to edit them. This restriction insures that updates to your OpenSpirit installation that include changes to the default model views will not impact any changes made by customers.

A warning message is displayed when opening a model view that the user does not have write access to.

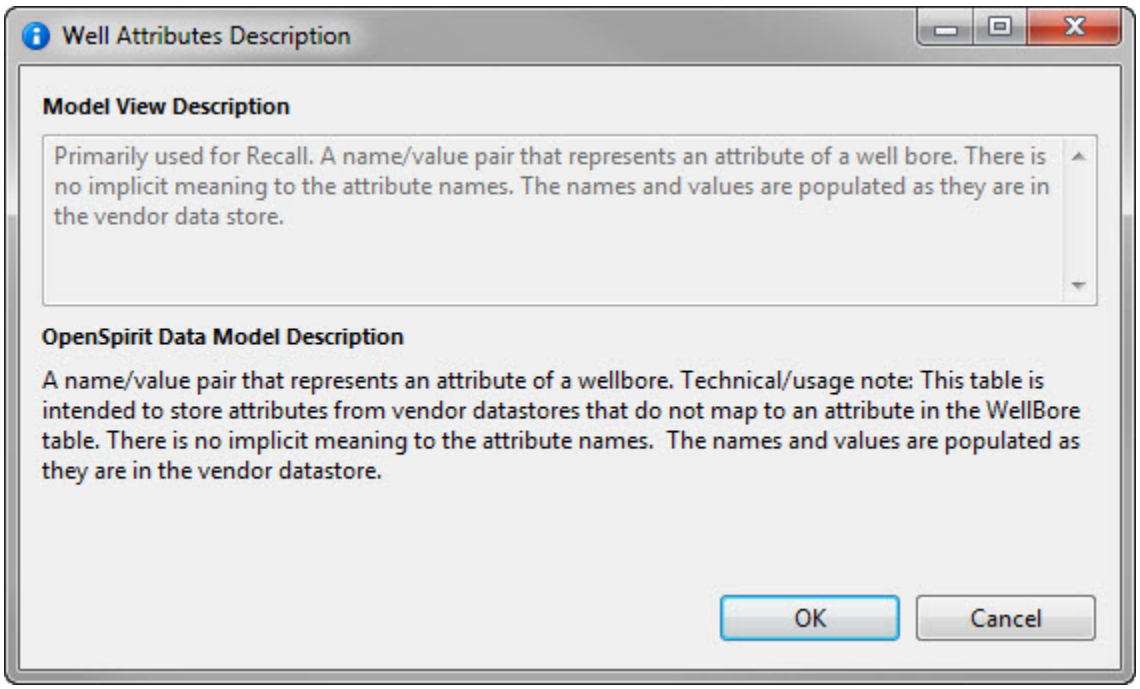



Pressing the ***Ok*** button will open the model view in read only mode. Changes to the model view cannot be made when opened in read only mode.

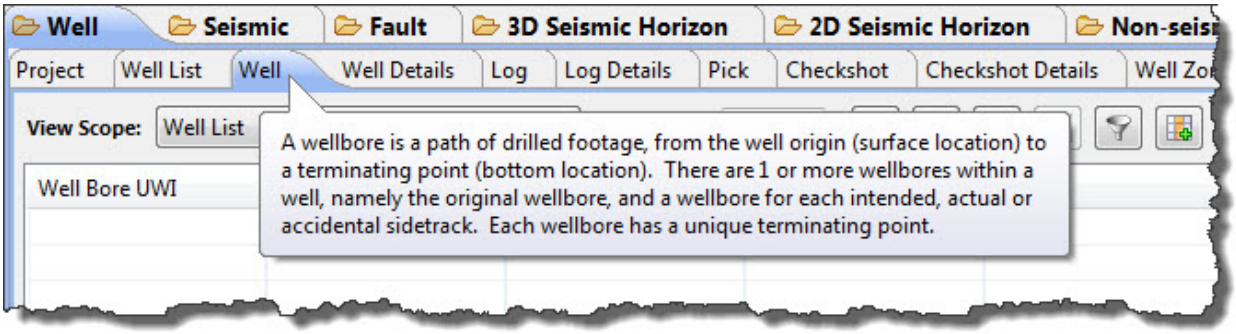



The upper right section of the model view window displays the model view header information. This includes the name of the data model that the model view is based on. It also shows the name of the model view, the type (Data Selector or Scan Job), the visibility scope (Public or Private), the version of the model view, and any description that was given to the model view.

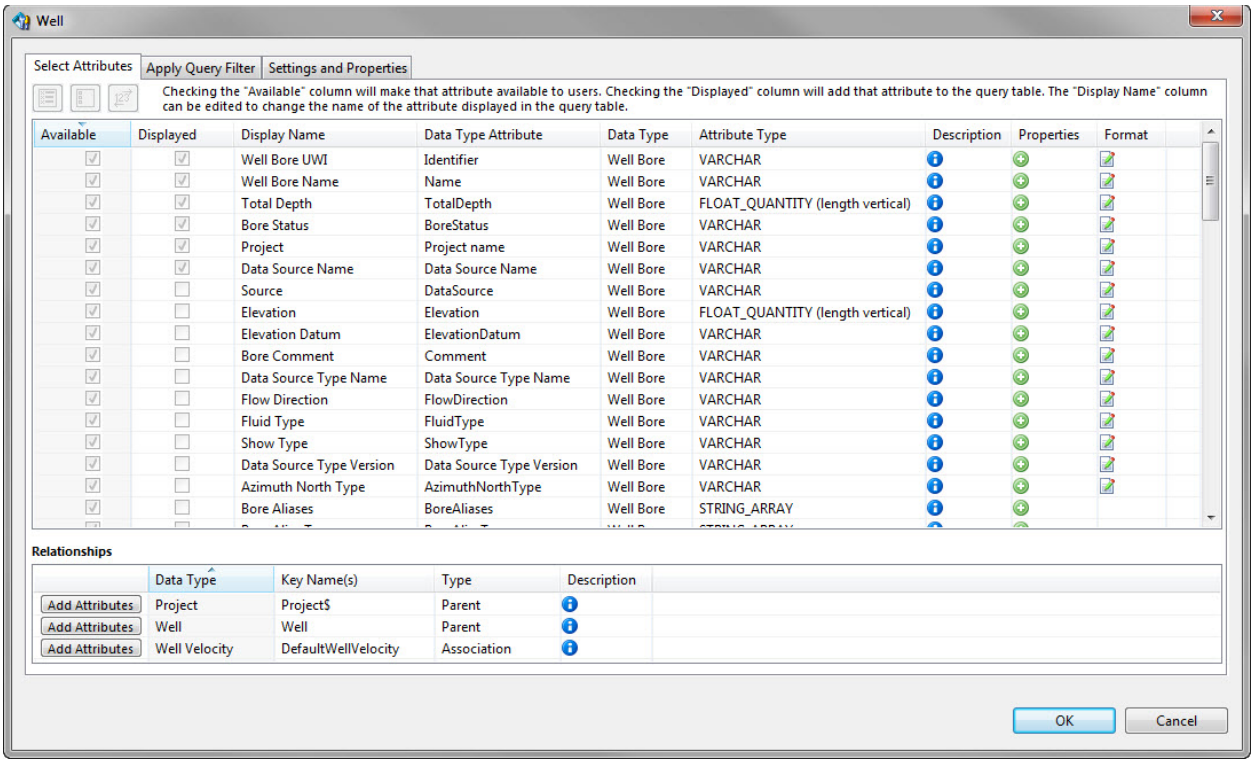
The lower left section of the model view window displays the data types and data type groups that make up the data model that the model view is based on. The lower right section of the model view window shows the model view data types and groups. Clicking on the description icon next to a model view data type opens a window that displays the description given to the model view data type by the person constructing the model view. The window also displays the description of the data type from the data model.




The model view data type description appears as the tool tip when hovering the mouse pointer over the data type tab in the Data Selector tool.




Clicking on the configure icon  next to a model view data type in the lower right section of the model view window displays the model view data type details window for the model view data type. The ***Select Attributes*** tab on the details window lists all of the attributes available for the data model data type that the model view data type was derived from. The following example shows the ***Well*** model view data type from the ***OpenSpirit Default*** model view which was derived from the ***Well Bore*** data type from the ***OpenSpirit v2.9*** data model.




The ***Available*** column indicates if an attribute will be available for display in tools using this model view.

The ***Displayed*** column indicates if the attribute is turned on for display by default. The attribute must be available in order to be displayed by default.

The ***Display Name*** column shows the name that will appear in the Data Selector column header for the attribute.

The ***Data Type Attribute*** column shows the display name of the attribute in the data model, in this case the OpenSpirit v2.9 data model.

The ***Data Type*** column shows the display name of the data model data type that the attribute belongs to. This column is useful when joining multiple data model data types into a single model view data type.

The ***Attribute Type*** column indicates the type of the attribute (e.g. TIMESTAMP, FLOAT_QUANTITY, VARCHAR, etc.).

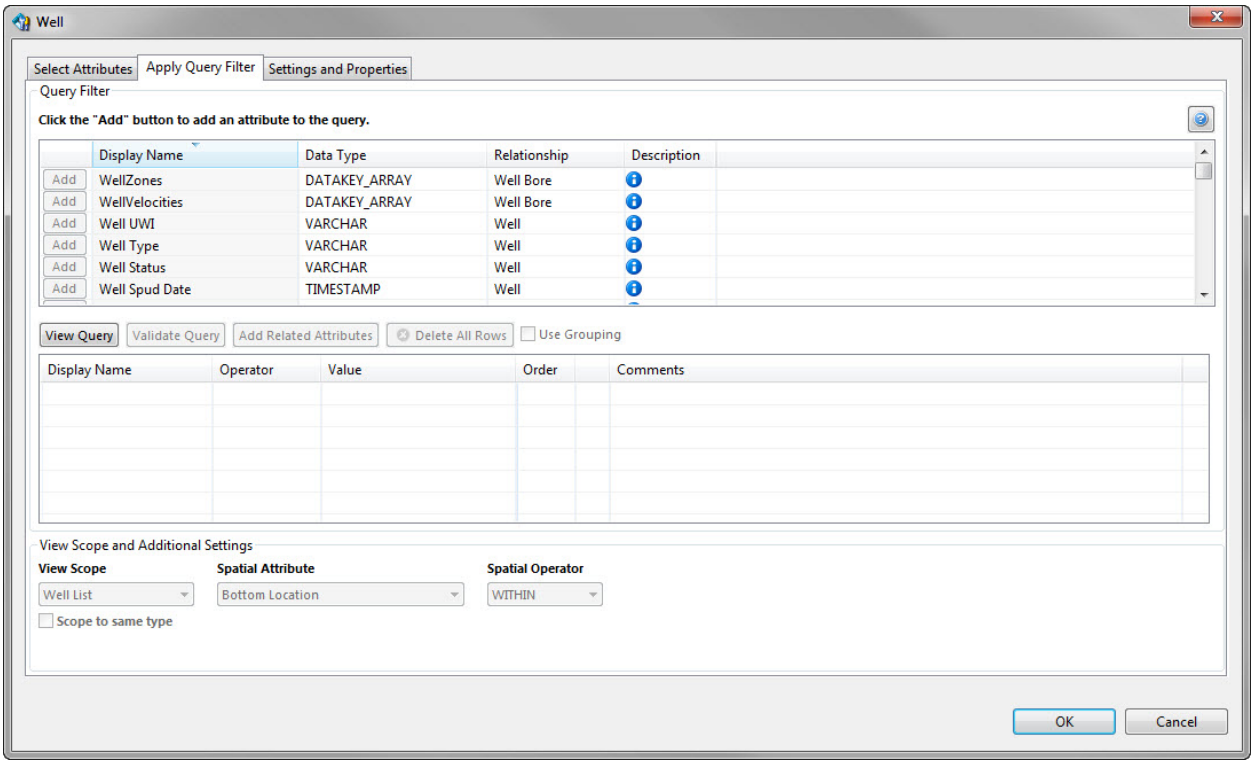
Clicking on an attribute's ***Description*** icon will open a window that displays the description that was given to the attribute. The attribute description appears as a tool tip when hovering the mouse over the attribute's column header in the Data Selector.

Clicking on an attribute's ***Properties*** icon will open a window that displays properties that have been assigned to the model view attribute. Properties are used to indicate special handling for some attributes in tools that use the model view, such as the Scan Job Manager.

Clicking on an attribute's ***Format*** icon will open a window that shows any custom display format settings that have been applied to the attribute. The model view attribute's display format settings will override any default display settings in the desktop preference settings.

The ***Relationships*** section at the bottom of the window lists all related data types that are available to join into the model view data type.

The ***Apply Query Filter*** tab of the model view data type details window shows any query filter that has been configured for the model view data type.

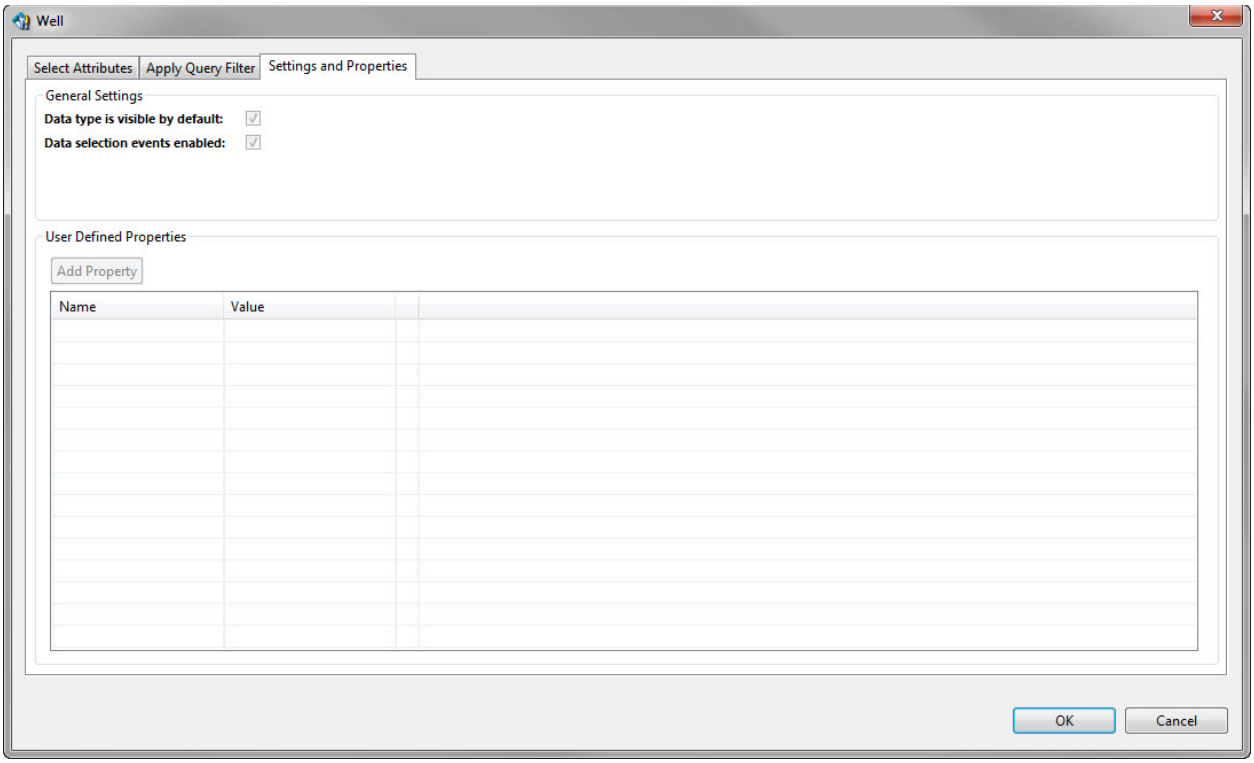



Query filters can be added to a model view data type to constrain it to display a subset of the data that is available in the data source. See the help documentation for the Data Selector Query Filter Window for instruction in using the query filter builder.

For example, a model view could contain a data type named "Deep Wells" that was derived from the OpenSpirit Well Bore data type with a query filter on the Total Depth attribute to exclude all well bores except bores with Total Depth > 6000 meters.

The bottom section of the ***Apply Query Filter*** tab shows the default View Scope and default Spatial Attribute to use for the model view data type.

The ***Settings and Properties*** tab of the model view data type details window shows if the data type's tab is turned on for display in the Data Selector by default, and it shows if sending data selection events for the rows in the Data Selector tab is allowed.

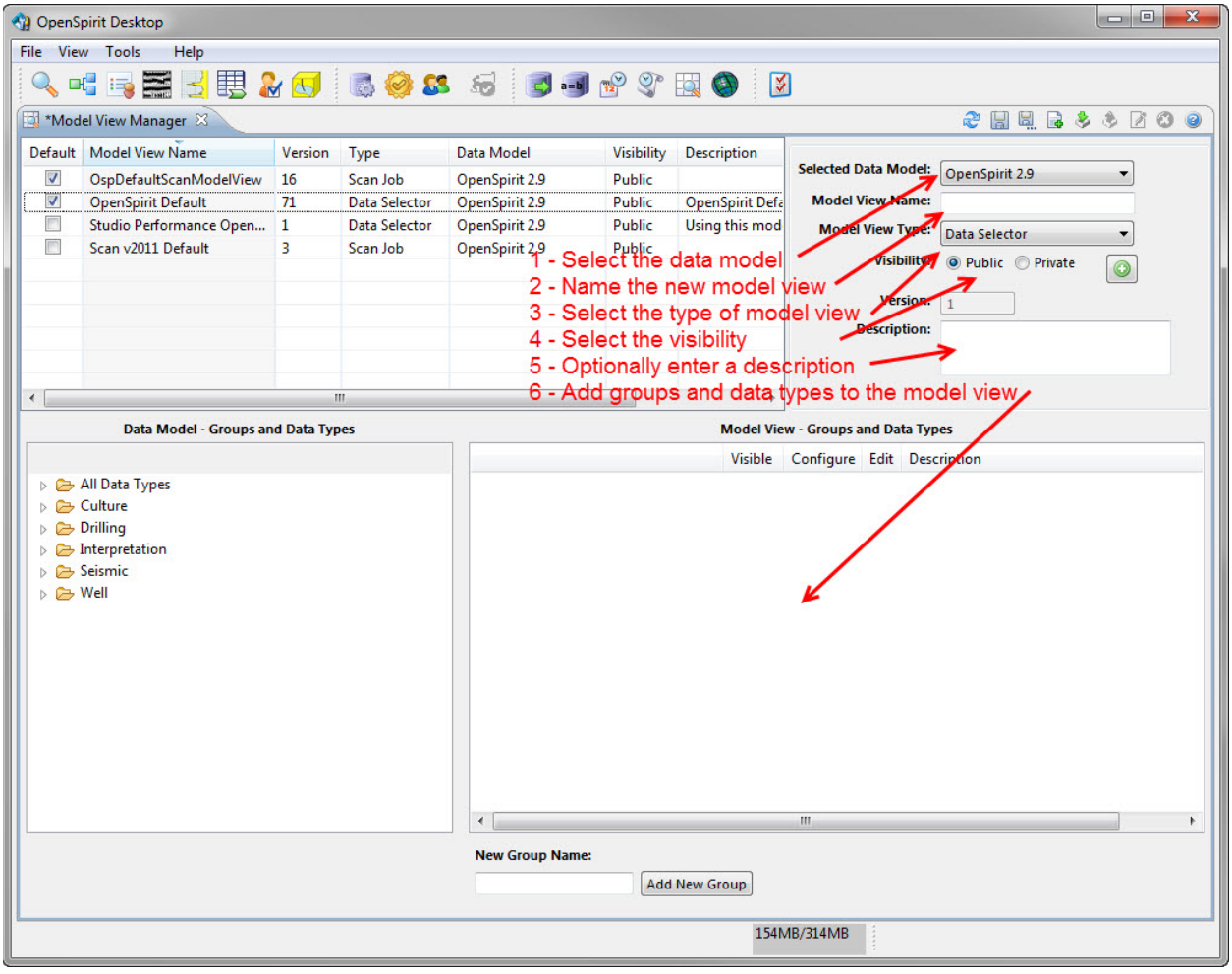



The ***User Defined Properties*** section at the bottom of the Settings and Properties tab shows any properties that have been assigned to the data type. Properties are sometimes used to signal special handling for some tools, such as the Scan Job Manager tool.

# Model View Creation and Editing

## Creating New Model Views

New model views are created by clicking on the ***Create model view*** icon  in the Model View Manager tool bar. This will clear out the ***Model View Name*** field and ***Description*** field in the upper right section of the Model View Manager window and will set the ***Selected Data Model***, ***Model View Type***, and ***Visibility*** selections to their default values. The bottom left section of the window will show the data type groups that exist in the selected data model and the lower right section of the window will be empty. The Model View Manager window is now ready for you to begin defining the new model view.




## Data Model Selection

First select the data model that the model view will be used to view. Model views created from the OpenSpirit data model can be used to view any data source type that is supported by OpenSpirit. Model views created against any other data model can only be used to view

data sources of that data model type. For example, selecting the ***OpenWorks R5000*** data model means the model view you are creating can only be used to view OpenWorks R5000 data sources. It cannot be used to view Kingdom, GeoFrame, PPDM, or any other data source type. The data model you select will determine the data types and groups that will be available in the lower left section of the Model View Manager window. These are the data types that will be available for constructing the model view data types.

## Model View Name

Next give your model view a meaningful name. Public model view names must be unique among all existing public model views. Private model view names must be unique among all private model views owned by the user that is creating it.

## Model View Type

Select the model view type. Currently model views can be created for use in the OpenSpirit Data Selector tool or the OpenSpirit Scan Job Manager tool.

## Model View Visibility

Select the visibility you would like the model view to have. Public model views are available for use by all OpenSpirit users. Private model views are only available to the user that creates them. You must have the ***Administer Data Views*** right in order to create, modify, or delete a public model view. The OpenSpirit administrator can grant or deny any OpenSpirit user the ***Administer Data Views*** right. Any OpenSpirit user that has been granted the ***Administer Data Views*** right can edit or delete any public model view, regardless of the user that created it. The only exception is the model views that are created during installation of OpenSpirit. The model views shipped with OpenSpirit cannot be edited.

## Model View Properties

Properties can be assigned to a model view. Properties consist of name/value pairs. Model view properties are provided for the convenience of application developers as a way to assign values to a model view that can be used to control application specific behaviors. There is typically no need to assign any properties to a model view unless you are instructed to do so by an application supplier.

 Any properties that appear on model views included in the OpenSpirit runtime or model views that are installed by other OpenSpirit applications such as the OpenSpirit Scan Utility or the OpenSpirit Copy Manager should not be deleted or modified unless explicitly instructed to do so by OpenSpirit support.

## Model View Description

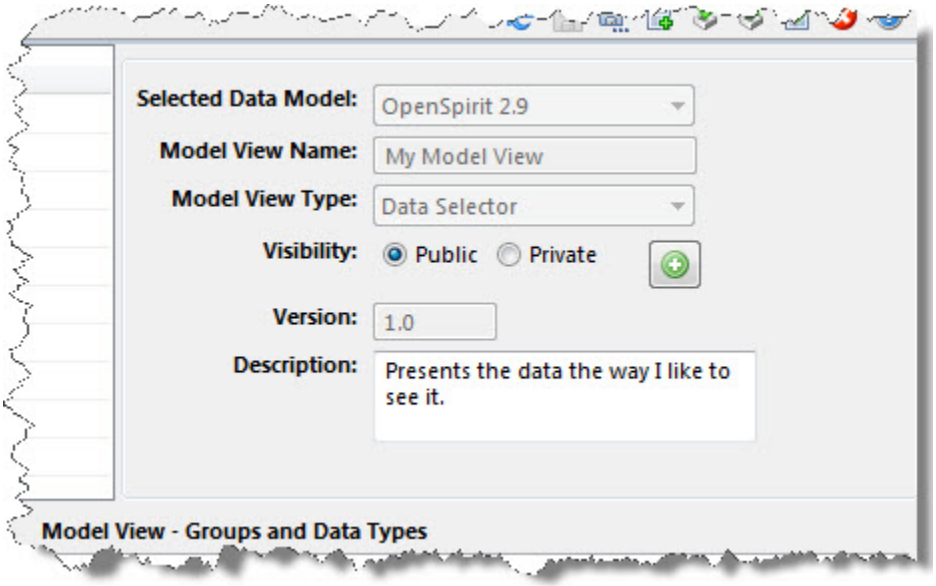
The model view description is optional. It can be used to explain the intended purpose for the model view if the model view name does not make its use apparent.

The model view name, data model, and model view type cannot be changed once the model view has been saved. You can rename a model view by making a copy by clicking on the Save as icon and giving the copy the new name. The model view must be recreated in order to change the data model or the model view type. The visibility and description can be changed after the initial save.

Once all of the information has been entered in the upper right section of the Model View Manager window you can begin building up the content of your model view. This is described in the Building Model View Groups and Data Types section of this help guide. You should click on the Save icon periodically during the construction of your model view to save the current state. Clicking the save icon will write the model view to the OpenSpirit metadata repository. The model view's version number will be incremented each time the model view is saved after the initial save. There is no way to access older versions of a model view. Only the most recent version is available for viewing and editing.

# Editing Model Views

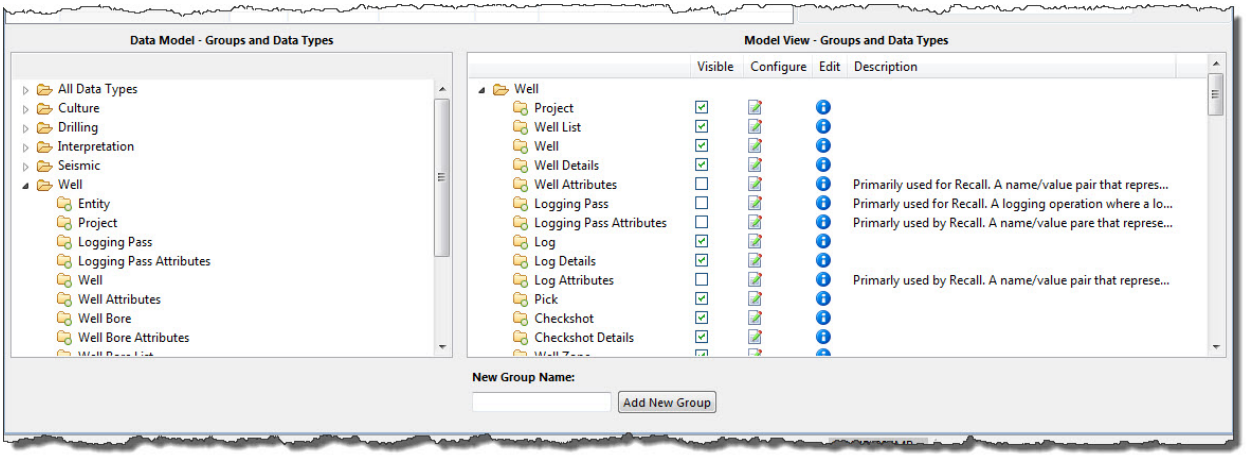
Model views can be modified by selecting them in the list of model views and clicking on the Edit icon in the Model View Manager tool bar. This will open the model view in edit mode if the user owns the model view or has the ***Administer Data Views*** right. The only model view header information that can be edited is the visibility, description, and the model view properties. The data model, model view name, and model view type cannot be changed after the model view has been created and saved.




Most model view editing is done using the Data Model and Model View sections at the bottom of the Model View Manager window. This is described in the help guide chapter titled Building Model View Groups and Data Types.

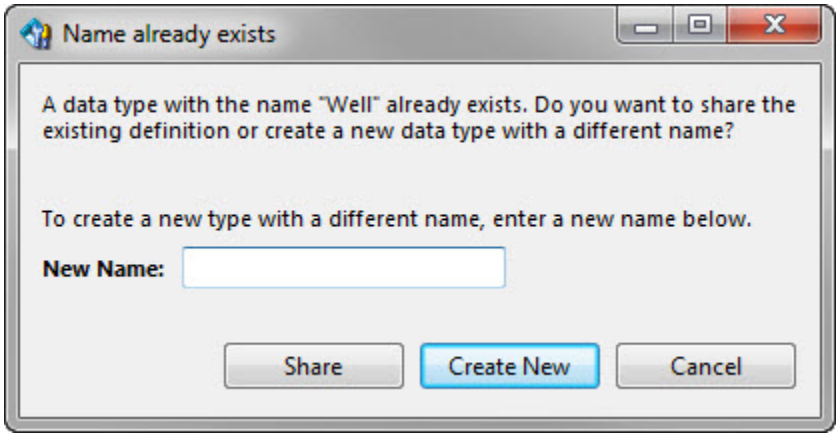
# Building Model View Groups and Data Types

The lower left section of the Model View Manager window contains the data model groups and data types. The lower right section of the Model View Manager window contains the model view groups and data types.




The model view data type groups and data types are built up by dragging data model data types and/or groups from the lower left section of the window and dropping them in the lower right section. Dragging and dropping a group will bring over all of the data types that exist in the data model group. Groups and data types that have been added to the model view can be renamed or removed by clicking on them and pressing the right mouse button. A popup menu will appear that contains options to create a new group, rename the selected group or data type, or delete the selected group or data type. Deleting a group or data type does not remove it from the data model in the lower left section of the window. They can always be dragged over to the model view again.

Dragging the same data type to the model view a second time will cause the ***Name already exists*** window to appear.




This window gives you the opportunity to ***share*** the data type within the model view, ***create a new*** data type within the model view, or cancel the drag. Data types are shared in order to have them appear in more than one model view group. Shared data types appear in multiple

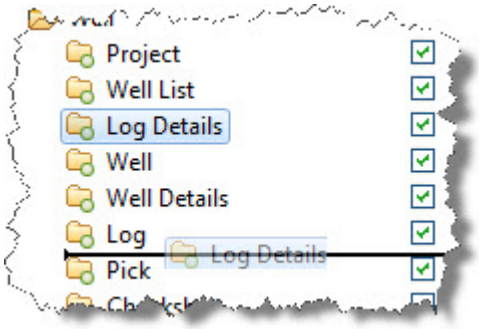
groups, but they are actually a single data type. Renaming shared data types or editing their configuration applies to all occurrences of the shared data type within the model view.

A new name must be given to the data type when selecting the ***Create New*** option. The new model view data type will be used to view the same data model data type, but will appear in the model view with a different name and can have different attributes enabled, different query filters, and other settings from the other model view data types created from the same data model data type.

Sharing was done with the ***Project*** data type in the OpenSpirit Default model view. The Project data type appears in all of the model view groups so it can be easily accessed without having to select a different group tab in the Data Selector. The Create New option was used in the OpenSpirit Default model view to create details tabs in the Data Selector. For example, the ***Well*** group in the OpenSpirit Default model view contains a ***Well*** data type and a ***Well Details*** data type. Both of these model view data types were derived from the OpenSpirit data model's ***Well Bore*** data type joined with attributes from the ***Well*** data type. The ***Well*** data type and a ***Well Details*** data type both represent a Well Bore, they differ in the attributes that are available for display and in the View Scope choices.

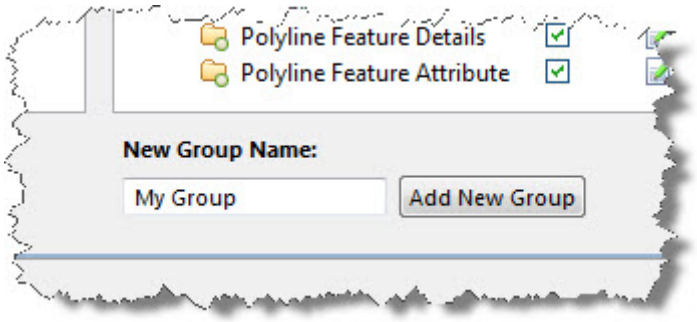
The ***Visible*** check box next to each model view data type determines if the tab representing the data type is turned on in the Data Selector by default.

The top to bottom order that the model view data types appear within the group determines the left to right order that the data type tabs will appear in the Data Selector. Model view data types can be dragged up or down to change the order.




Click on the Configure icon next to each model view data type to open the model view data type details window that is used to configure the attributes to be included in the data type and how they are displayed. The details window is described in the next section of this help guide.

New groups can be created by typing a new group name in the field at the bottom center of the Model View Manager window and pressing the ***Add New Group*** button Add New Group. The new group will appear at the bottom of the ***Model View - Groups and Data Types*** table. Data types can then be added to the group and the group can be moved up or down in the group order by dragging it with the mouse.



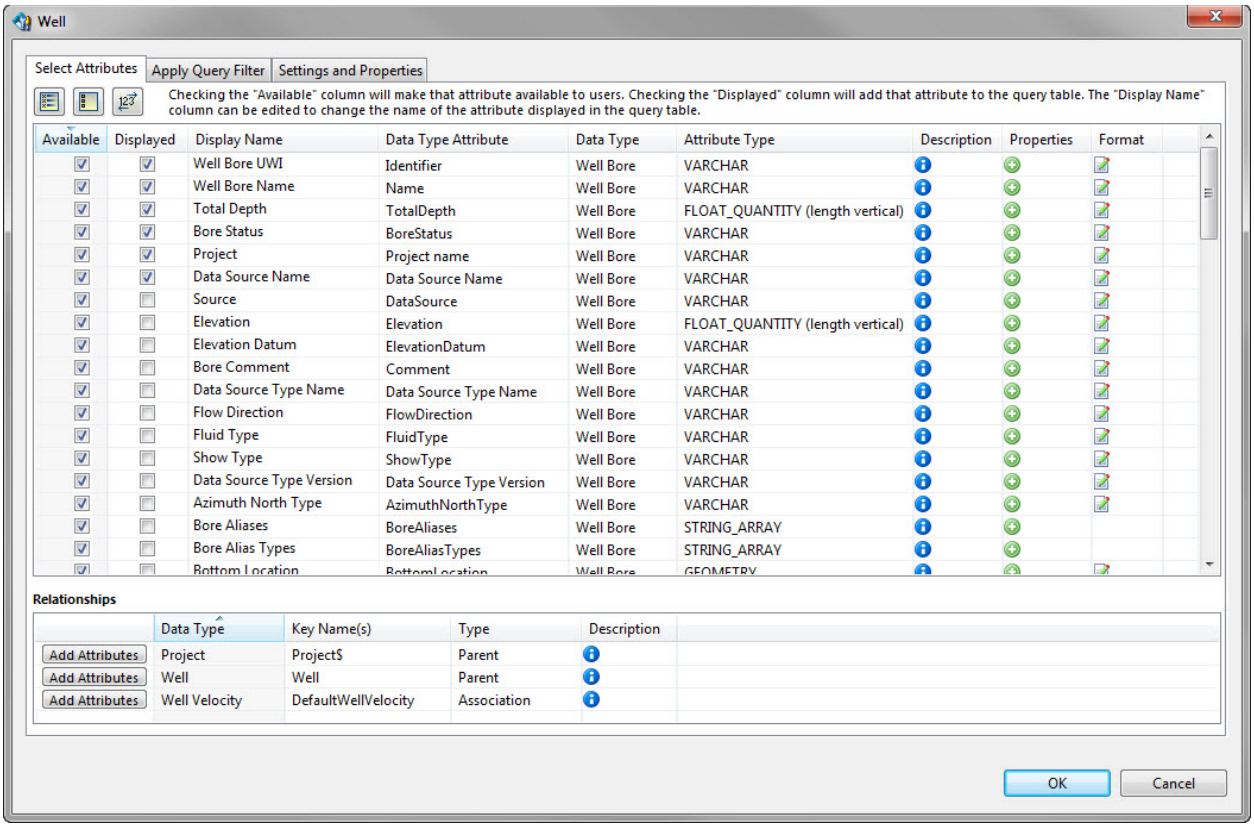

# Configuring Model View Data Types

Click on the Configure icon  next to a model view data type to open the model view data type details window that is used to configure the attributes to be included in the data type and how they are displayed. The data type details window contains three tabs, a ***Select Attributes*** tab, an ***Apply Query Filter*** tab, and a ***Settings and Properties*** tab. These tabs are described in the following help guide sections.

# Model View Data Type Details Window

## Select Attributes tab

Most of the model view *data type* configuring is done in the ***Select Attributes*** tab. The majority of the tab displays the attributes that are available from the data model selected when creating the model view. The bottom section of the tab lists data types that have a relationship defined in the data model that permits them to be joined with the primary data model data type used to create the model view data type being configured.




Select the check box in the ***Available*** column next to attributes that you want to make available for use in tools using this model view. Deselecting the ***Available*** option on an attribute will automatically deselect the ***Displayed*** option for that attribute.

Select the check box in the ***Displayed*** column next to attributes that you want to be visible by default in tools using this model view. Selecting the ***Displayed*** option will automatically select the ***Available*** option. Attributes must be available to be displayed.

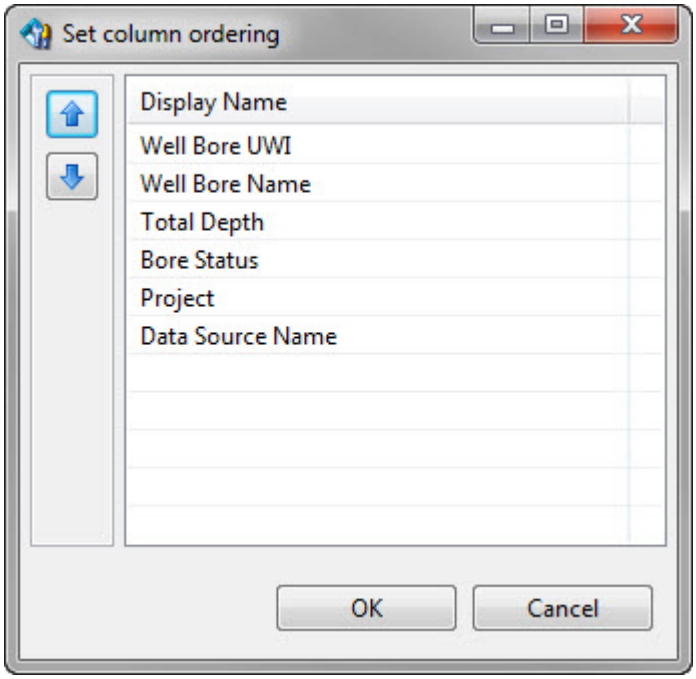
Clicking the ***Select all rows*** icon  in tab's tool bar will select the ***Available*** option for all attributes. Clicking the ***Clear all rows*** icon  in the tab's tool bar will deselect the ***Available*** option and the ***Displayed*** option for all attributes.

The ***Display Name*** for an attribute can be changed by clicking in the ***Display Name*** table cell and typing in a new name. The ***Display Name*** will appear as the column header in tools, such as the Data Selector, that use the model view.

The ***Attribute Type*** column indicates how the attribute is represented (e.g. as a TIMESTAMP, INTEGER, VARCHAR, etc.). Some attribute types support custom display format options. For example, TIMESTAMP attributes can be displayed as just a date, or as a date and a time of day. FLOAT_QUANTITY attributes can be displayed with the number and unit in the same column or in separate columns. Attributes that support custom display format options will appear with an edit icon  in the ***Format*** column. Clicking on the edit icon will open a window that can be used to set display format options that apply to just that

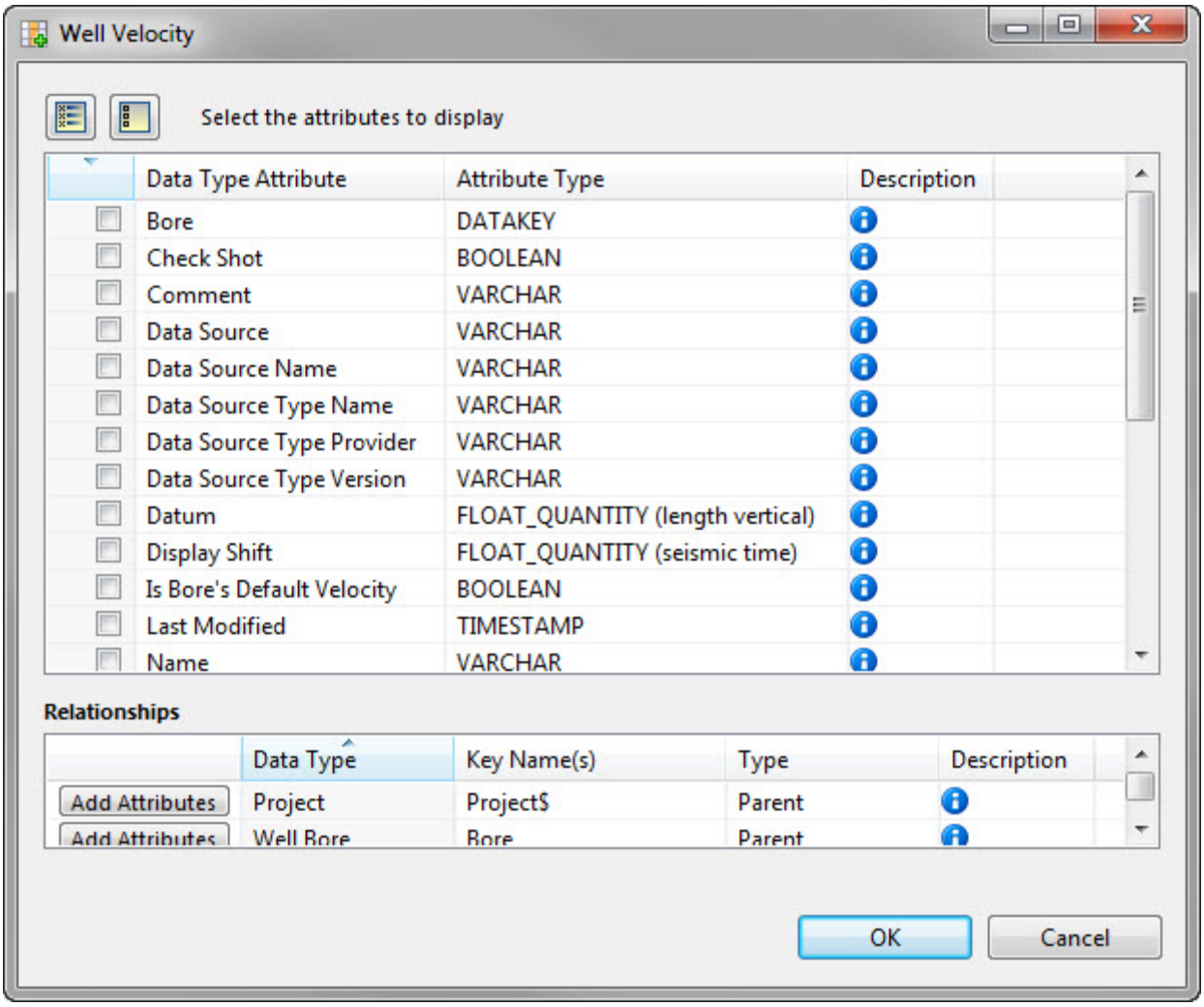
attribute. Attribute specific format settings will override any display format preferences set in your OpenSpirit Desktop preference settings.

The order that attributes marked for display will appear in tools using the model view can be set by clicking on the ***Set Column Order*** icon in the tab's tool bar. This will open the Set column ordering window which shows all of the attributes selected for display. Attributes can be reordered by selecting one or more attributes to be moved and clicking on the up or down arrow icons. This will move the selected attributes up or down one row for each icon click. The order that the attributes appear top to bottom in the list will correspond to the attribute column ordering left to right in the tools using the model view.




Clicking the ***Ok*** button accepts the reordering and dismisses the window. The rows selected for display in the ***Select Attributes*** tab will then be reordered to match the new ordering.

Attributes from related data types can be added to the attribute list by clicking on the ***Add Attributes*** button Add Attributes next to one of the related data types listed at the bottom of the ***Select Attributes*** tab. This will open an attribute selection window used to select the attributes from the related data type that you would like to add to the attribute list.




Select the attributes you want from the related data type and press the ***Ok*** button. The selected related attributes will be added to the attribute list after the last attribute that has the ***Available*** option selected. The added attributes will be selected as ***Available*** but the ***Displayed*** option will not be checked. Check the ***Displayed*** option if you would like the related attribute to be displayed by default.

The related data type's attribute selection window has a section at the bottom that shows data types that it is related to. You can click the ***Add Attributes*** button Add Attributes next to one of its related data types to continue following relationships adding additional attributes.

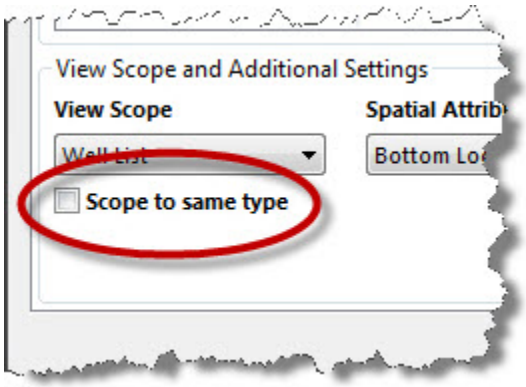
Adding attributes from related data types results in join queries. The more related data types you join in the longer the query execution time will be in tools using the model view, such as the Data Selector.

## Apply Query Filter tab

The ***Apply Query Filter*** tab is used to add constraints on the data rows that are shown in tools using the model view. This tab functions almost exactly like the ***Query Filter*** window

in the OpenSpirit Data Selector. See the ***Setting Query Filters*** section of the Data Selector help guide for an explanation of how to construct a query filter.

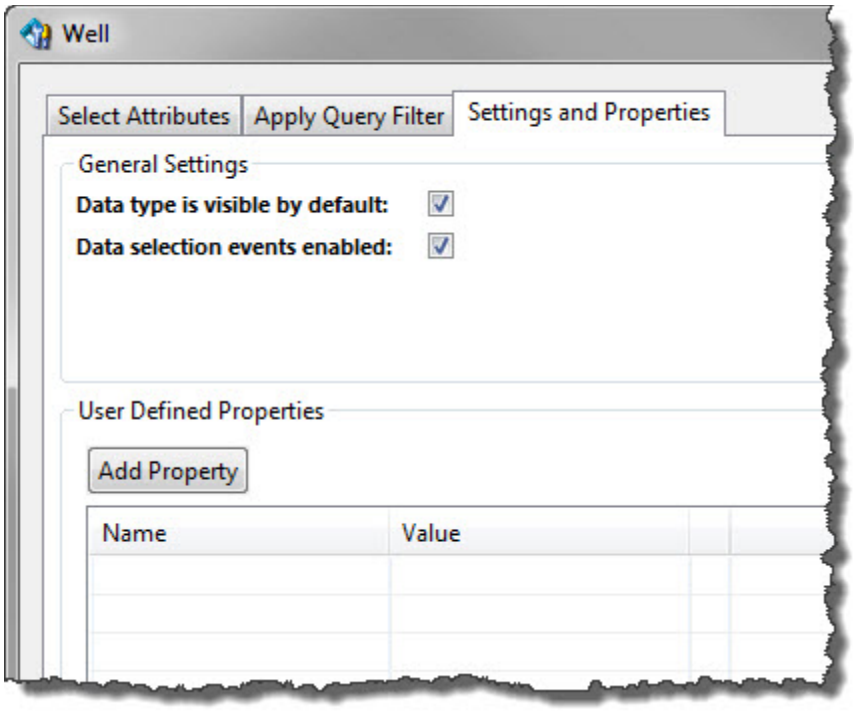
The only significant difference between the Model View Manager's Apply Query Filter tab and the Data Selector's Query Filter window is the ***Scope to same type*** option at the bottom right of the tab.




This option is typically used to construct a data type that is intended to serve as a details tab. Checking this option will constrain the data type so its view scope can only be set to another data type derived from the same data model data type. This feature was used to create the ***Well Details*** and ***Log Details*** data types in the OpenSpirit default Data Selector model view.

## Settings and Properties tab

There is rarely a need to use the Settings and Properties tab. The ***Data type is visible by default*** option is redundant to the option in the ***Visible*** column on the model view section of the Model View Manager main window. The ***Data selection events enabled*** option is used to prevent tools using the model view, such as the OpenSpirit Data Selector, from permitting data selection events to be sent for selected rows of the data type. This is typically used to avoid user confusion when it is known that no applications exist that are interested in listening for data selection events for that data type.




The ***User Defined Properties*** section of this tab is used to add properties that can be used to control special handling in tools using the model view, such as the Scan Job Manager.

Any user defined data type or attribute properties that appear in model views included with the OpenSpirit runtime or model views that are installed by other OpenSpirit applications such as the OpenSpirit Scan Utility or the OpenSpirit Copy Manager should not be deleted or modified unless explicitly instructed to do so by OpenSpirit support.

# Glossary

## A

**admin mode:** The OpenSpirit Desktop tools run with elevated privileges when the desktop is in admin mode. The OpenSpirit Desktop is placed in admin mode by running it from the OpenSpirit administrator account, or by using the admin mode toggle button in the Administrator tool bar.

**attribute:** A property of a data type. Attributes are referred to as 'columns' in relational database terminology.

## C

**computing platform:** A computer operating system such as Microsoft Windows 7, Red Hat Enterprise 5, Solaris 10, etcetera.

## D

**data connector:** Software component used to connect the OpenSpirit framework to a source of data. A data source could be represented by a relational database, by a collection of file based data, by a web service, or some combination of these data storage and data access technologies.

**data key:** An object that identifies a specific data item in a specific data store. Data keys can be represented as XML.

**data selection events:** A broadcast event that sends the identity of one or more data items to all applications being run by an OpenSpirit user that are listening for data selection events.

**Data Selector:** OpenSpirit Desktop tool used to browse data residing in OpenSpirit enabled data stores.

**data type:** A type of data, such as well, seismic survey, well log, lease, etc.. Data types are also commonly referred to as 'entities', 'tables', or 'business objects'.

**data type view:** A term used to refer to the tabs in the OpenSpirit Data Selector that display rows of data of a given data type (e.g. wells, seismic volumes. etc.).

**drag and drop:** The action of selecting one or more items and using the computer mouse to drag them onto another window or application.

## E

**EPSG:** The now-defunct European Petroleum Survey Group (EPSG). The EPSG was absorbed into the Surveying & Positioning Committee of the International Association of Oil & Gas Producers (OGP) in 2005.

## G

**geoscience data repositories:** A repository of geoscience data, often referred to by OpenSpirit as a data source. A data repository or data source can be represented by a relational database, by a collection of file based data, by a web service, or some combination of these data storage and data access technologies. Examples are Schlumberger's GeoFrame and Finder databases, Halliburton's OpenWorks database, IHS' Kingdom and Petra databases.

## H

**home directory:** Computer file system home directory. The location of your home directories vary by computer operating system and by company.

## M

**Model View:** A custom view of a native data model or the OpenSpirit data model. A Model View can present a subset of the data model's data types and attributes. A Model View can also change the names of data types and attributes and can join related data types to create a new data type.

## N

**native data model:** The logical data model defined by OpenSpirit enabled data sources. For example, the "OpenWorks 2003" logical data model is a native data model. The "PPDM 3.7" database schema is a native data model.

## O

**OpenSpirit data model:** A data model created by OpenSpirit Corporation. The OpenSpirit data model is a canonical data model that is representative of the data models commonly used in the E&P disciplines addressed by OpenSpirit.

**operating system process id:** The Microsoft Windows, Linux, and Solaris computer operating systems all assign a unique integer id number to all processes that are running on the computer. The id numbers are unique among the processes currently running on the computer. The operating system process id is commonly referred to using the acronym PID which stands for process id.

## P

**process starter:** A background process created by the OpenSpirit framework that is used to create data connector processes. A process starter process could be considered to be a service process or a daemon process.