HPCC Systems®

Using ECL Watch

Boca Raton Documentation Team

LexisNexis® Risk Solutions

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2015 Version 5.4.2-1

Introducing ECL Watch

Introduction

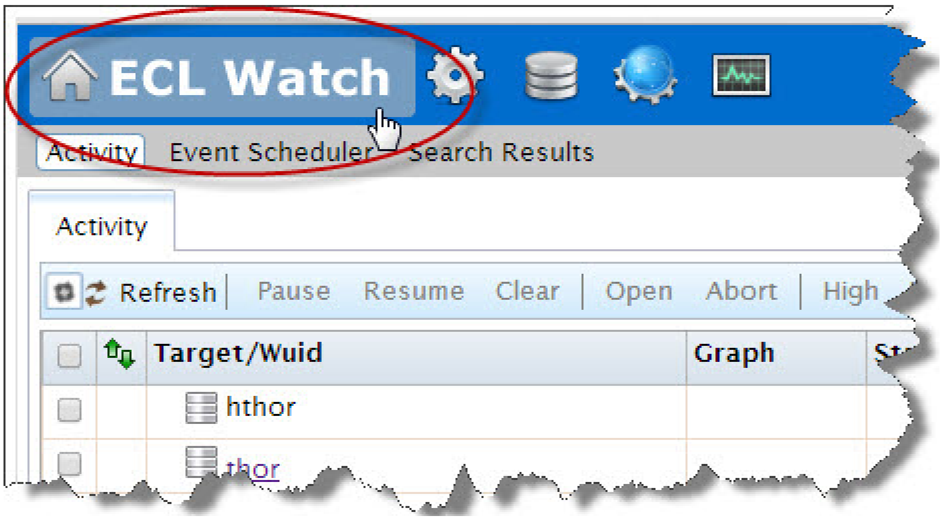
ECL Watch is a service that runs on the Enterprise Services Platform (ESP), a middleware component on the HPCC Platform.

ECL Watch provides an interface to the HPCC system and allows you to view information and interrogate nodes to confirm all expected processes are running. It is a plug-in that is useful for Systems Administrators to check processes, examine topology, and view logs. It is useful to ECL Programmers to monitor the status of jobs and files, and other pertinent information. This provides a simple view into the system and a means to perform Workunit and data files maintenance.

ECL Watch Home

Click on the **ECL Watch home** link in the navigation bar at the top of the ECL Watch page to find the **Activity** and **Scheduler** links. These links provide access to the respective pages you need to be able to perform the related tasks.

Figure 1. HPCC Platform link



Activity

The Activity page displays activity on all clusters in the environment. The Activity page provides access to Cluster Job Queue administration tasks such as: monitoring progress, setting priority, moving a job up or down in the queue, pausing a job, aborting a job, and pausing or resuming a queue.

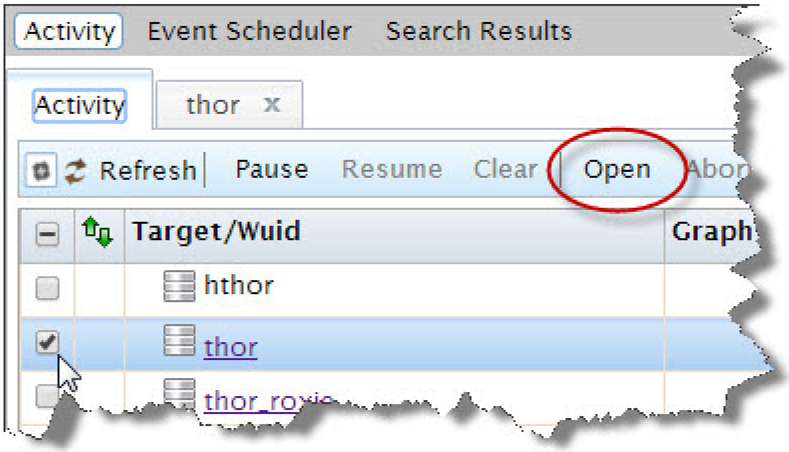
When ECL Watch starts it defaults to the Activity page. To access the Activity page from any other page in ECL Watch click on the **ECL Watch** image at the top of any page, as indicated the preceding image.

Activity related tasks can also be initiated from the workunit tab for the specific job in question.

Cluster Information

You can access more information about your clusters from the main Activity page. Select the target cluster from the main **Activity** tab, by checking the box next to it.

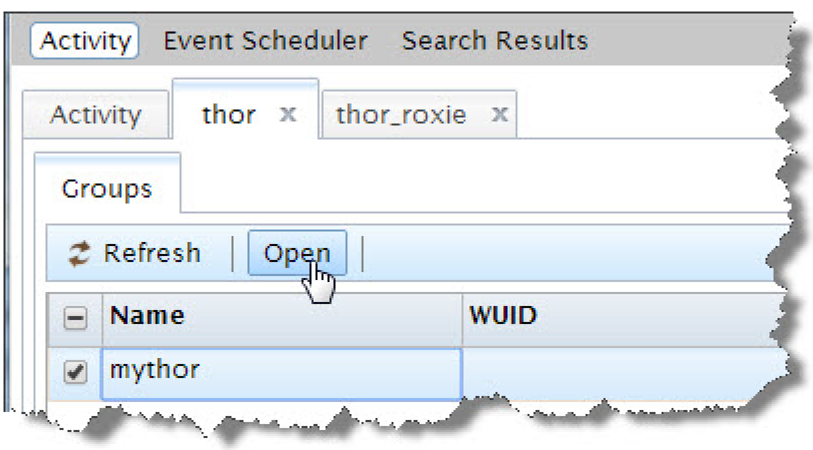
Figure 2. Open Cluster



This enables the **Open** action button. Press the Open action button to open a new tab for that cluster. You can also double-click on the target cluster.

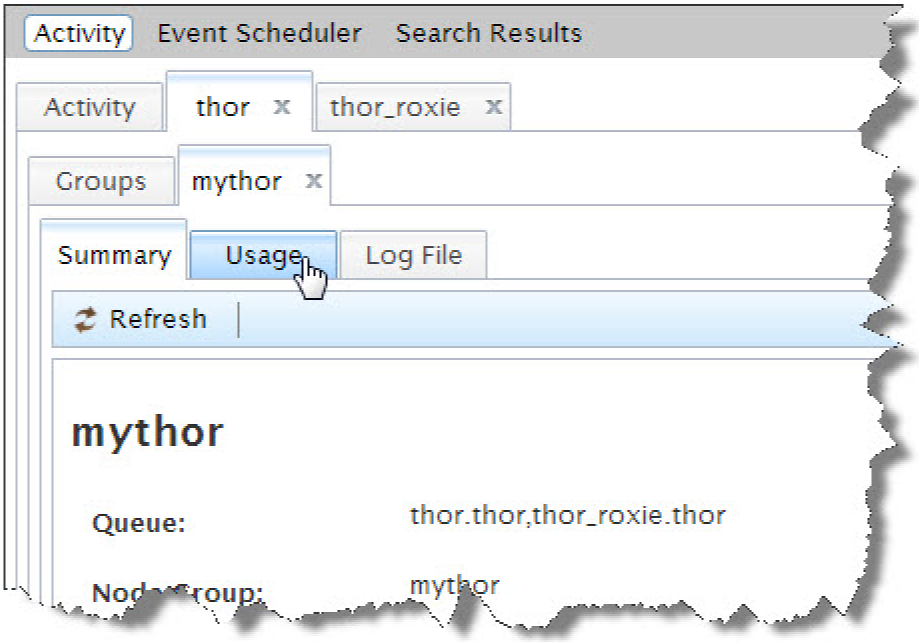
The cluster tab displays the groups on that cluster. Double-click on a group, or check the box next to the cluster group, and press the open button.

Figure 3. Open Cluster Groups



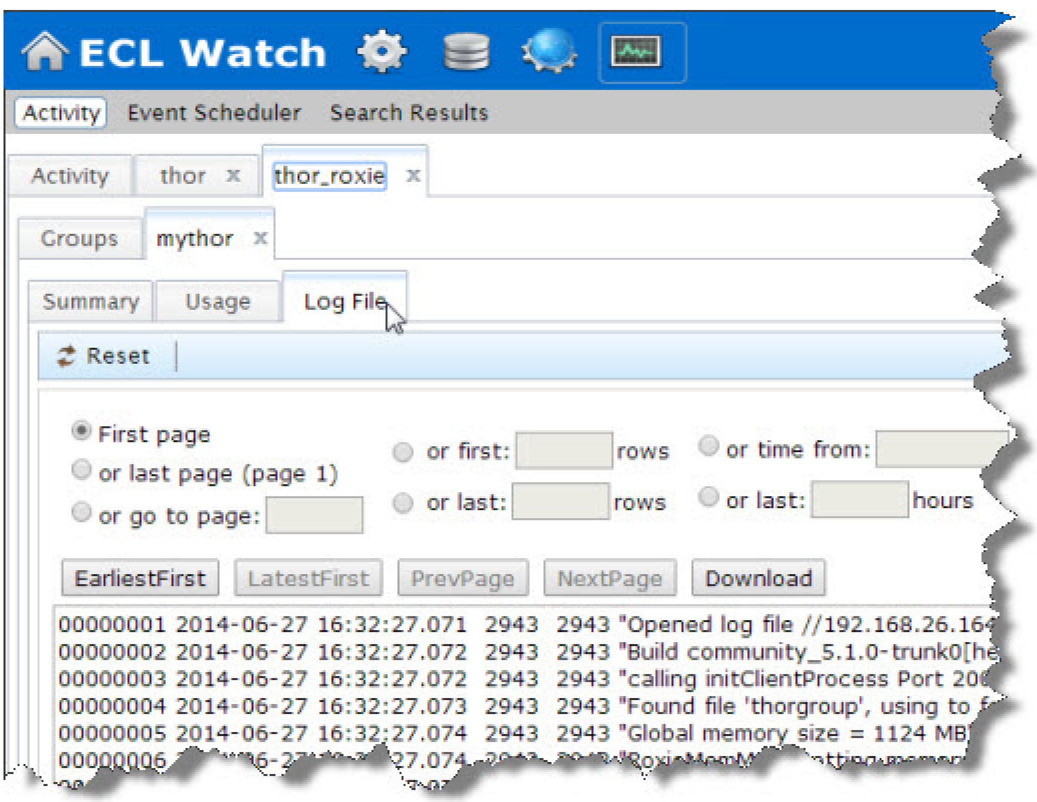
Open up the cluster group tab (for example, mythor), and select the group from the Groups tab to see the activity information on that cluster group.

Figure 4. Cluster Activity tabs



On that cluster group tab, you can access the information about that cluster. There are three tabs on that cluster group tab. The **Summary** tab provides a snapshot of that group. The **Usage** tab provides access to a usage graph, and other information. The **Log File** tab is where you can view that cluster group's log.

Figure 5. Cluster Log File



Global Search

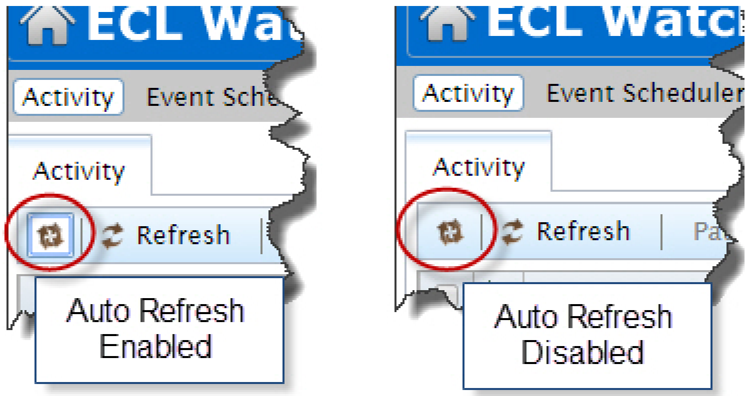
On the navigation bar at the top of the ECL Watch page, about half way across the page is the search box.

Figure 6. Search box

You can search for workunits, users, files, or even ECL, using the search box. The search box supports wild cards.

Auto Refresh

Figure 7. Auto Refresh



The **Activity** page displays active ECL or DFU workunits either running or in the queue on your cluster. To refresh the list, press the **Refresh** button. Auto Refresh shows the list in real-time, but this feature is disabled by default.

To enable Auto Refresh, toggle the Auto Refresh button.

In an environment with a large number of active users, Auto Refresh could impact performance of your ESP server.

ECL Event Scheduler

The Event Scheduler page provides an interface to the ECL Scheduler. The ECL Scheduler interface allows you to see a list of scheduled workunits. It can also trigger an event. An Event is a case-insensitive string constant naming the event to trap.

ECL Scheduling provides a means of automating processes within ECL code or to chain processes together to work in sequence. For example, you can write ECL code that watches a landing zone for the arrival of a file, and when it arrives, sprays it to Thor, processes it, builds an index, and then adds it to a superfile.

ECL Scheduling is event-based. The ECL Scheduler monitors a Schedule list containing registered Workunits and Events and executes any Workunits associated with an Event when that Event is triggered.

Your ECL Code can execute when an Event is triggered, or can trigger an Event. If you submit code containing a **WHEN** clause, the Event and Workunit registers in the Schedule list. When that Event triggers, the Workunit compiles and executes. When the Workunit completes, ECL Scheduler removes it from the Schedule list.

For example, if you submit a Workunit using **WHEN('Event1','MyEvent', COUNT(2))** in the appropriate place, it will execute twice (the value of **COUNT**) before the ECL Scheduler removes it from the Schedule list and the Workunit is marked as completed.

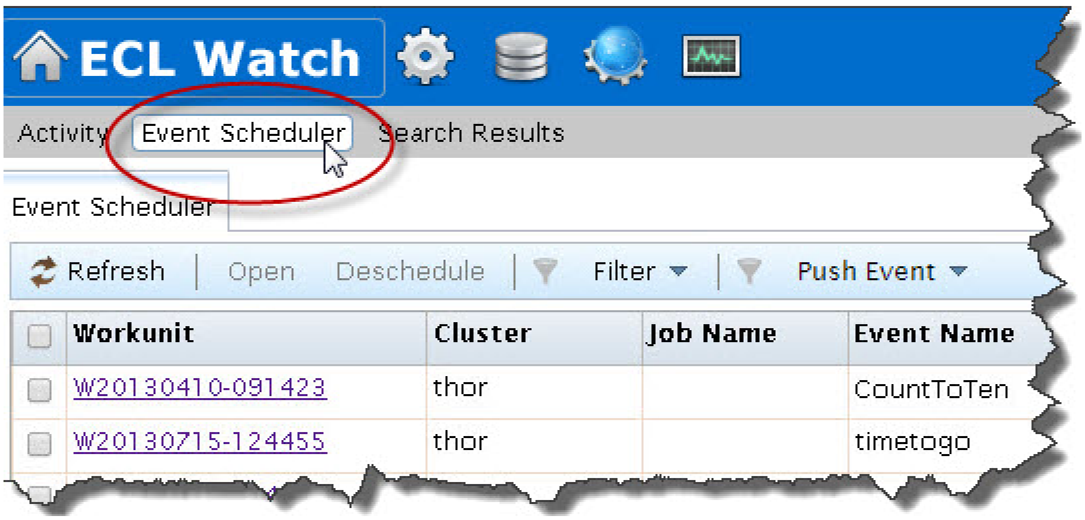
For more details about both **WHEN** or **NOTIFY** or any ECL Language functions or keywords please see the ECL Language reference. A copy of which can be found online at http://hpccsystems.com/download/docs/learning-ecl on the HPCC Systems® web site.

Interface in ECL Watch

To access the ECL Scheduler interface in ECL Watch, click on the **Event Scheduler** link in the navigation sub-menu. The Scheduler interface displays and you can see the scheduled workunits, if any.

The list of scheduled workunits has two significant columns, the **EventName** and the **EventText**.

Figure 8. ECL Scheduler Interface



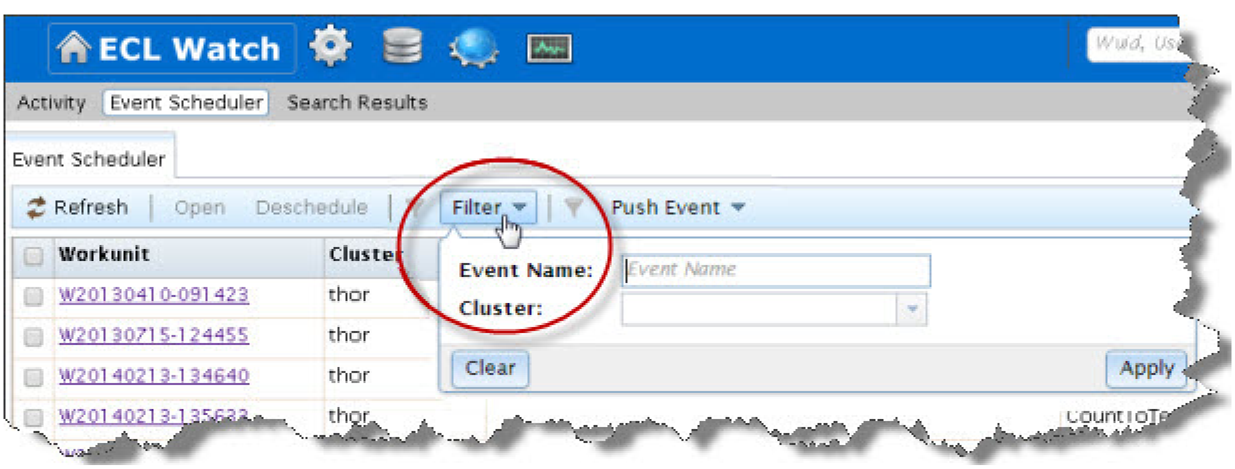
The EventName is a created when scheduling a workunit. The EventText is an accompanying sub event.

You can trigger an event by entering the EventName and Event Text in the entry boxes and then pressing the **PushEvent** button. This is the same as triggering an event using NOTIFY.

Scheduler Workunit List

You can search scheduled workunits by cluster or event name. To filter by cluster or event name, click on the **Filter** Action button. The Filter sub-menu displays. Fill in values for the filter criteria, Eventname or Cluster, then press the **Apply** button.

Figure 9. Workunits in the Scheduler Interface



You can sort the workunits by clicking on the column header.

To view the workunit details, click on the workunit ID (WUID) link for the workunit.

Pushing Events

The Event Scheduler allow you to trigger or "push" an event to help manage and test your scheduled jobs.

1. Press the **PushEvent** action button.

   The Push Event dialog opens.

2. Enter the EventName:

   The EventName is a case-insensitive string constant naming the event to trap.

   See Also: EVENT

3. Enter the EventText:

   The EventText is case-insensitive string constant naming the specific type of event to trap. It may contain * and ? to wildcard-match.

   See Also: EVENT

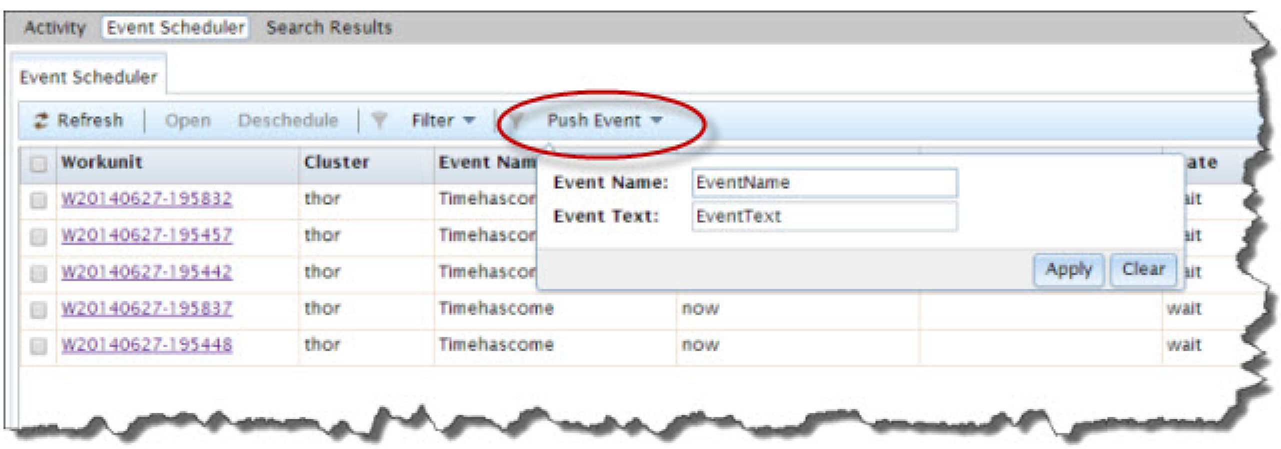
4. Press the **Apply** button

   This is the equivalent of

   ```
   NOTIFY(EVENT(EventName,EventText));
   ```

   See Also: NOTIFY, EVENT

Figure 10. PushEvent



ECL Workunits

ECL Watch provides information about ECL jobs and workunits. Links to pages that contain information about ECL workunits appear in the navigation bar along top of the ECL Watch page. There you will find links to ECL Workunits, simply labelled as Workunits, and you will also find the link to the ECL Playground. Not only can you find information about workunits there, but you can perform operations on workunits.

ECL Workunits Page

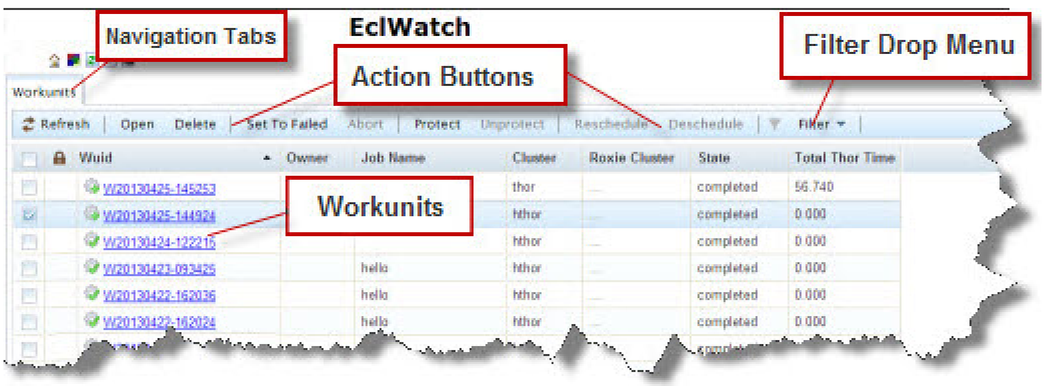
The ECL Workunits page contains a list of all the ECL workunits on your system. It provides access to more details about the workunits. You can also perform actions on the selected workunit using the Workunit Action buttons.

To access the workunits page click on the **ECL** icon, then click the **Workunits** link from the navigation sub-menu.

Figure 11. ECL Files

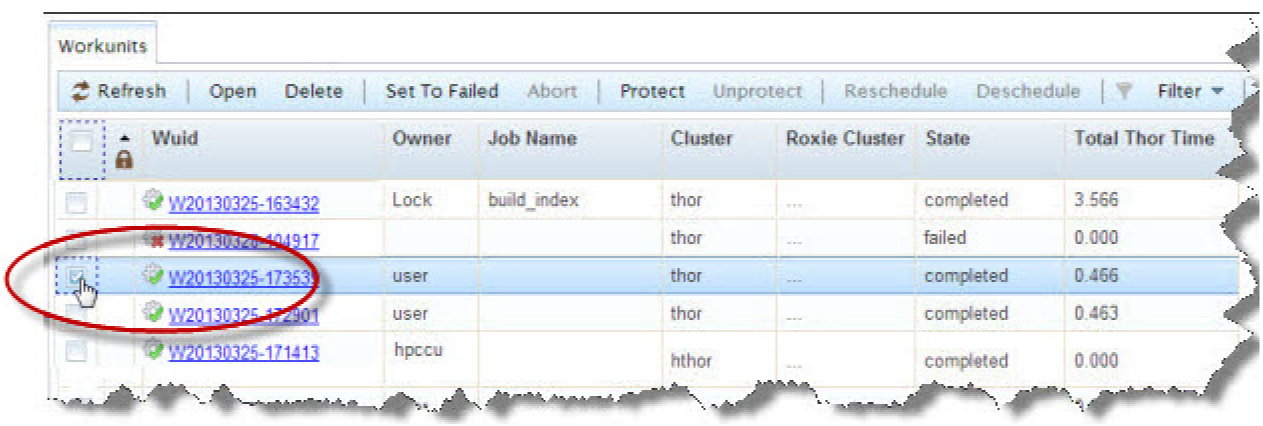
The page displays the ECL workunits on your system. Choose the **Workunits** Navigation tab to display the workunits.

Figure 12. ECL Watch Browse Workunits



To further examine a workunit or to perform some action on it, you must select it. You can select the workunit by checking the check box. You can also open a work unit by double-clicking on the workunit.

Figure 13. Select ECL Workunit



When you select a workunit, the Action buttons are enabled. You can also use the Context Menu when you right-click on a workunit to perform an action on it.

You can select multiple workunits by checking the check box next to each workunit. You can also click-and-drag over the workunit check boxes to select multiple workunits. When you select multiple workunits, each workunit will open it's own tab.

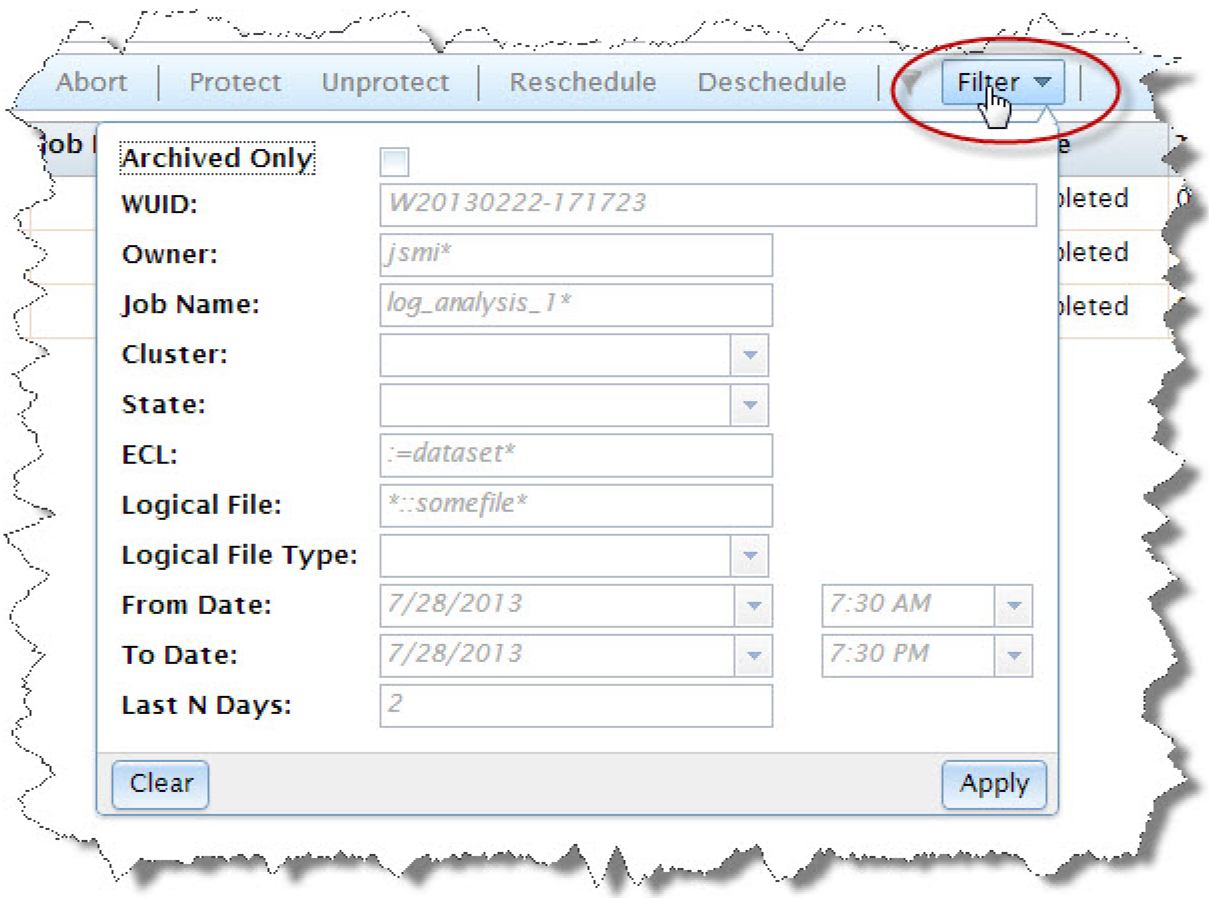
The Action buttons allow you to perform actions on the selected workunits.

- Press the **Open** button to open the selected workunit(s).
- Press the **Delete** button to delete selected workunit(s).
- Press the **Set to Failed** button to set the state of the selected workunit(s) to failed.
- Press the **Abort** button to stop a selected workunit that is running and abort the job.
- Press the **Protect** button to lock the selected workunit(s). This prevents it from archiving by the Sasha server.
- Press the **Unprotect** button to unlock the selected locked workunit(s).
- Press the **Reschedule** button to change a selected scheduled workunit.
- Press the **Deschedule** button to stop a selected scheduled workunit from running.
- Press the **Filter** button to display additional filter options. These options filter the displayed list of workunits.

Filter Options

You can filter the workunits displayed on the Workunits tab by clicking on the **Filter** Action button. The Filter sub-menu displays. Fill in values to specify the filter criteria, then press the **Apply** button.

Figure 14. The Filter sub-menu



The workunit filter options allow you to filter workunits using the specified criteria. Workunits can be filtered by:

- **Archived Only** - when checked, this filter will search only archived workunits.
- **WUID** - filter workunits for specific workunit ID (wuid).
- **Owner** - filter workunits for specific owners. Supports wildcards.
- **Job Name** - filter workunits by job name. Supports wildcards.
- **Cluster** - filter workunits by cluster. Select the cluster from the drop list.
- **State** - filter workunits by State. Select the state from the drop list.
- **ECL** - filter workunits by specific ECL. For example, *:=dataset*. Supports wildcards.
- **Logical File** - filter workunits by Logical File name, or some portion of it. Supports wildcards.
- **Logical File Type** - filter workunits by Logical File type. Select the Logical file type from the drop list.

- **From date** - filter workunits from a specific date and/or time. Select the date and time from the drop list.
- **To date** - filter workunits up to a specific date and/or time. Select the date and time from the drop list.
- **Last *N* Days** - filter workunits for a certain number (N) of days. Enter a number in this field.

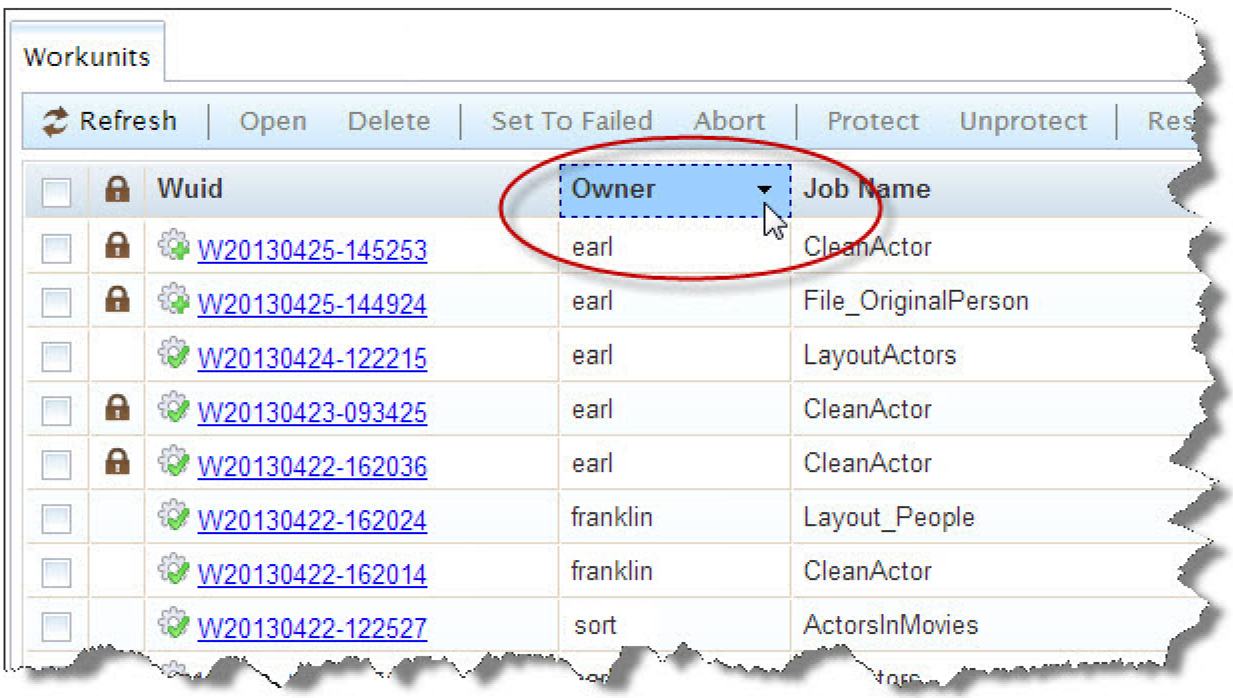
Some filter fields support wild card filtering. Wildcards can substitute for one or more characters when filtering data in the filter. The wild card characters are *, and ?. Where * can substituted for all possible characters, and a ? can be substituted for any single character.

Note: Filter criteria are not case sensitive.

Sorting Columns

You can sort a column by clicking on the column heading. Click once for ascending, click again to toggle to descending. The direction of the arrow indicates the sort order.

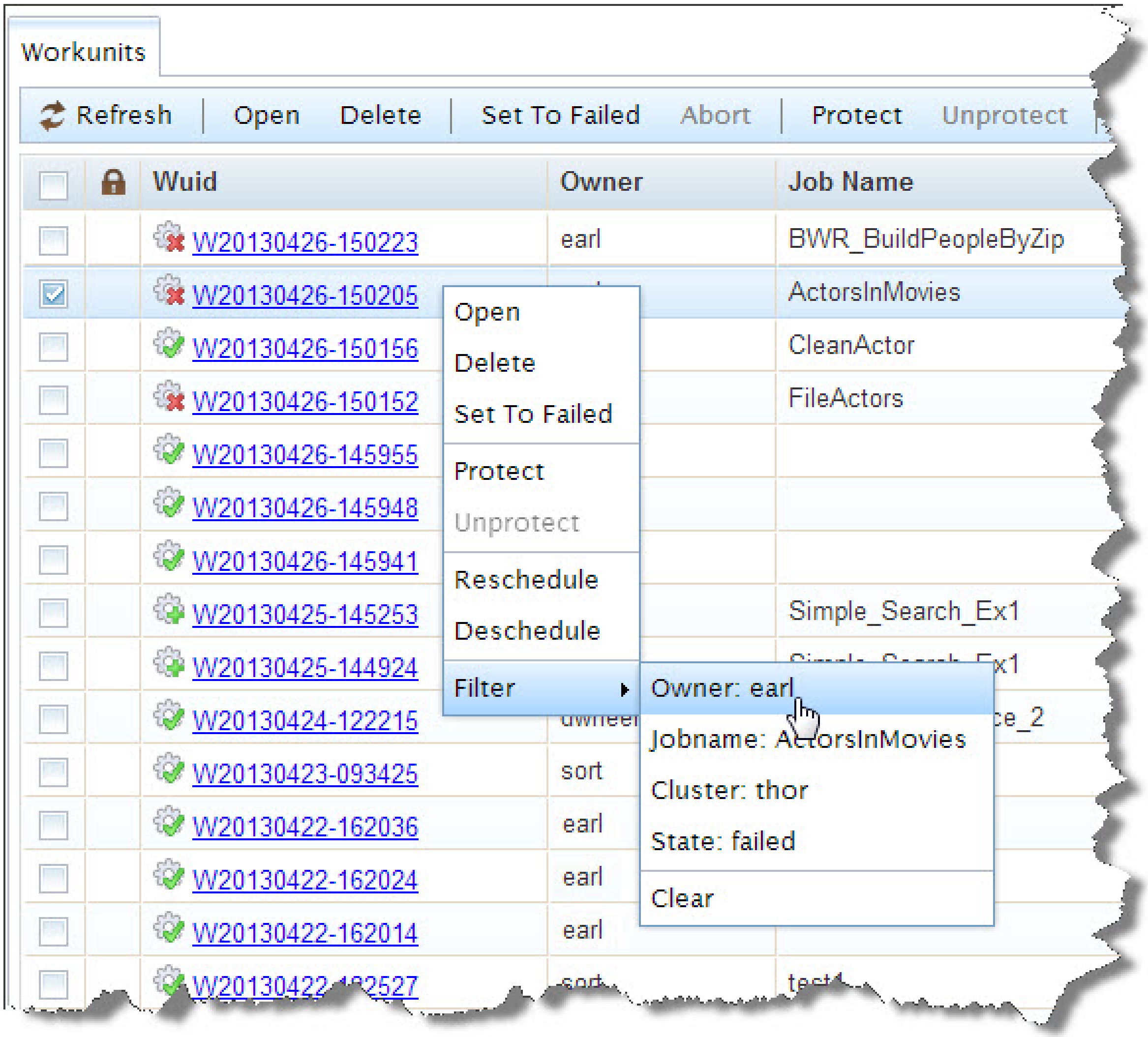
Figure 15. Sort by column



Context Menu

You can right-click on a workunit to get a context menu of actions, including filter options. These are the same set of actions that you could perform from the Action buttons.

Figure 16. Context menu

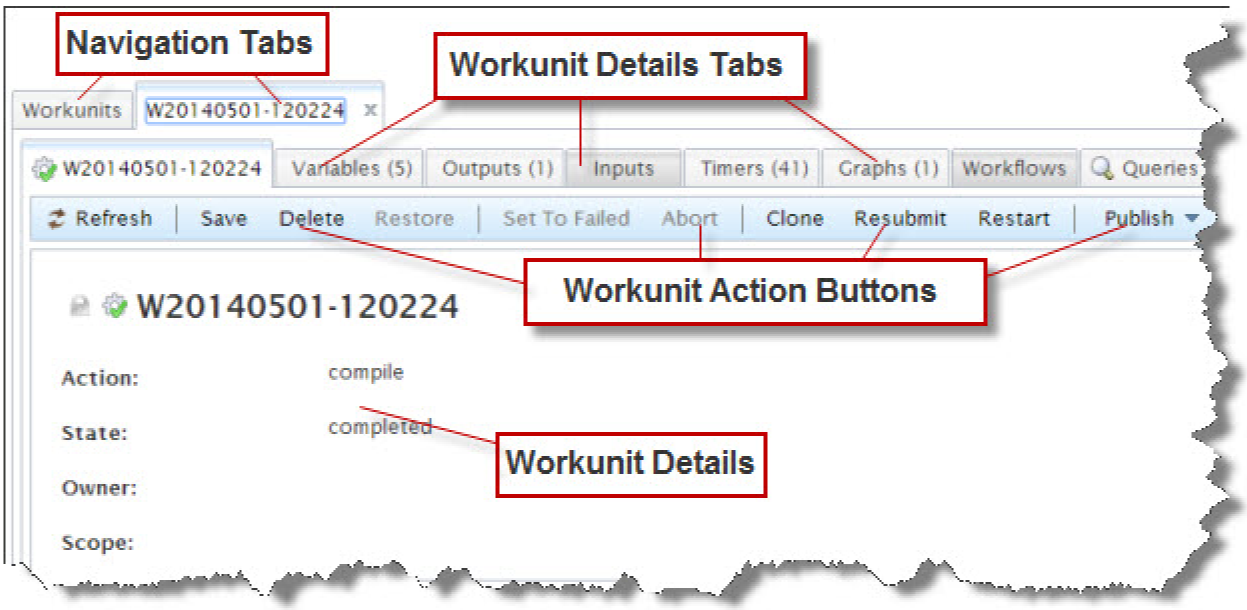


Workunit Details

The Workunit Details page provides more information about a workunit. You can see more specific information about the selected workunit by selecting the various Workunit Details tabs.

You can also perform certain actions on the selected workunit using the Workunit Action buttons.

Figure 17. Workunit Details



Workunit details Action Buttons allow you to perform an action on the selected workunit.

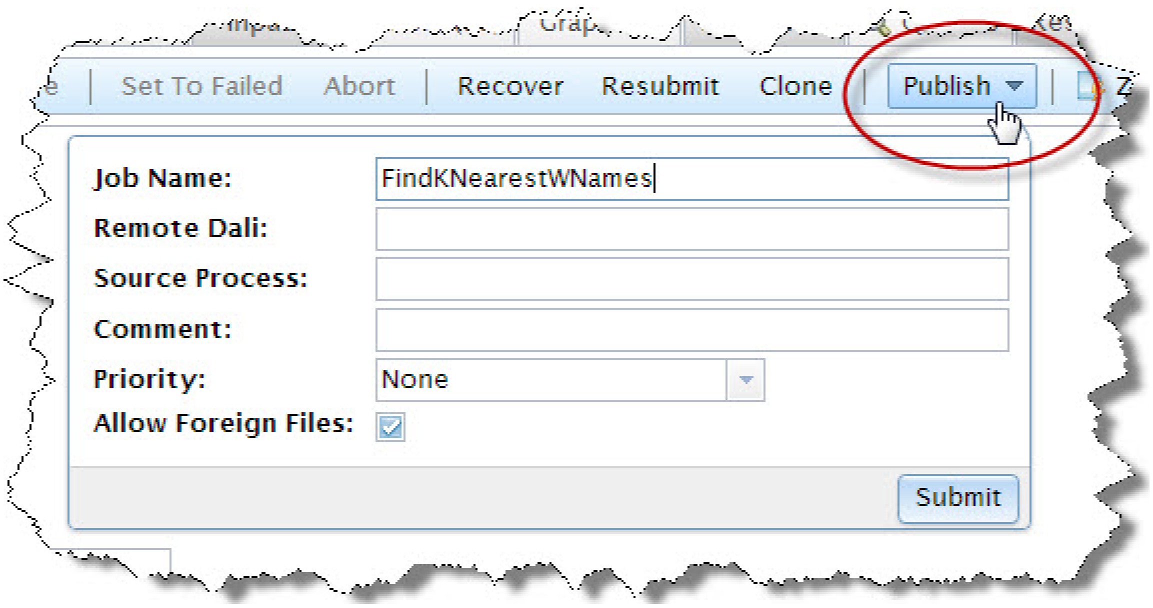
Using the Workunit Action Buttons you can:

- Press the **Refresh** button to refresh the workunit details.
- Press the **Save** button to save any changes to the workunit.
- Press the **Delete** button to delete the workunit.
- Press the **Restore** button to restore a workunit that has been archived by Sasha.
- Press the **Set To Failed** button to change the workunit state to failed.
- Press the **Abort** button to stop a running workunit and abort the job.
- Press the **Recover** button to restart the workunit.
- Press the **Resubmit** button to resubmit the job.
- Press the **Clone** button to clone the workunit.
- Press the **Publish** button to publish the workunit.
- Press the **Z.A.P.** button to package up system information for analysis. This is useful for bug reporting or troubleshooting.

Publish Action Button

Click on the Publish action button to publish a query.

Figure 18. Publish Menu



Fill in the values for the Job Name, the Remote Dali, Source Process, Priority (optional), and you can add a comment. After you fill in the required values you can press the **Submit** button to submit your query.

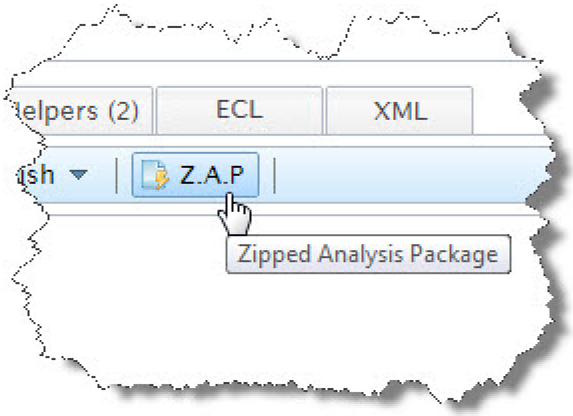
Options for ECL Publish

- **Job Name:** The name of the job to publish. Auto-populated if you choose to publish from the workunit details page.
- **Remote Dali:** The IP or hostname of the DALI to be used to resolve remote files. (optional)
- **Source Process:** Process cluster from which to copy files. (optional)
- **Comment:** If desired, add a comment. The comment displays on the published queries details page.
- **Priority:** Sets the priority for the query. Values can be LOW, HIGH, SLA, or NONE. NONE will clear current setting.
- **Allow Foreign Files:** Check the box to allow the use of foreign files in a Roxie query. If a Roxie query references foreign files and this is not enabled, publish will fail.

Z.A.P. Utility

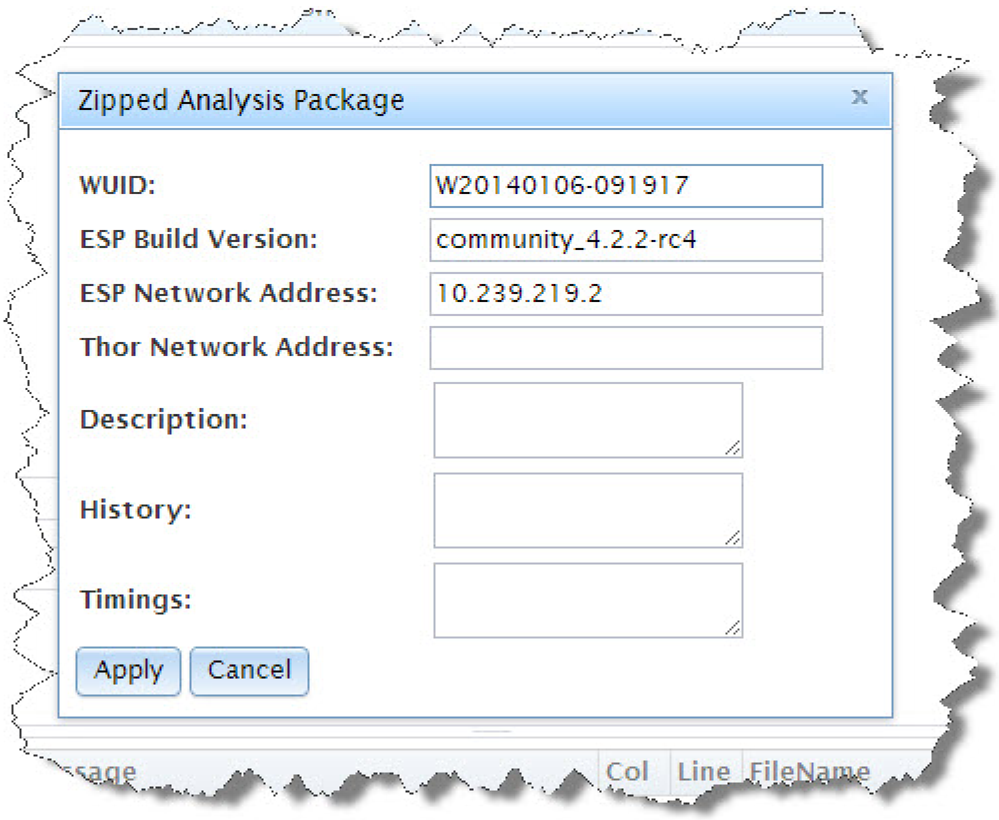
The Zipped Analysis Package (Z.A.P.) button is a utility for collecting system information and encapsulating it into a shareable package. It is a useful tool for reporting errors, inconsistencies, or other unexpected behavior. When there is such an occurrence, this utility packages up information to send for further analysis.

Figure 19. Z.A.P. Button



To use the Z.A.P. utility, press the Z.A.P. button on the workunit details page from the appropriate workunit. The button opens the Zipped Analysis Package dialog.

Figure 20. The Zipped Analysis Package Dialog



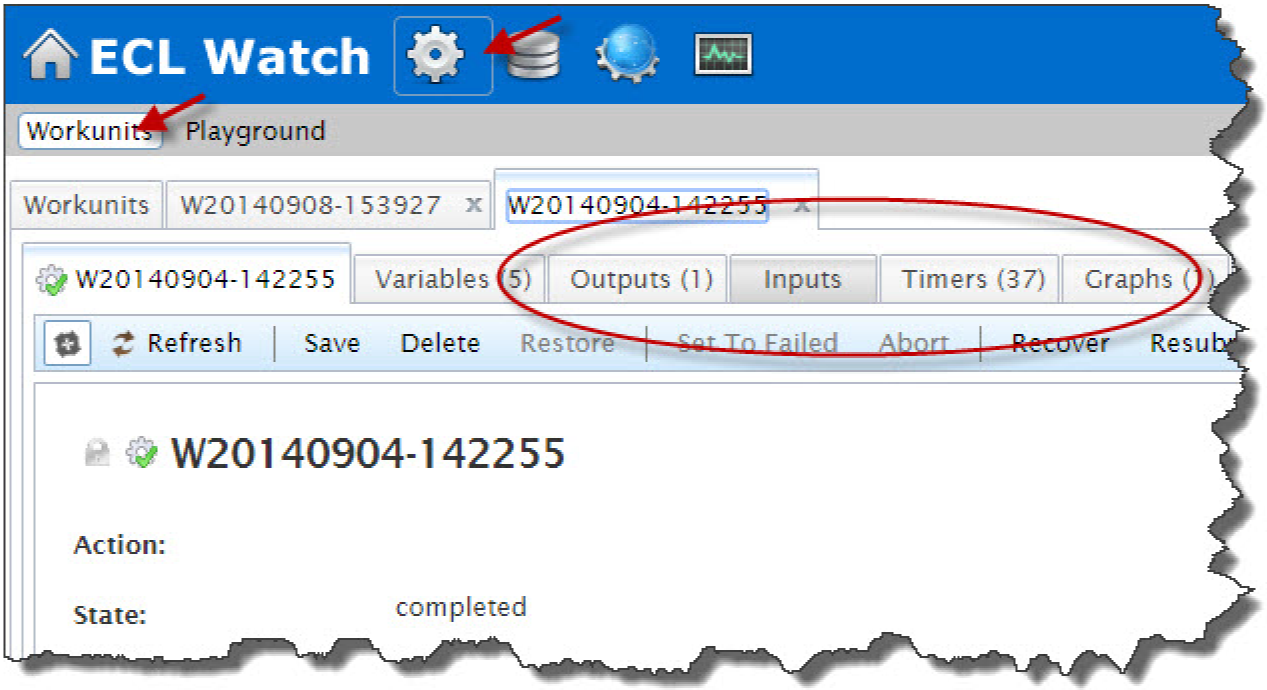
Fill in the corresponding values under Description, History, and Timings in the Z.A.P. dialog. Press the **Apply** button when finished. The Z.A.P. utililty generates a zip file with all the appropriate information for troubleshooting.

You can find the generated zip file in your browser's designated download directory. You can now send this file to the person handling your support request, or you can upload the file into the issue tracking system. Before distributing the file, verify that the file does not contain any sensitive data, such as personally identifiable information (PII).

Outputs tab

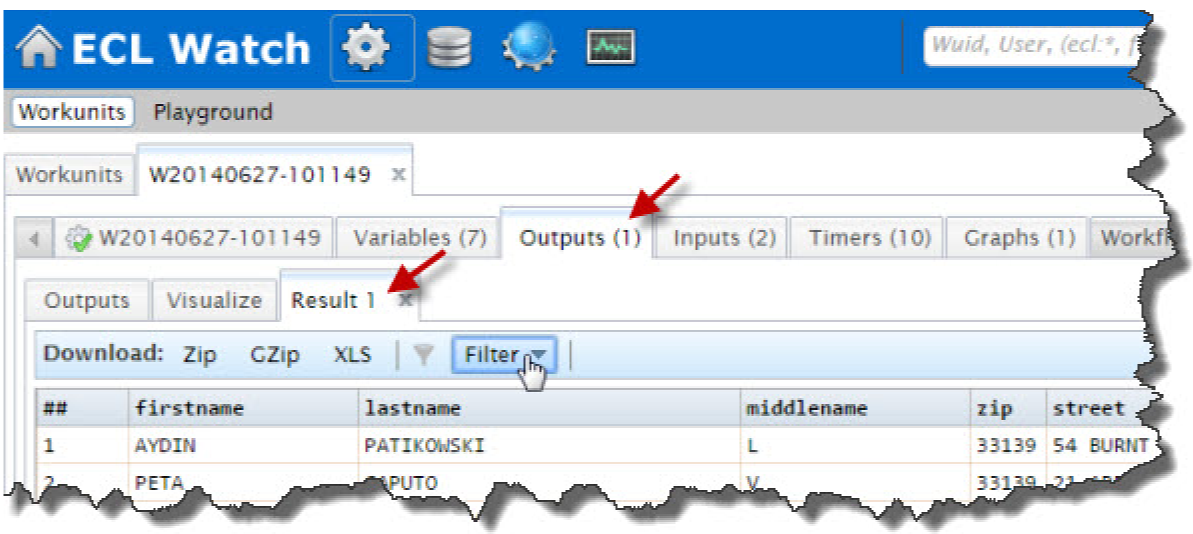
Click on the Outputs tab to see all results.

Figure 21. Outputs



Click on the **Result #** link to open a tab and display the results.

Figure 22. Results Tab



You can filter the result set. Press the **Filter** action button to further filter down the results.

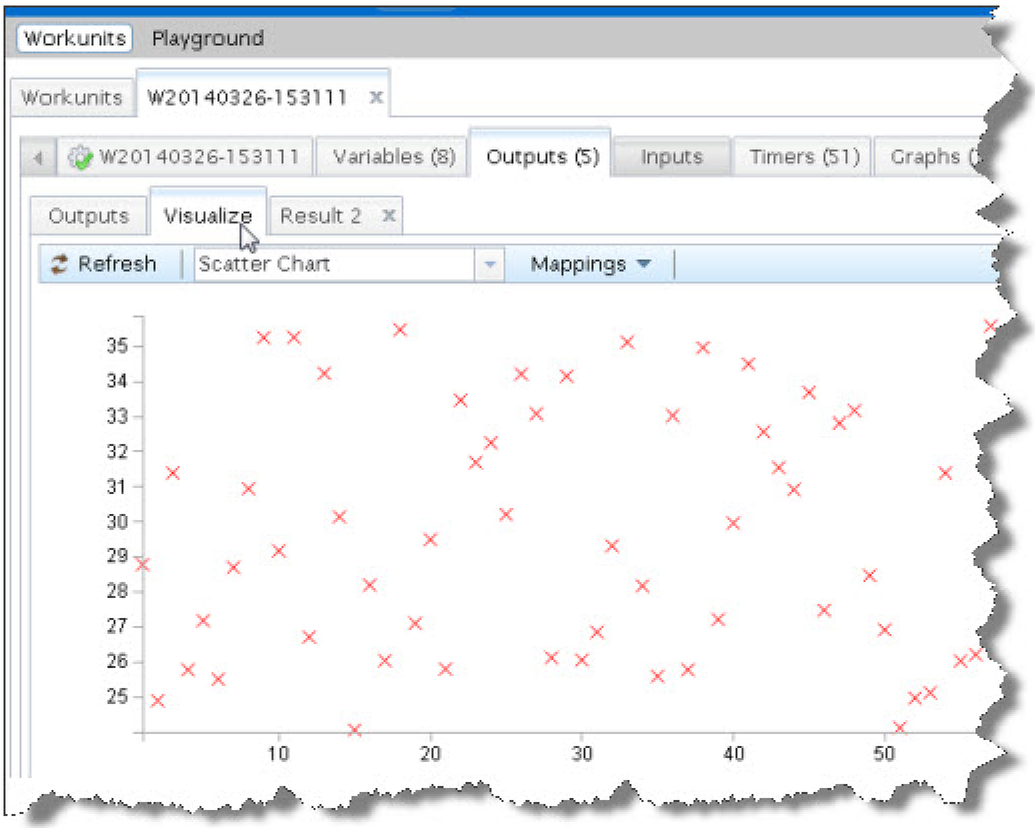
Press the **Download** action buttons to download the output files. The output files are available in 3 formats.

- **GZIP**
- **ZIP**
- **XLS:** Download the output in an Excel spreadsheet format.

Visualizations

You can see visual representations of select workunits. Visualizations are available from the workunit **Outputs** tab. The Visualize tab provides a number of chart types you can generate if you have included additional resources in your ECL code via the enhanced manifest mechanism (such as an index web page).

Figure 23. Visualization

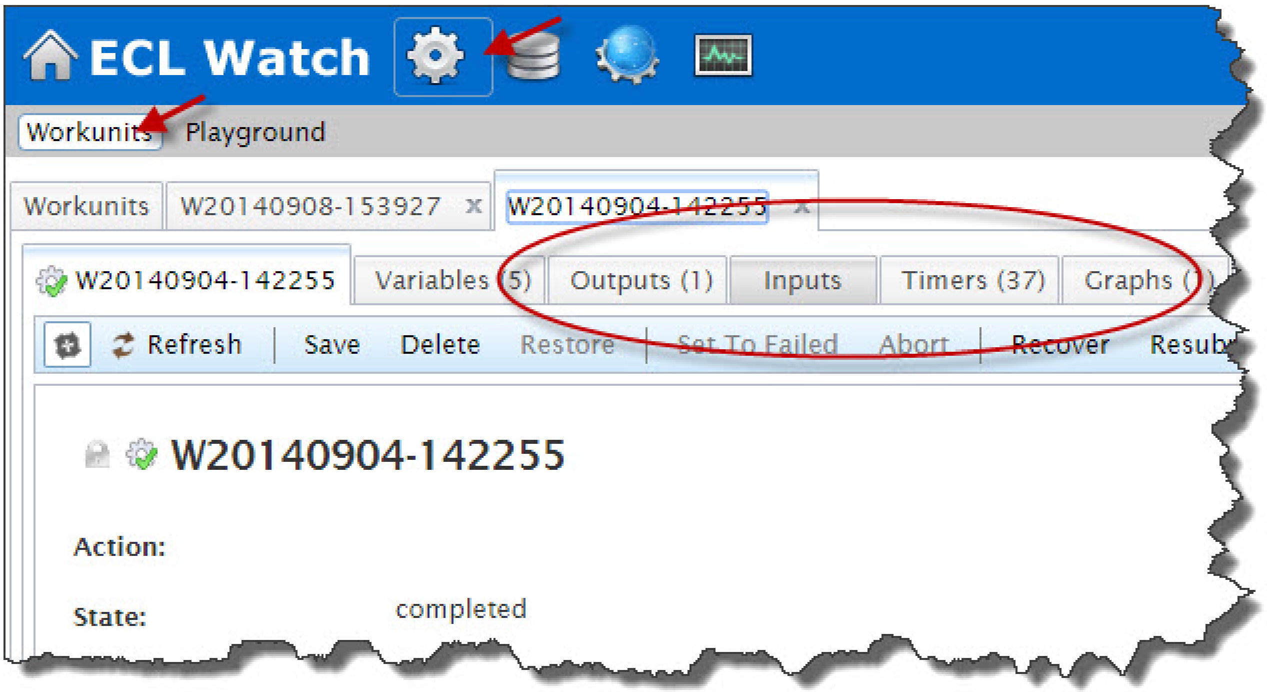


To access Visualizations, click on the Outputs tab from the selected workunit details page, then select the **Visualize** tab. You can view different visualization types by clicking on the drop list on the Visualize tab. Click on the **Mappings** drop menu, to change the parameters.

Inputs tab

Click on the **Inputs** tab to see the workunit's input files. The input files are the source files that make up the workunit.

Figure 24. Inputs



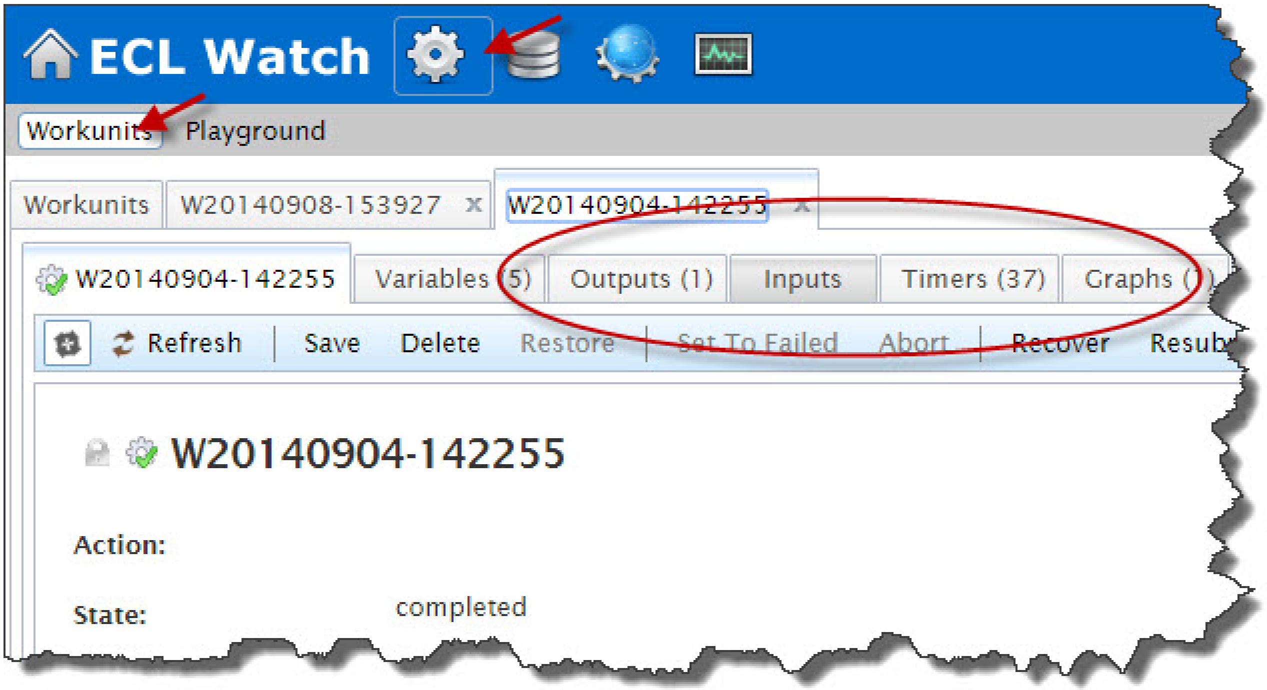
The input files are displayed as a link. You can double-click the link to open a tab for each input file. You can select more than one input file and press the open button.

The **Usage** header indicates how many times a file was used in the workunit.

Timers tab

Click on the **Timers** tab to see the workunit timings.

Figure 25. Timers

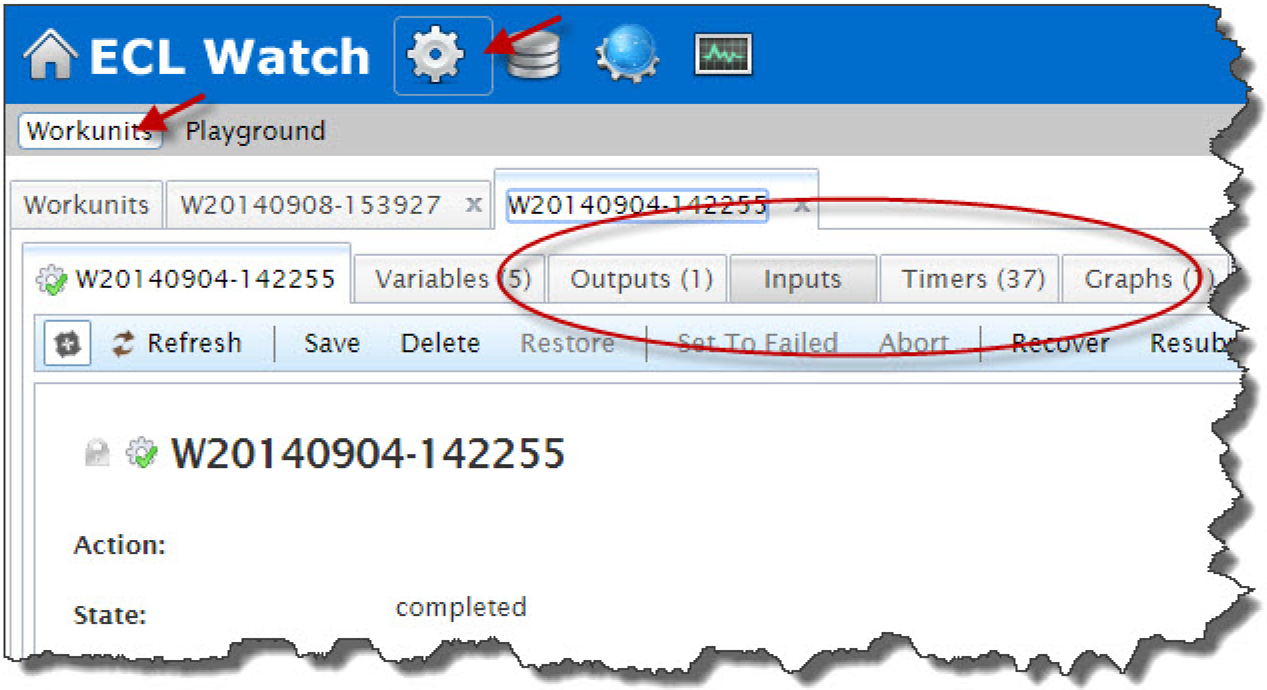


Timers depict everything that happened with the workunit and for how long. Timers include graphs which also provide more information as to the processing of the workunit. The graphical heat map indicates by a darker color where more time was needed, while the lighter the color indicates that portion took less time.

Graphs tab

Click on the **Graphs** tab to see the graphs produced by the workunit.

Figure 26. GRAPHS

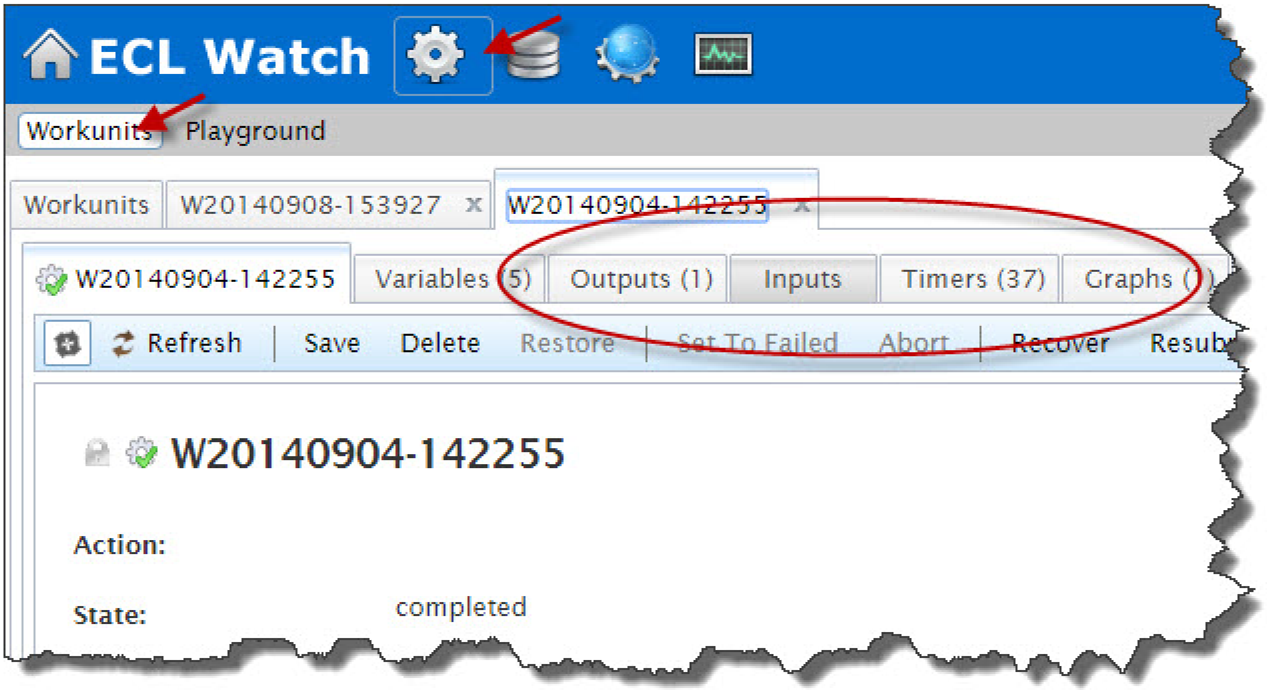


The Graphs tab shows a list of each graph and the heat map. Double click on the heat map to go to the corresponding portion of the graph.

Timers tab

Click on the **Timers** tab to see the workunit timings.

Figure 27. Timers



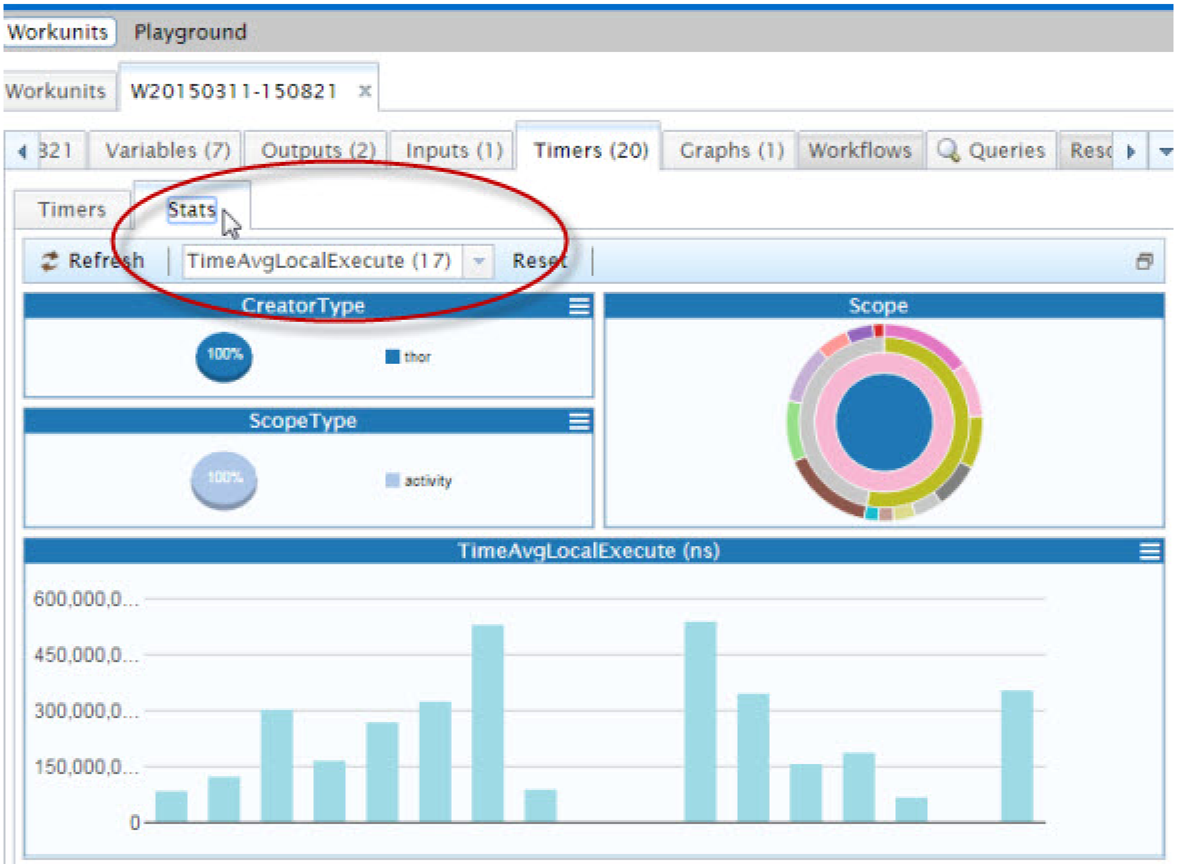
Timers depict everything that happened with the workunit and for how long. Timers include graphs which also provide more information as to the processing. The Heat map indicates by a darker color where more time was needed,while the lighter the color indicates that portion tool less time.

Usage: how many times a file was used in the work unit.

Stats

On the workunit Timers tab is another tab for Stats. The Stats tab is a visual representation of all the workunit timings.

Figure 28. Stats



Select the timer values from the drop list on the Stats tab to view the various charts and graphs.

Workflows tab

The workflows tab only exists if you have an attribute scheduled. There are multiple workflows when your code contains more than one WHEN statement.

Counts: How many "events" are scheduled to happen.

Remain: How many "events" remain to occur.

Queries tab

Queries will only appear in the work unit details if the work unit is a published QUERY. Displays what queries were published from that work unit. Same as the queries tab: suspend, unsuspend, activate or deactivate. delete tabs with out any data.

Helpers tab

The Helpers tab display several helpful elements. Which show the ECL. The work unit XML. Archived query, The DLL. S. O.., Thor log, ECL Agent log, and Thor slave log. The relevant logs files. If a Roxy log only logs the relevant sections for the selected work unit.

From a workunit, when you look at the log, it only shows the portion of the log that pertains to that workunit.

ECL Tab

Shows the ECL code for that workunit. It is the same thing as the Helpers ECL link.

XML tab

The workunits XML record as stored in Dali.

Using the ECL Playground

ECL Playground is a tool hosted on an ESP server. A page runs in your browser, allowing you to access and execute self-contained ECL code on your HPCC system without the use of any other tools. The ECL Playground then shows you the results and the graph in your browser. The view is very similar to what the ECL IDE displays.

Accessing ECL Playground

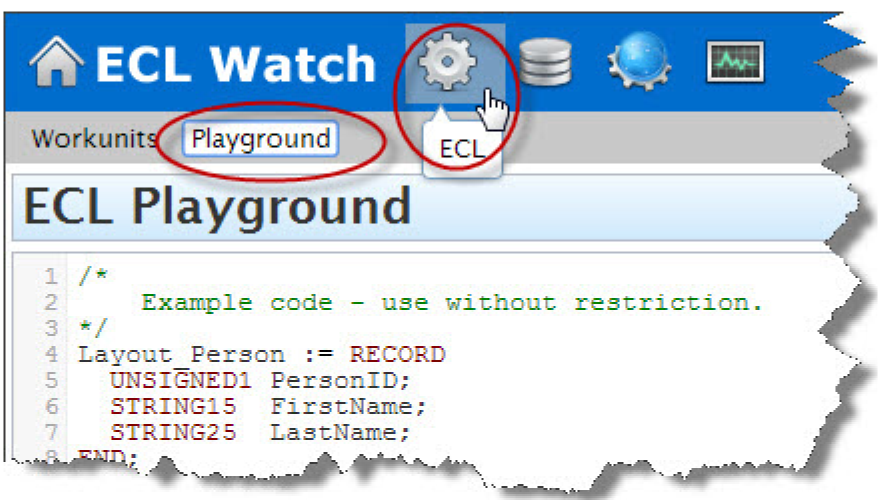
ECL Playground is installed with the HPCC platform. You can access it through the ECL Watch page.

1. In your browser, go to the **ECL Watch** URL. For example, http://nnn.nnn.nnn.nnn:8010, where nnn.nnn.nnn.nnn is your ESP server node's IP address.

   > Your IP address could be different from the ones provided in the example images. Please use the IP address of **your** node.

2. From ECL Watch, click on the**ECL** icon, then click the **Playground** link from the navigation sub-menu.

   Figure 29. ECL Playground link

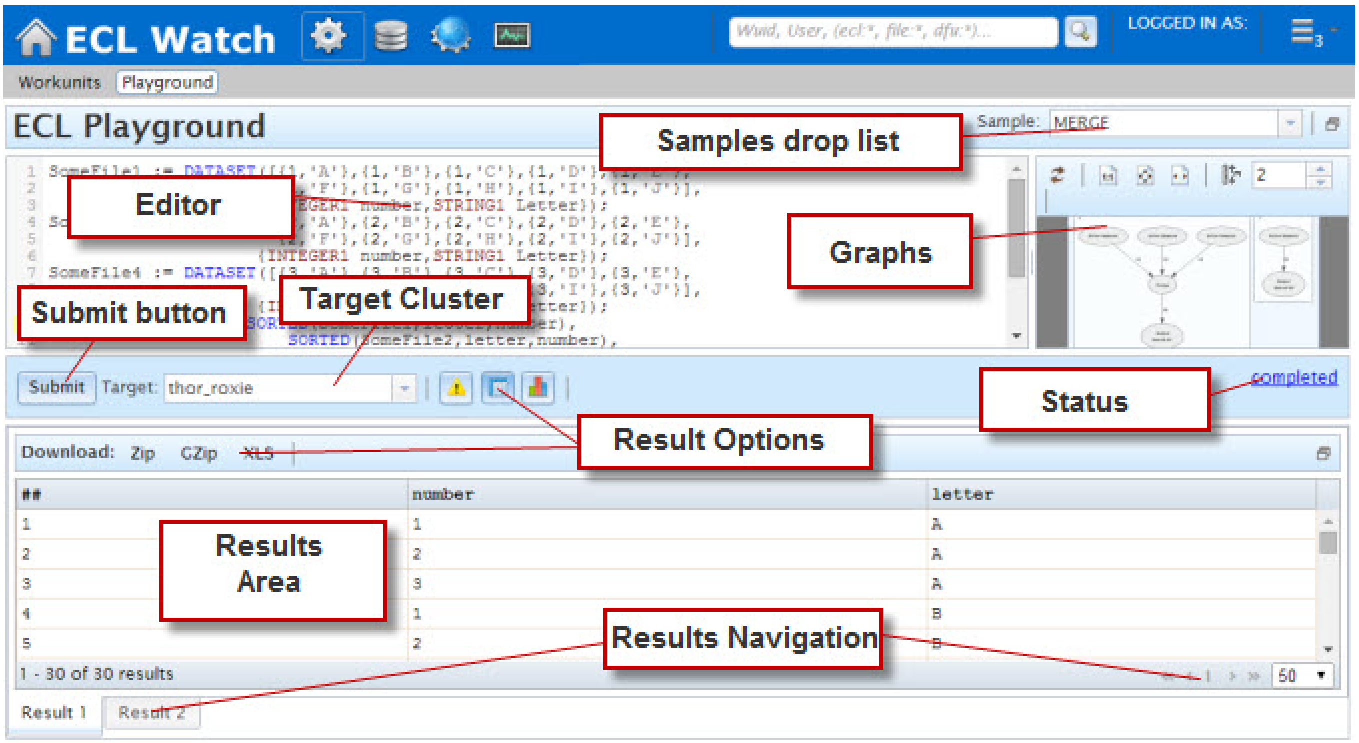
   

   The ECL Playground displays.

Introducing the ECL Playground

The ECL Playground page is a work area where you can see and run self-contained ECL code. You can see the code, submit it, and see the results. You can even change the code and resubmit it to instantly see the new results right in your browser. This is an ideal tool for the user who is not an ECL programming expert who wants to change some of the ECL code and see the results.

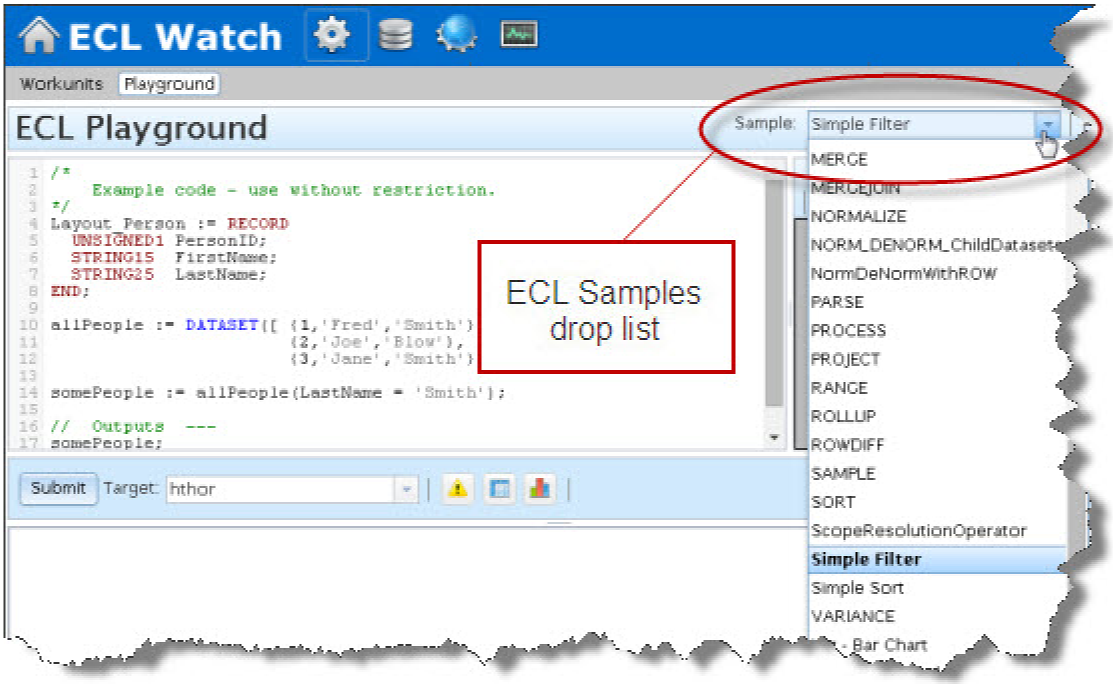
Figure 30. The ECL Playground



The ECL Playground page is divided into areas. The top portion contains the *Editor* area and the *Graph Viewer*. The Sample code drop list is at the top right. The bottom portion of the page displays the results.

The ECL Playground comes with a set of ready to run sample ECL code. The drop list contains code samples. Select any one of these samples and it loads in the editor.

Figure 31. Sample drop list



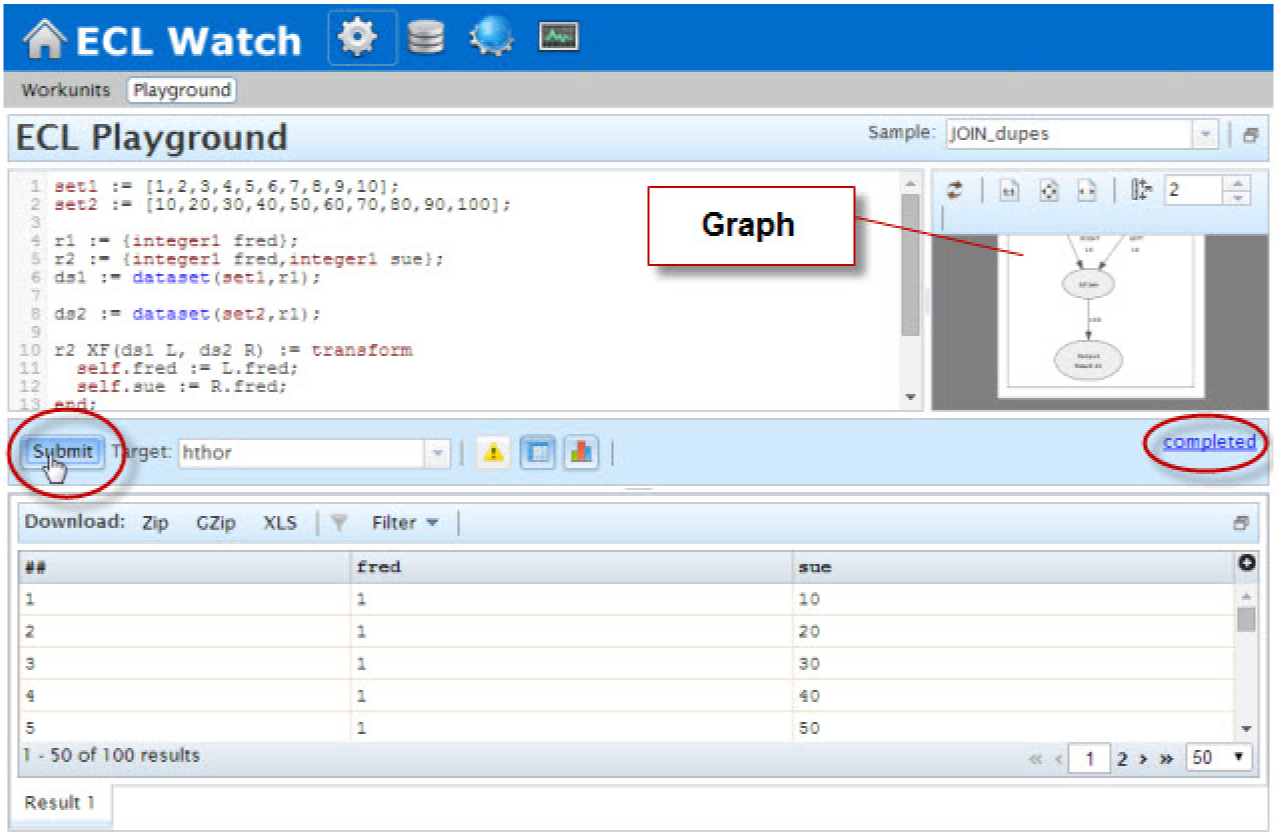
The selected code displays in the *Editor* area. You can then submit it as-is, or modify and submit. The results display at the bottom portion of the page.

Running ECL Code

To run the selected sample code, choose a target cluster from the drop list, then press the **Submit** button.

A successful run displays the word **completed** as the status and the results display in the results viewer. You can also view the graph in the upper right.

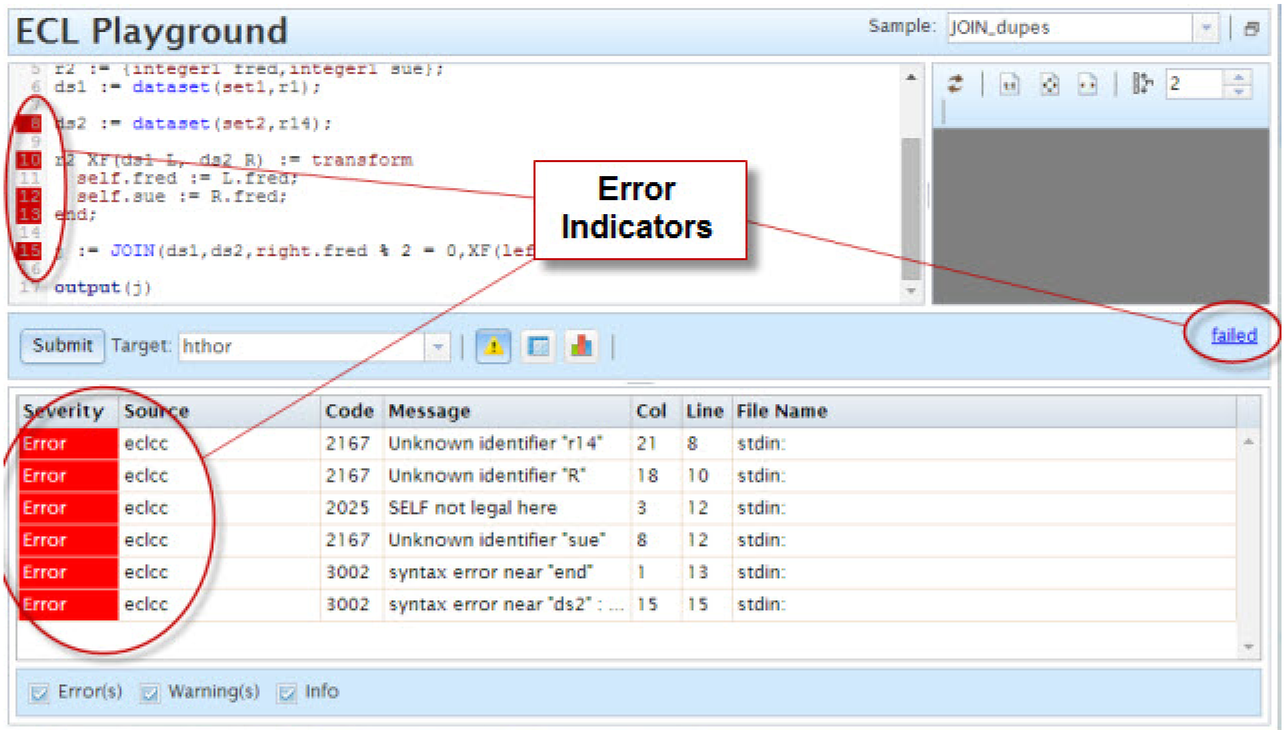
Figure 32. Success



A completed job generates a graph. You can examine the graph in greater detail by double-clicking the graph to zoom in. You can also zoom in with the mouse wheel. A double-click on a blank area of the graph will zoom out. You can use the scroll bars on the border of the graph to navigate or you can drag the graph with your mouse.

Selecting a node in the graph highlights the relevant section of the code in the Editor. This is helpful in troubleshooting or modifying code since it shows you the code that corresponds to a node in the graph.

Figure 33. Error

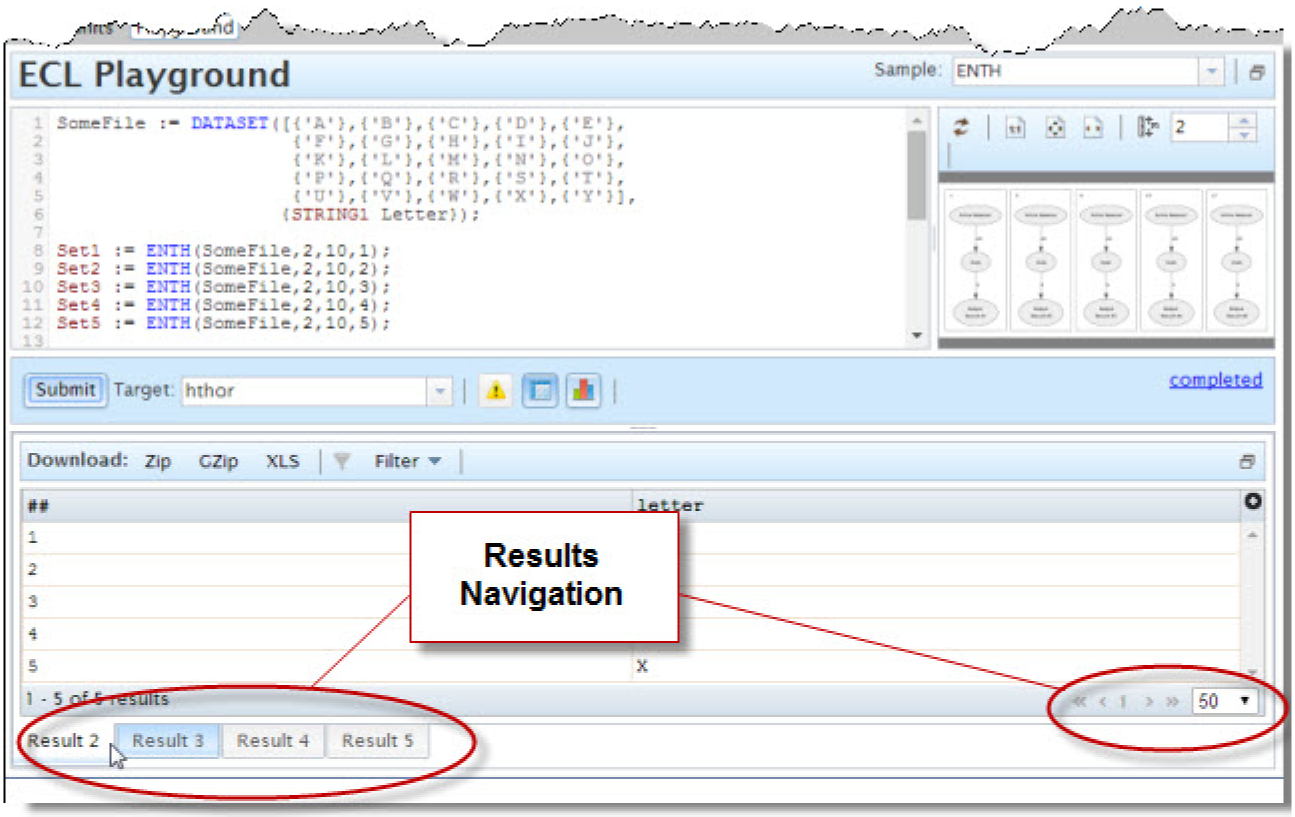


The status area displays the job status. If a job fails, errors display in the result viewer and the code is highlighted in red in the *Editor*. If there are warnings they are displayed in yellow.

Analyze the results

When running ECL Code that has multiple results, each result is on a separate tab. Select a tab to see that set of results. You can also change number of results displayed or page through the results with the links at the bottom.

Figure 34. Multiple results

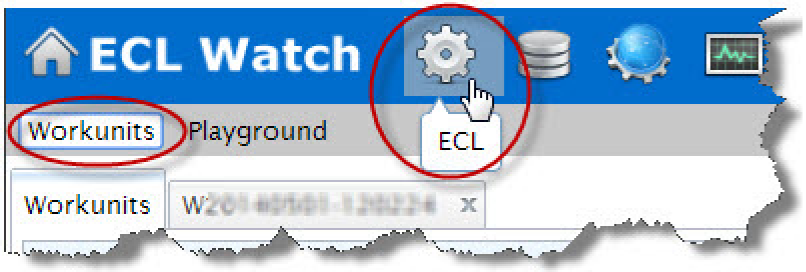


ECL from a Workunit

You can access ECL code from inside a Workunit Details page in ECL Watch.

1. Select **Workunits** from the ECL Watch menu.

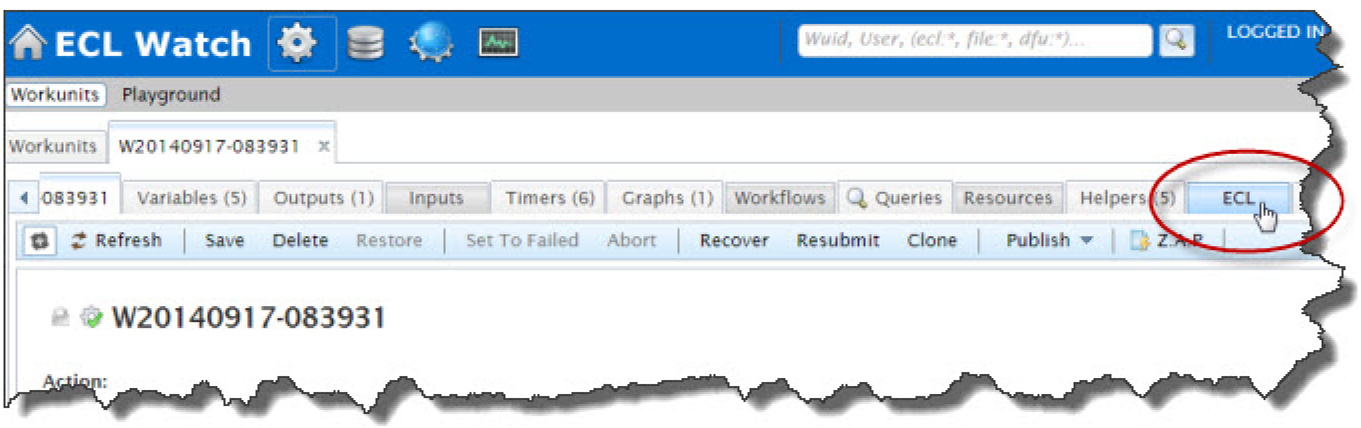
Figure 35. Browse Workunits



2. Click on a workunit hyperlink to open the Workunit Details page.

3. Click on the **ECL** tab to view the workunit's ECL code.

Figure 36. ECL link



Files

This chapter contains sections dealing with HPCC Platform Files, found on the **Files** link in ECL Watch.

In an HPCC platform, data files are partitioned across nodes. The file parts, referenced using Logical Filenames, are stored in the Distributed File Utility. This allows the collection of file parts to be referenced as a single entity.

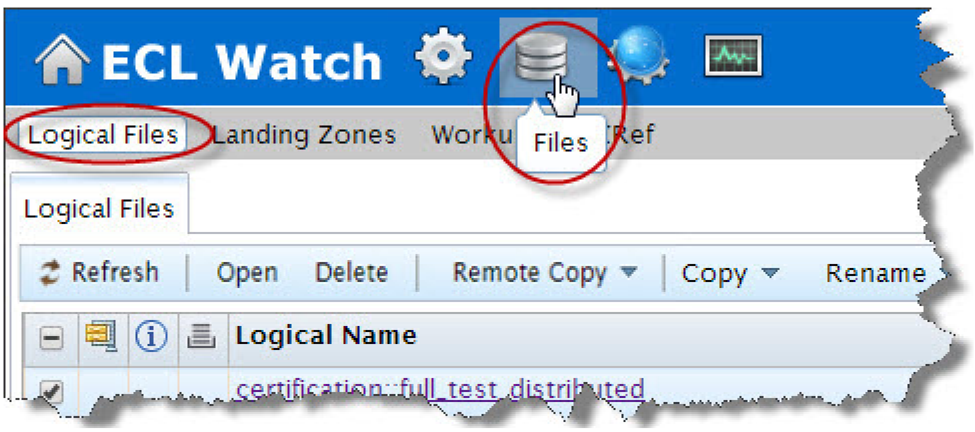
Files

The **Files** page contains features relating to the process of getting data files on to your cluster, managing these files and also the workunits associated with them. Click on the **Files** icon for access to the Files features. You can also perform actions on selected files and superfiles using the Workunit Action buttons.

Logical Files Page

To access the Files page click on the **Files** icon, then click the **Logical Files** link from the navigation sub-menu.

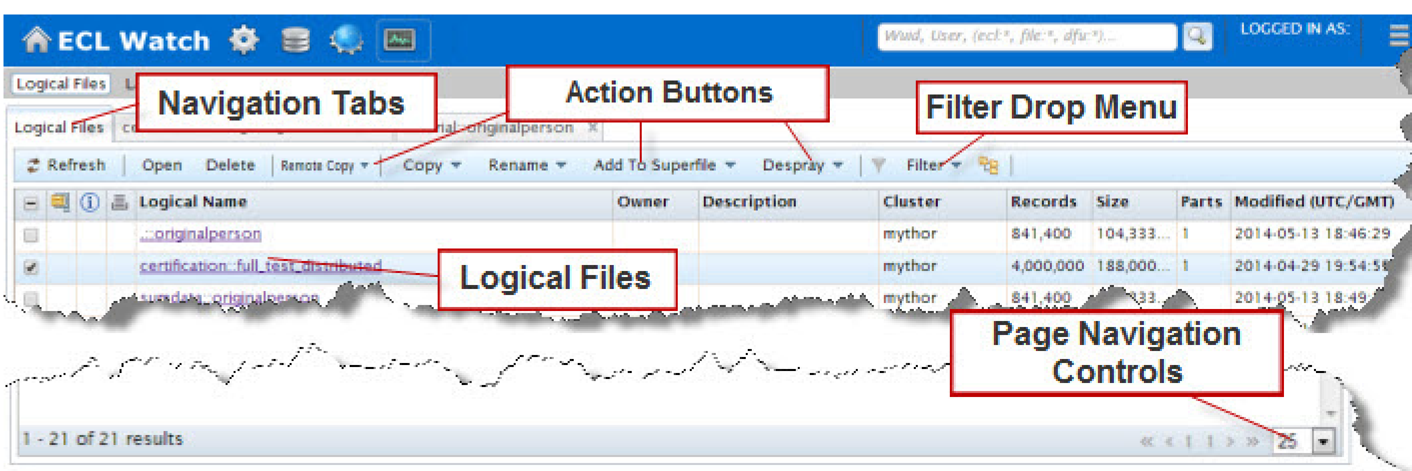
Figure 37. Logical Files



You can browse or search for logical files from this page using the Filter drop menu.

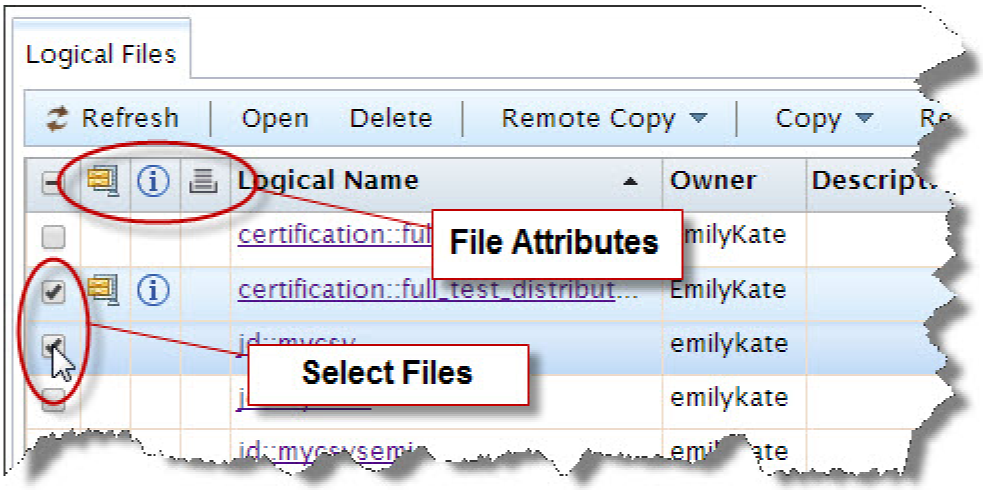
Note: Filter criteria are not case sensitive.

Figure 38. Logical Files Page



To see details for a particular file, or to perform some action on it you must select it. You can select a file or files by checking the check box. You can also click and drag your mouse over a group of check boxes, to select multiple files.

Figure 39. Select Files



There are three columns to indicate some file attributes:

	Compressed File
	Key File (index)
	Superfile

You can also sort a column by clicking on the column heading. Click once for ascending, click again to toggle to descending. The arrow shows the sort order.

Once you have selected a file or files, the Action Buttons are enabled. You can perform actions on selected files.

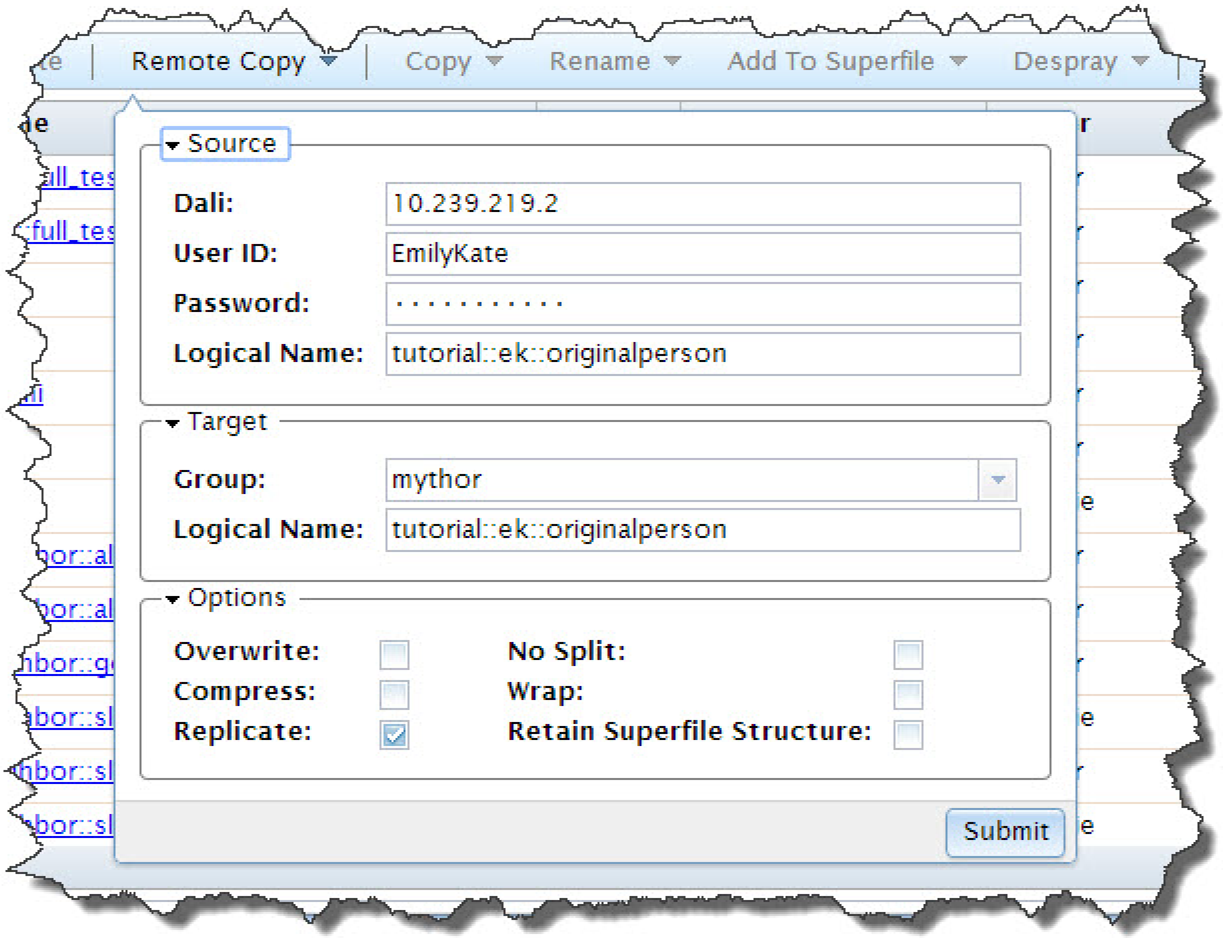
- Press the **Open** button to open the Logical Files Details page(s).
- Press the **Delete** button to delete file(s).
- Press the **Remote Copy** button to open the dialog where you can copy files from a foreign HPCC Platform. You will need premission to access the foreign Dali server.
- Press the **Copy** button to copy a file. You can modify some of the copy options from the drop menu.
- Press the **Rename** button to rename a logical file. You can modify some rename options from the drop menu.
- Press the **Add To Superfile** button to create and add file(s) to a superfile.
- Press the **Despray** button to despray the file. You can modify some despray options from the drop menu.
- Press the **Filter** button to display additional filter options. Use these options to filter the list.
- Press the Tree image button (to the right of the Filter button) to view files by scope in a tree view.

You can press the **Open** button to open a tab with the details for each selected file.

Remote Copy

Press the **Remote Copy** button to open the dialog where you can copy files to or from a foreign dali.

Figure 40. Remote Copy Dialog



Fill in the values for the Source file, and the Target destination, check any appropriate options then press the **Submit** button.

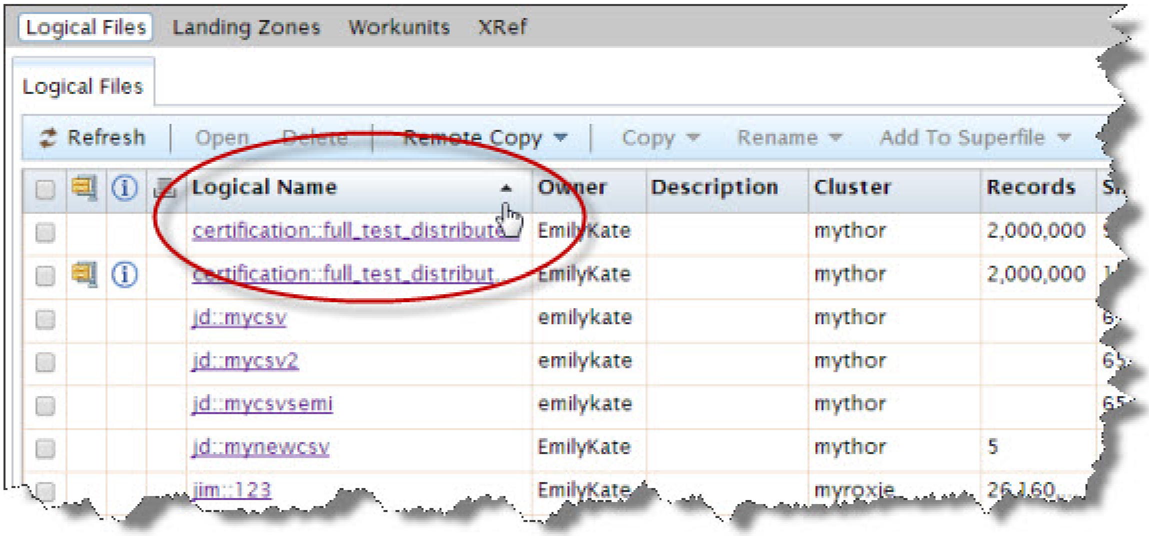
Copy File

Press the **Copy** button to display the copy drop menu, with additional file copy options.

Sorting Columns

You can sort a column by clicking on the column heading. Click once for ascending, click again to toggle to descending. The direction of the arrow indicates the sort order.

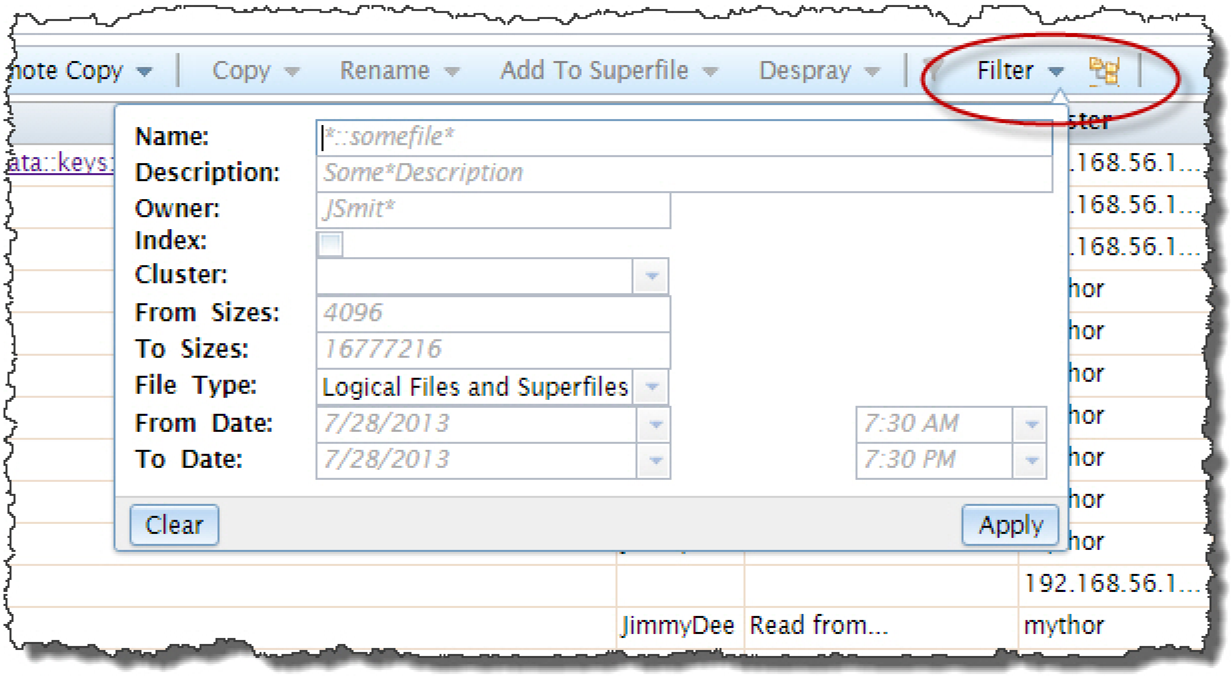
Figure 41. Logical File sort by column



Logical Files Filter Options

You can filter the logIcal files displayed on the Logical Files tab by clicking on the **Filter** Action button. The Filter sub-menu displays. Fill in values to specify the filter criteria, then press the **Apply** button.

Figure 42. Logical Files Filter sub-menu



The logical file filter options allow you to filter files using the specified criteria. Logical files can be filtered by:

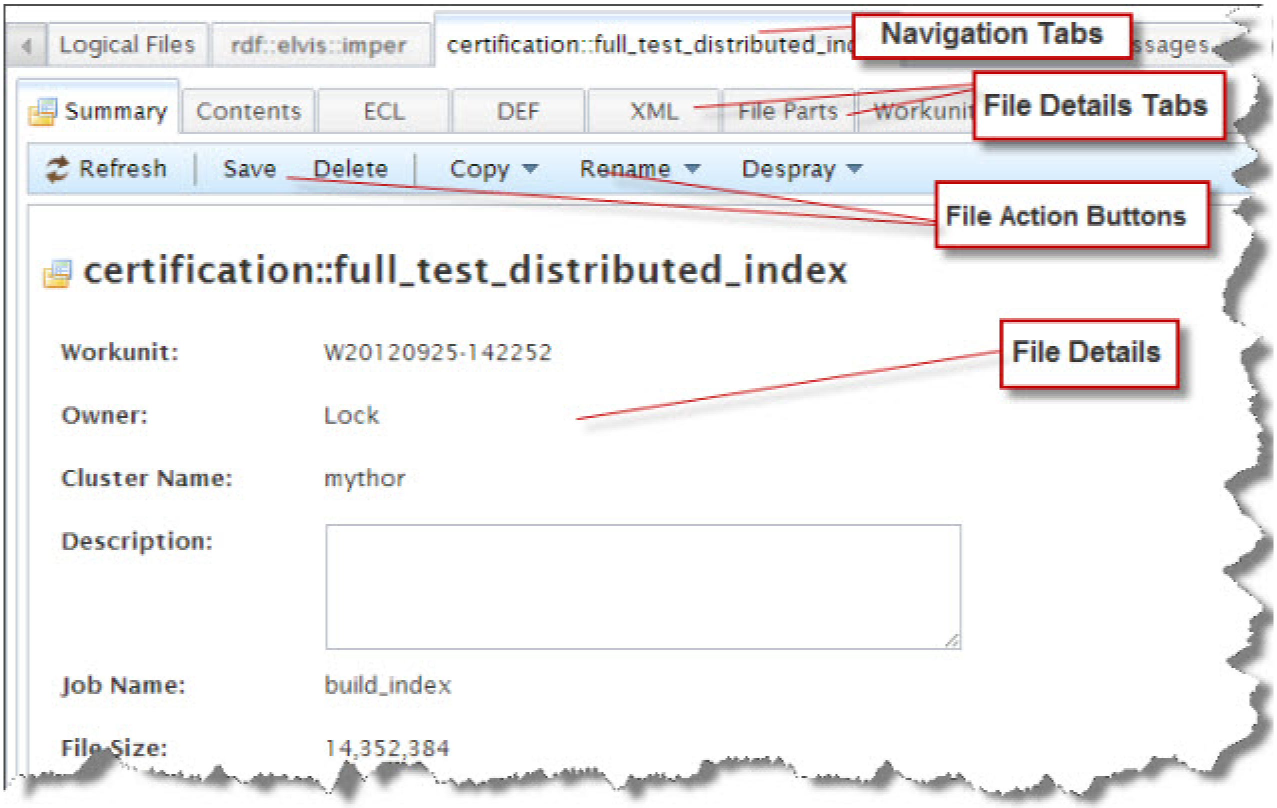
- **Name** - filter files by name. Supports wildcards.
- **Description** - filter files by description. Supports wildcards.
- **Owner** - filter files by owners. Supports wildcards.
- **Index** - include only Index files if checked.
- **Cluster** - filter files by cluster. Select the cluster from the drop list.
- **From Sizes** - filter files from a specific size.
- **To Sizes** - filter files up to a specific size.
- **File Type** - filter files by type.
- **From date** - filter files from a specific date and/or time. Select the date and time from the drop list.
- **To date** - filter files up to a specific date and/or time. Select the date and time from the drop list.

Note: Filter criteria are not case sensitive.

Logical Files Details

The Logical Files Detail page shows specific details for the file selected. You select the file to view by clicking the appropriate tab from the Navigation Tabs at the top of the page.

Figure 43. Logical Files Detail Page



The Logical File details summary appears in the main File Details portion of the files page. You can view other file details using the **File Details Tabs** at the top portion of the Page.

- Select the **Summary** tab to view a summary of the file details.
- Select the **Contents** tab to view file contents.
- Select the **ECL** tab to view the ECL code.
- Select the **DEF** tab to view the ECL definitions.
- Select the **XML** tab to view the XML representation of the logical file.
- Select the **File Parts** tab to view information about the various file parts.
- Select the **Queries** tab to see which queries use use which logical files.
- Select the **Workunit** tab to view the corresponding workunit details. Note that the workunit tab shows you the same information that you would see if you selected it through the workunit link.

On the File Details Summary tab, you can perform some actions on the selected file.

- Press the **Refresh** button to refresh the file details.
- Press the **Save** button to save any changes you make to the file details.
- Press the **Delete** button to delete the file.
- Press the **Copy** button to copy a file. You can also modify some file attributes from the drop menu.
- Press the **Rename** button to provide a name and rename the file.
- Press the **Despray** button to despray the file. You can also modify some despray options from the drop menu.

Superfiles

A superfile is a managed list of sub-files (Logical Files) treated as a single logical entity. When a file is a superfile, the Summary tab displays the superfile details, such as each subfile. Select a superfile from the Logical Files list, then press the Open action button. This displays the superfile details page.

Figure 44. Superfile Details page

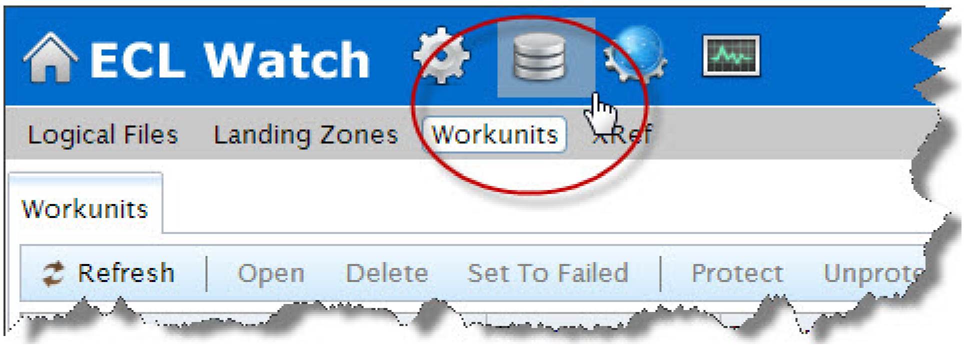
On the superfile details page you can:

- See a summary of the sub-files the superfile contains.
- See the details of the sub-files.
- Select one or more sub-file(s).
- Press the **Save** button to save any changes the superfile.
- Press the **Delete** button delete the superfile.
- Press the **Remove** button to remove a sub-file from the superfile.

DFU Workunits Page

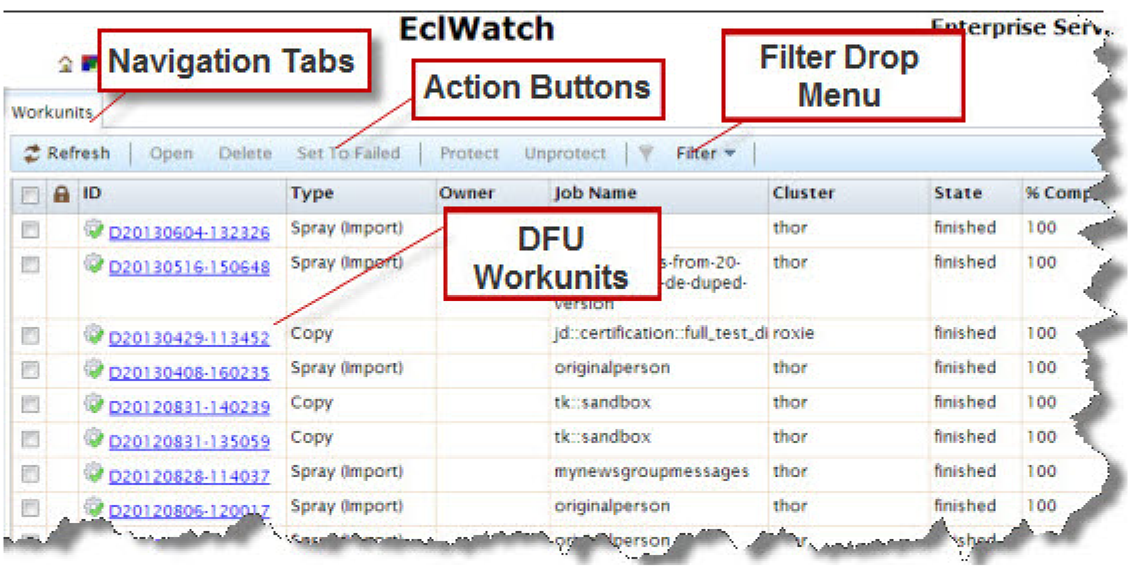
The DFU Workunits page contains a list of all the DFU workunits on your system. It provides access to more details about the workunits. You can also perform actions on the selected workunit using the Workunit Action buttons.

Figure 45. Files Link



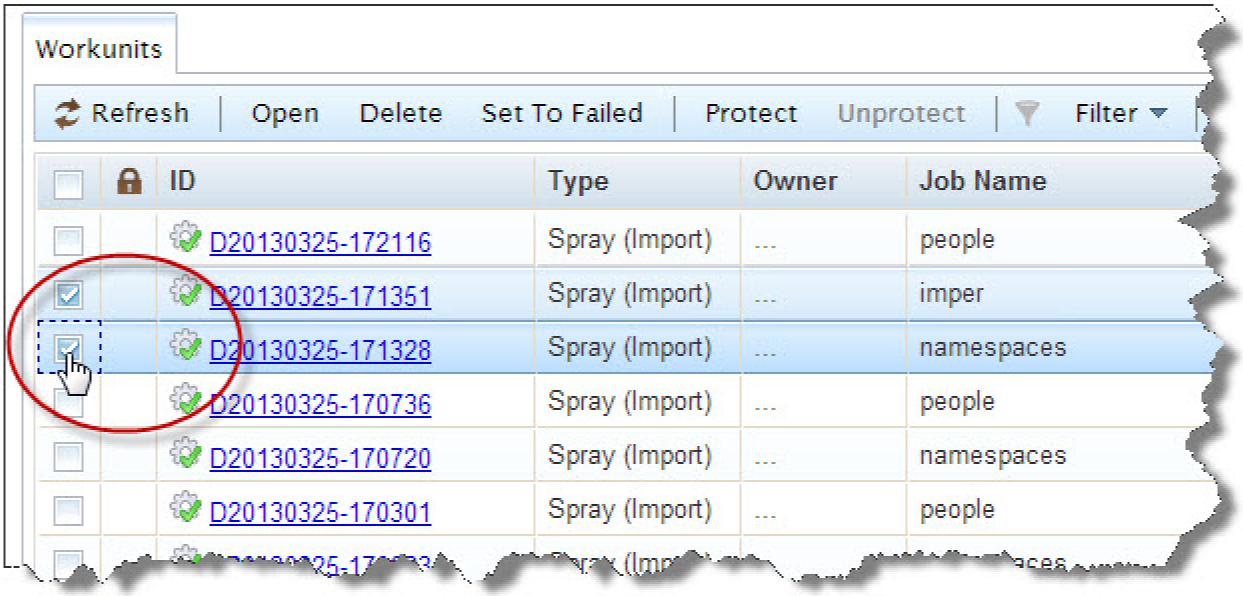
To access the DFU workunits page, click on the **Files** link on the navigation pane, then click the **Workunits** link from the navigation sub-menu. This action opens the DFU Workunits page. The page displays the DFU Workunits on your system.

Figure 46. Browse DFU Workunits



To further examine a workunit or to perform some action on it you must select it. You can select the workunit by checking the check box. You can also double-click on the workunit to select and open it in a new tab.

Figure 47. Select DFU Workunit



You can select multiple workunits by checking the check box next to each workunit. You can also click-and-drag over a group of workunit check boxes to select multiple workunits.

The enabled Action buttons now allow you to perform some actions on the selected workunits.

- Press the **Refresh** button to refresh the list.
- Press the **Open** button to open the workunit(s) details tab.
- Press the **Delete** button to delete selected workunit(s).
- Press **Set to Failed** button to set the workunit(s) state to failed.
- Press the **Protect** button to lock the workunit(s). This prevents it from archiving by the Sasha server.
- Press the **Unprotect** button to unlock the selected protected workunit(s).
- Press the **Filter** button to display additional filter/search options.

Note: Filter criteria are not case sensitive.

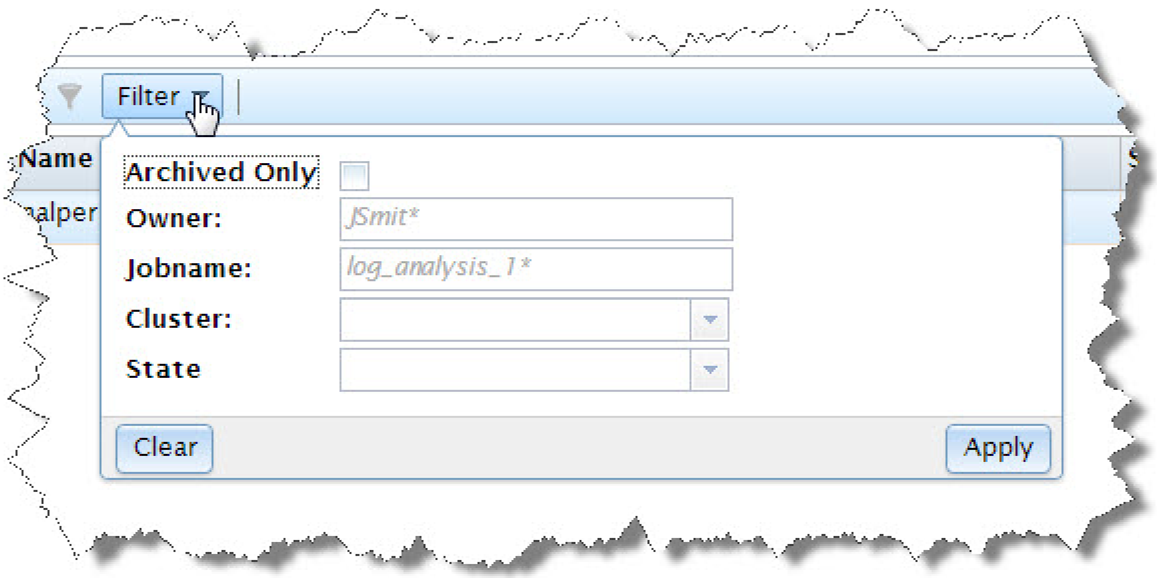
When you select a workunit you can then press the **Open** action button to view the workunit details. You can also double-click on a particular workunit to open the details tab.

When you select and then open multiple units, they will each open their own tab.

DFU Workunits Filter Options

You can filter the workunits displayed on the Workunits tab by clicking on the **Filter** Action button. The Filter submenu displays. Fill in values to specify the filter criteria, then press the **Apply** button.

Figure 48. The DFU Workunit Filter



The DFU Workunit filter options allow you to filter workunits using the specified criteria. Workunits can be filtered by:

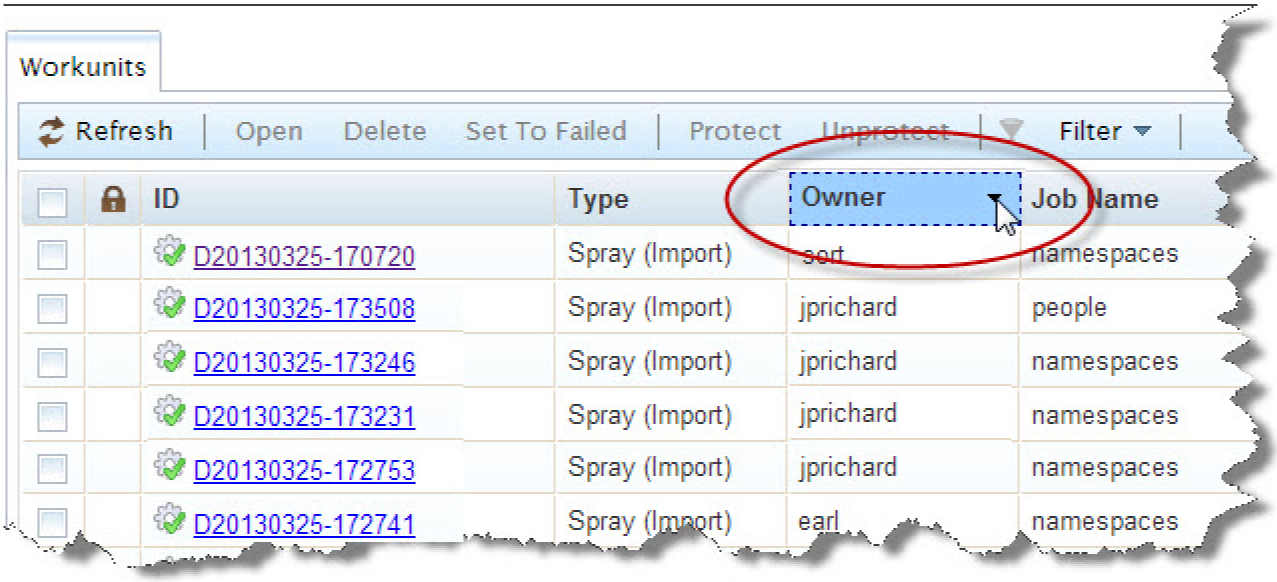
- **Archived Only** - when checked, this filter will search only archived workunits.
- **Owner** - filter workunits for specific owners. Supports wildcards.
- **Job Name** - filter workunits by job name. Supports wildcards.
- **Cluster** - filter workunits by cluster. Select the cluster from the drop list.
- **State** - filter workunits by state. Select the state from the drop list.

Note: Filter criteria are not case sensitive.

Sorting Columns

You can sort a column by clicking on the column heading. Click once for ascending, click again to toggle to descending. The direction of the arrow indicates the sort order.

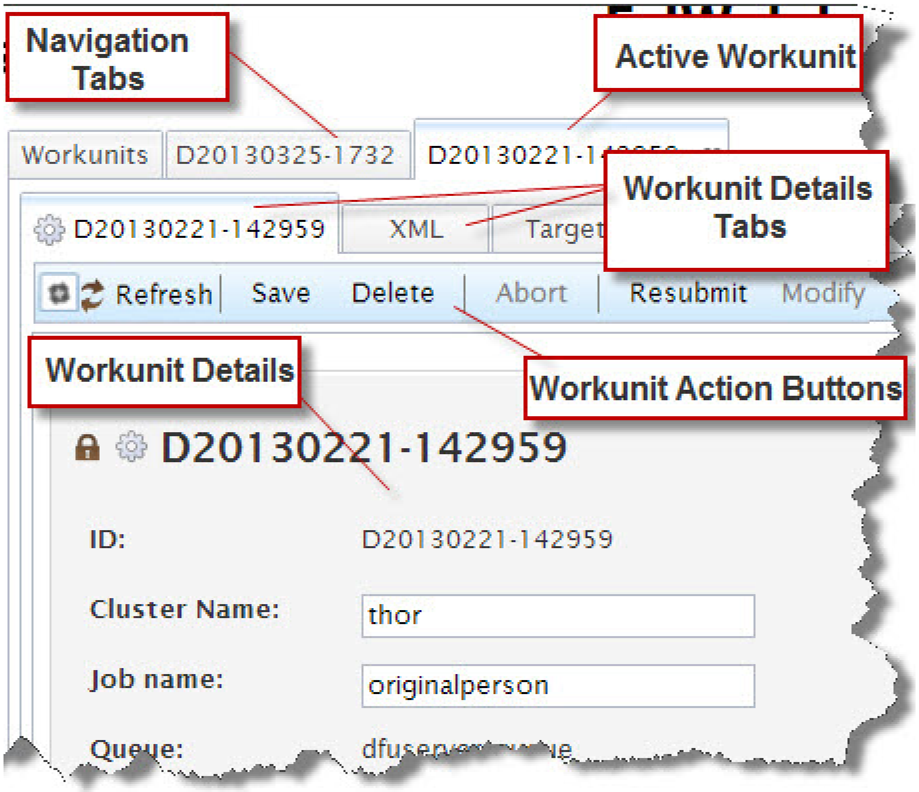
Figure 49. DFU Workunit Sort by column



DFU Workunit Details Page

When you open the selected workunit(s) you will see the workunit details. The Workunit Details tab provides information about a workunit. You can see more information about workunit details by selecting the various Workunit Details tabs. You can also perform actions on the selected workunits using the Workunit Action buttons.

Figure 50. Workunit Details



Additional Workunit details are located in the Workunit Details section of the page. Job name, queue, command, time, completion percentage, along with specific process messages display here.

You can use the Workunit Action buttons on the Active Workunit tab to perform actions on the selected workunit. Press the appropriate Workunit Action button to perform the following actions.

- Press the **Refresh** button to refresh the workunit details.
- Press the **Save** button to save the workunit.
- Press the **Delete** button to delete the workunit.
- Press the **Abort** button to abort a running workunit.
- Press the **Resubmit** button to resubmit the workunit (not yet implemented).
- Press the **Modify** button to modify the workunit (not yet implemented).

XML Tab

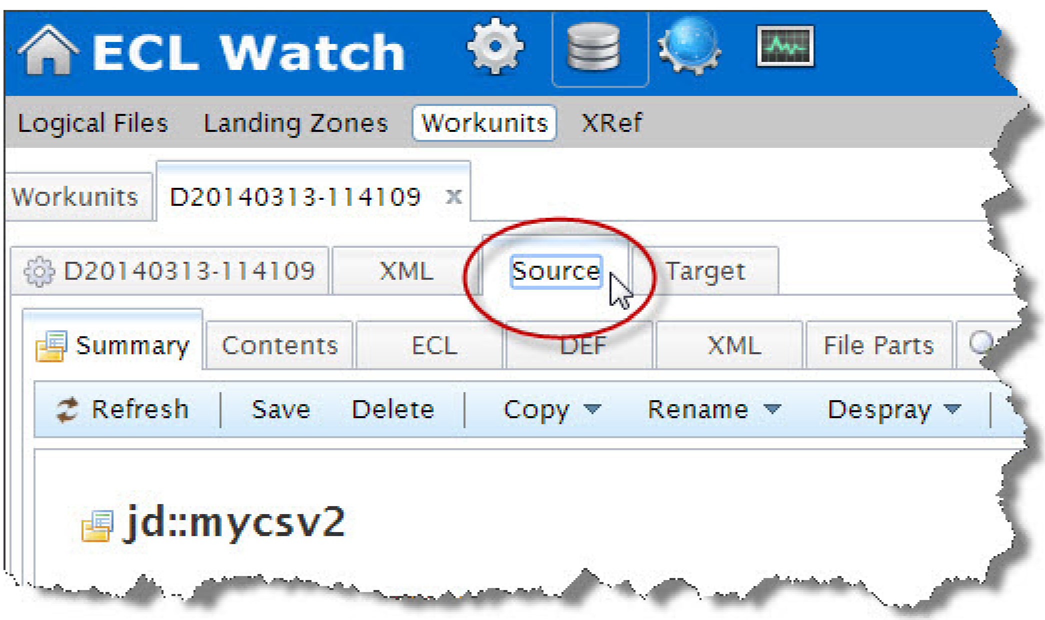
The XML Tab on the workunit details page allows you to see the XML representation of the workunit.

Figure 51. Workunit Detail XML tab

Source Tab

The Source Tab on the workunit details page allows you to view the source file(s) of the DFU workunit.

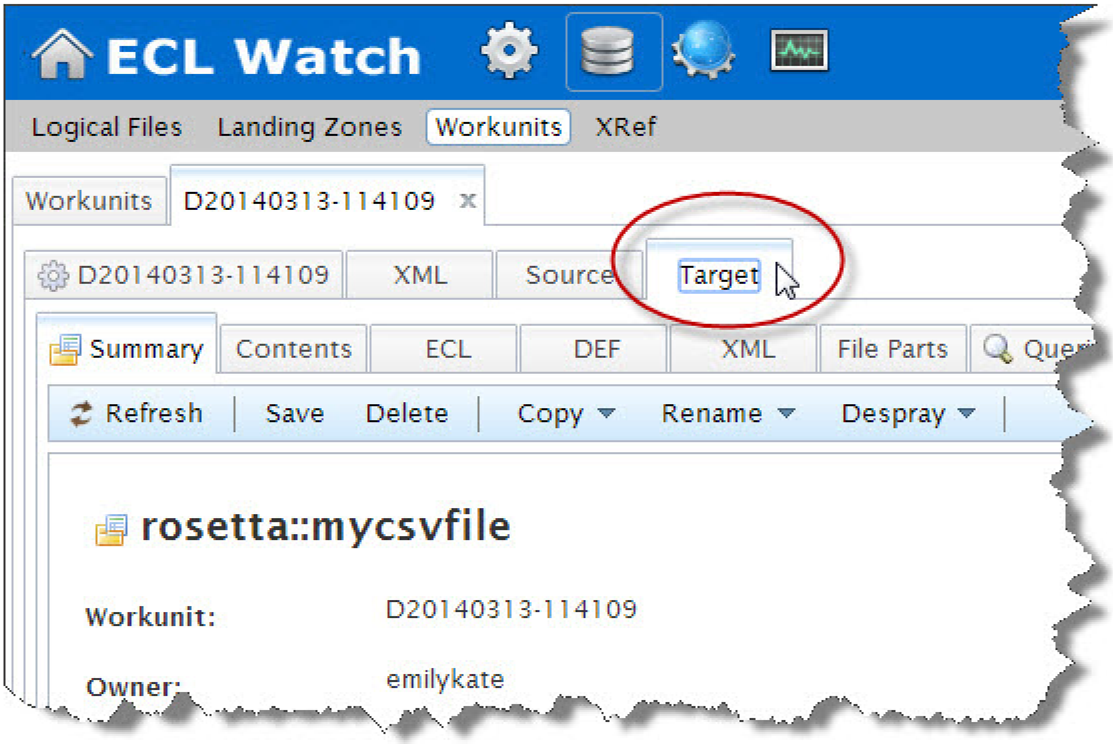
Figure 52. Workunit Detail Source tab



Target Tab

The Target Tab on the workunit details page allows you to view the target of the DFU workunit.

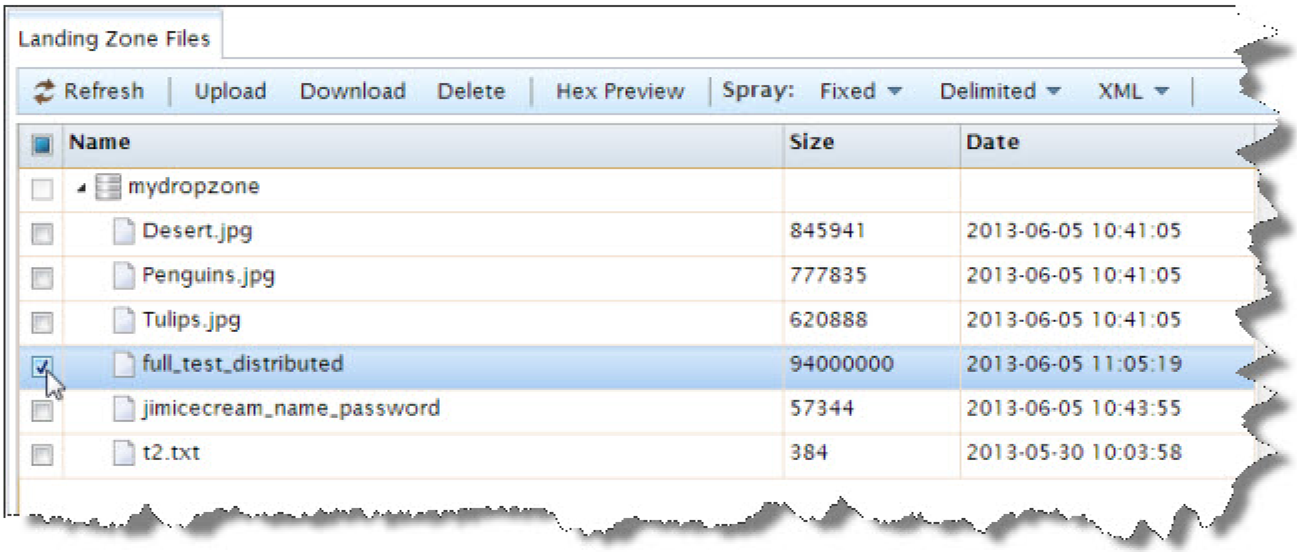
Figure 53. Workunit Detail Target tab



Landing Zones

To access the Landing Zones page click on the **Files** icon, then click the **Landing Zones** link from the navigation sub-menu. The Landing Zone link displays the Landing Zones page. The Landing Zone Page shows you each landing zone you have configured for your cluster and its contents.

Figure 54. Landing Zone Page



Click on the arrow next to a drop zone container to expand. The files on the drop zone display. You can choose to upload, download, or delete any files on the drop zone using the landing zone action buttons. You can also spray files to a cluster from this page.

Upload files

You can upload files to your landing zone from the Landing Zone page.

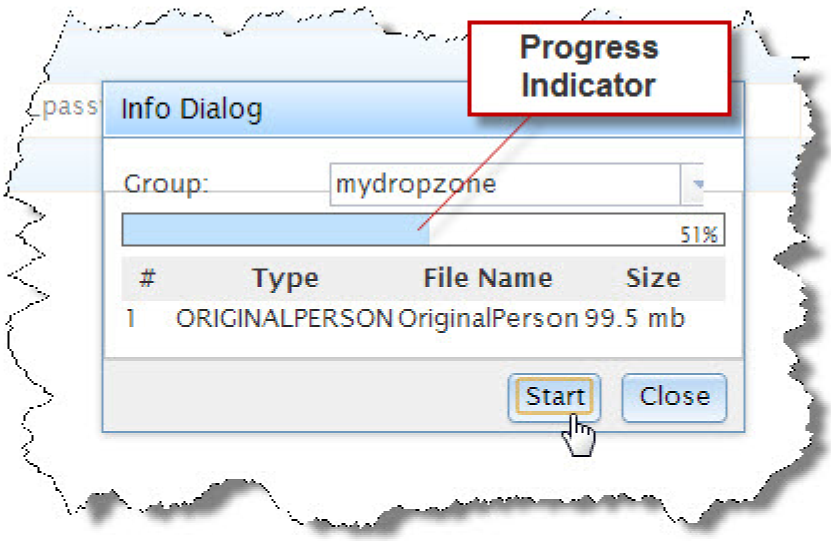
1. Press the **Upload** action button.

> The upload utility in ECL Watch is limited by the browser's file size limitation. This is typically 4 GB. For production systems, we recommend a secure copy protocol (scp) utility.

2. Choose the file from the window that displays.

3. Verify the file and dropzone are correct in the **Info Dialog** that displays.

Figure 55. Info Dialog



4. Press the **Start** button to begin the upload.

   The file progress indicator shows as the file uploads. When upload is complete, the window closes.

Download files

You can download files from your landing zone to your computer.

1. From the Landing Zone page, select a file (or files) to download by checking the box next to it.
2. Press the **Download** button to download the file.

The file will download to your browser's download directory as specified in your browser settings.

Delete files

You can delete files from your landing zone.

1. From the Landing Zone page, select a file (or files) to delete by checking the box next to it.
2. Press the **Delete** action button to delete the file from your landing zone.

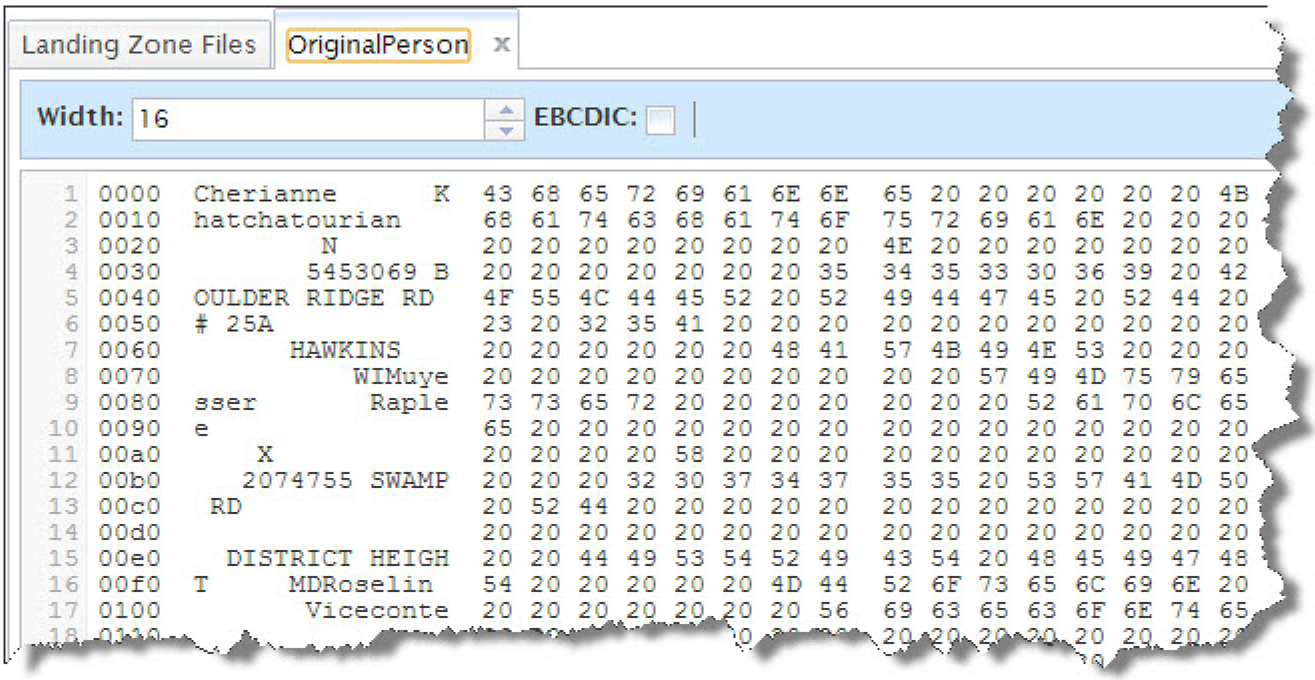
Hex Preview

The Hex Preview shows the contents of a file on the landing zone in hexadecimal form. If the file is large, then only the first 32k display. Hex preview is designed for fixed length files, although it can also work for delimited files but may be limited in that regards.

1. Select a file by checking the box next to it.

2. Press the **Hex Preview** action button to display the selected file(s) in a hex format.

Figure 56. Hex Preview



You can adjust the width of the view on the hex preview page using the spinbox controls on the **Width** box.

If you have an EBCDIC file check the box next to **EBCDIC:** for it to display properly.

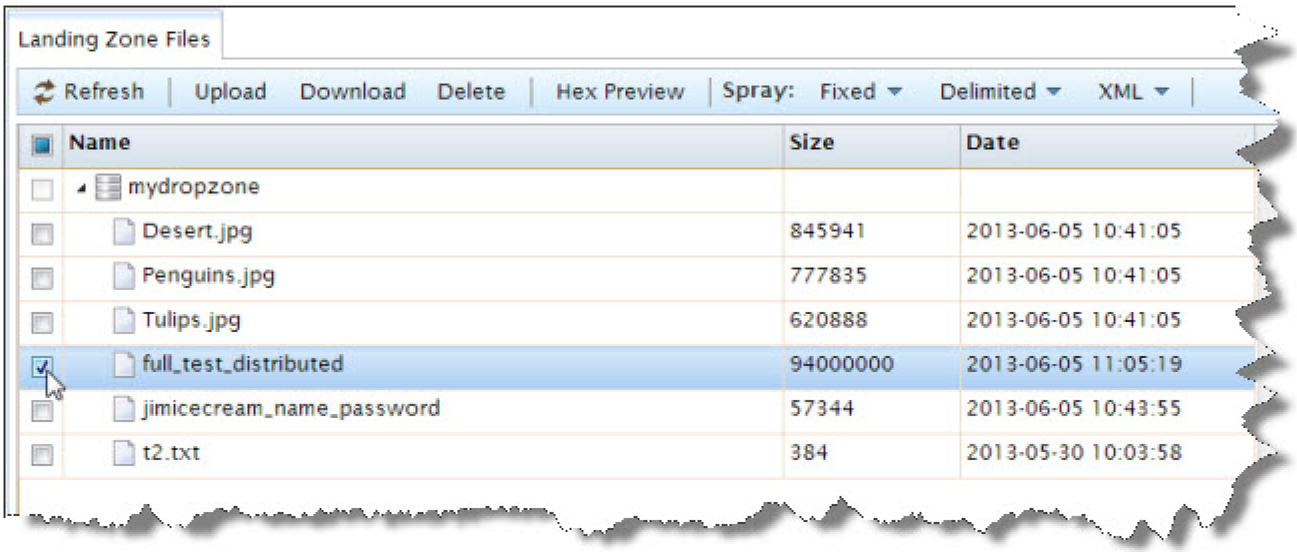
Spray/Despray

This section details how to Spray and Despray a data file to your cluster using ECL Watch. The spray function is integrated into the Landing Zone page as detailed in the Upload Files section .

In order to spray a file to your cluster you must first upload the file to your landing zone. The file upload steps are detailed in the preceding section.

With the file successfully uploaded to the landing zone you can choose the file to spray from the Landing Zone page. Once selected the Spray buttons become enabled.

Figure 57. Landing Zone Page



Spray Data to a Cluster

With the **Spray:** Action buttons enabled, you press the appropriate button for the Spray you wish to perform. Fill in the appropriate values when prompted to complete the spray.

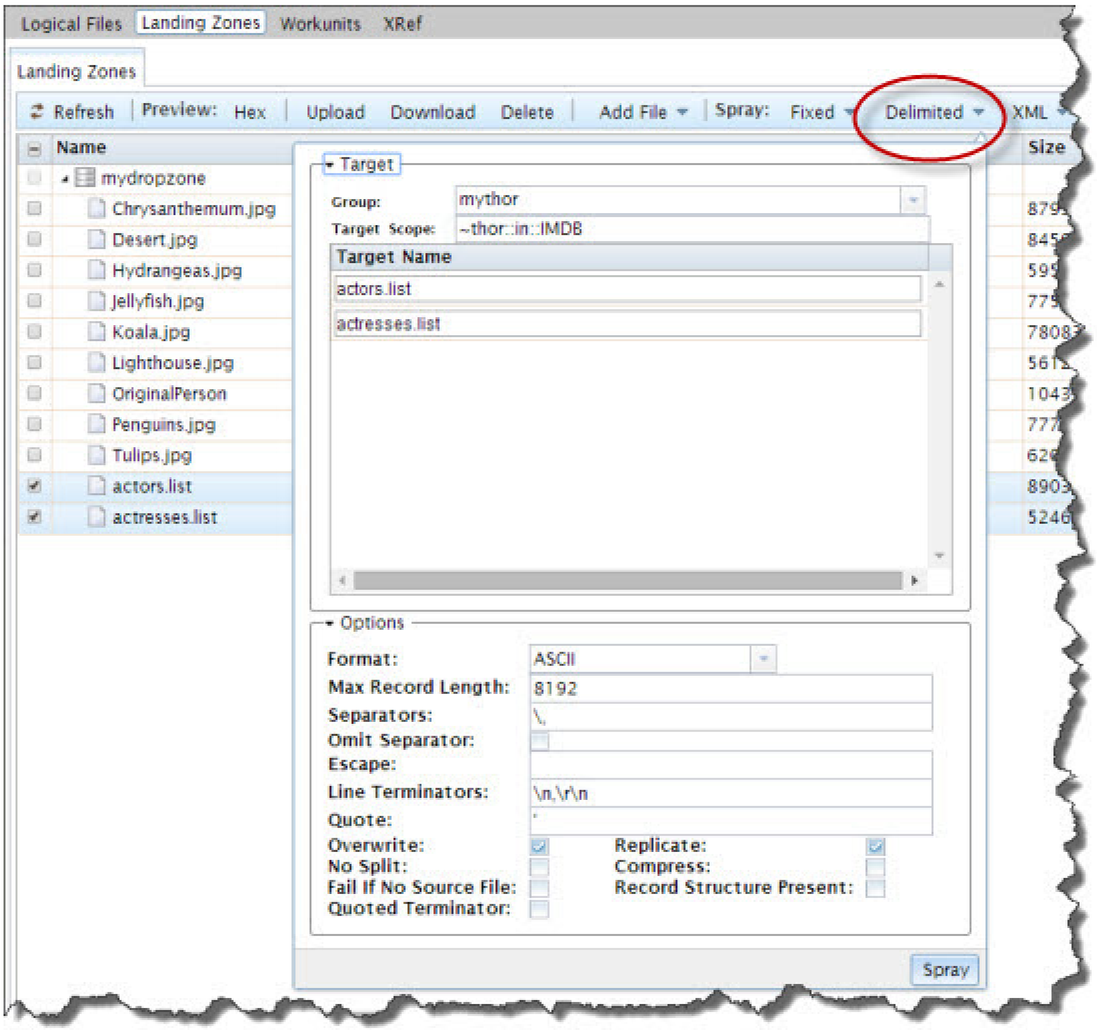
Spray Files

One way you can spray files to your clusters is from the **Landing Zone** page in ECL Watch.

1. Select the file from your drop zone by checking the box next to it.
2. Select the appropriate drop menu option for the type of spray you want.

   For example, to spray a delimited file, select the **Delimited** action button.

Figure 58. Landing Zone Spray



3. Fill in the values as appropriate for the spray.
4. Press the **Spray** button to spray the file(s).

Spray multiple files

You can choose to spray multiple files with the multi-file spray feature. This is useful for spraying a number of files of the same type using the same spray options.

Fixed (length) files can have different record lengths and XML files can have different row tags which must be specified individually for each file. To specify these differences select the files you want to spray and the spray type. You will then see the files listed. Enter the record length or row tag information for each file if using the Fixed or XML spray types, then check all other applicable options and Spray.

Spray Fixed

- Click on the **Files** icon, then click the **Landing Zones** link from the navigation sub-menu.
- Click on the arrow next to your dropzone to expand the list.

  The files on your drop zone display.
- Check the checkboxes for the file(s) you want to spray, then press the Spray: **Fixed** action button.

  The **Spray Fixed** dialog displays.
- Fill in relevant details:

Target	
Group	Select the name of cluster to spray to. You can only select a cluster in your environment.
Target Scope	The prefix for the logical file
Target Name	The logical filename to create. This is pre-filled with the name of the source file on the landing zone, but can be changed.
Record Length	The size of each record.
Options:	
Overwrite	Check this box to overwrite files of the same name.
Replicate	Check this box to create backup copies of all file parts in the backup directory (by convention on the secondary drive of the node following in the cluster). **This option is only available on systems where replication has been enabled.**
Compress	Check this box to compress the files.
No Split	Check this box to prevent splitting file parts to multiple target parts.
Fail if no source file	Check this box to allow the spray to fail if no source file is found.

- Press the **Spray** button.

  A **DFU Workunit** tab displays for each job. You can see the progress of each spray operation on the tab. If a job fails, information related to the cause of the failure also displays.

Spray Delimited

- Click on the **Files** icon, then click the **Landing Zones** link from the navigation sub-menu.
- Click on the arrow next to your dropzone to expand the list.

  The files on your drop zone display.
- Check the checkboxes for the file(s) you want to spray, then press the Spray: **Delimited** action button.

  The **Spray Delimited** page displays.
- Fill in relevant details:

Target	
Group	Select the name of cluster to spray to. You can only select a cluster in your environment.
Target Scope	The prefix for the logical file
Target Name	The logical filename to create. This is pre-filled with the name of the source file on the landing zone, but can be changed.
Options:	
Format	Select the format from the droplist
Max Record Length	The length of longest record in the file.
Separators	The character(s) used as a separator in the source file.
Omit Separator	Check this box to omit the separator.
Escape	A null-terminated string containing the CSV escape characters.
Line Terminators	The character(s) used as a line terminators in the source file.
Quote	The character used as a quote in the source file.
Overwrite	Check this box to overwrite files of the same name.
No Split	Check this box to prevent splitting file parts to multiple target parts.
Fail if no source file	Check this box to allow the spray to fail if no source file is found.
Replicate	Check this box to create backup copies of all file parts in the backup directory (by convention on the secondary drive of the node following in the cluster). **This option is only available on systems where replication has been enabled.**
Compress	Check this box to compress the files.
Quoted Terminator	Check this box to indicate that the terminator character can be included in a quoted field. If unchecked, it allows quicker partitioning of the file (avoiding a complete file scan).
Record Structure Present	Flag indicating whether to derive the record structure from the header of the file.

- Press the **Spray** button.

  A **DFU Workunit** tab displays for each job. You can see the progress of each spray operation on the tab. If a job fails, information related to the cause of the failure also displays.

Spray XML

- Click on the **Files** icon, then click the **Landing Zones** link from the navigation sub-menu.
- Click on the arrow next to your dropzone to expand the list.

  The files on your drop zone display.
- Check the checkboxes for the file(s) you want to spray, then press the Spray: **XML**action button.

  The **Spray XML** dialog displays.
- Fill in relevant details:

Target	
Group	Select the name of cluster to spray to. You can only select a cluster in your environment.
Target Scope	The prefix for the logical file
Target Name	The logical filename to create. This is pre-filled with the name of the source file on the landing zone, but can be changed.
Row Tag	The tag name of the row delimiter.
Options:	
Format	Select the format from the droplist
Max Record Length	The length of longest record in the file.
Overwrite	Check this box to overwrite files of the same name.
No Split	Check this box to prevent splitting file parts to multiple target parts.
Fail if no source file	Check this box to allow the spray to fail if no source file is found.
Replicate	Check this box to create backup copies of all file parts in the backup directory (by convention on the secondary drive of the node following in the cluster). **This option is only available on systems where replication has been enabled.**
Compress	Check this box to compress the files.

- Press the **Spray** button.

  A **DFU Workunit** tab displays for each job. You can see the progress of each spray operation on the tab. If a job fails, information related to the cause of the failure also displays.

Spray JSON

- Click on the **Files** icon, then click the **Landing Zones** link from the navigation sub-menu.
- Click on the arrow next to your dropzone to expand the list.

  The files on your drop zone display.
- Check the checkboxes for the file(s) you want to spray, then press the Spray: **JSON** action button.

  The dialog displays.
- Fill in relevant details:

Target	
Group	Select the name of cluster to spray to. You can only select a cluster in your environment.
Target Scope	The prefix for the logical file
Target Name	The logical filename to create. This is pre-filled with the name of the source file on the landing zone, but can be changed.
Row Path	The path specifier to the JSON content. The default takes the root level content as an array of objects to be treated as rows.
Options:	
Format	Select the format from the droplist
Max Record Length	The length of longest record in the file.
Overwrite	Check this box to overwrite files of the same name.
No Split	Check this box to prevent splitting file parts to multiple target parts.
Fail if no source file	Check this box to allow the spray to fail if no source file is found.
Replicate	Check this box to create backup copies of all file parts in the backup directory (by convention on the secondary drive of the node following in the cluster). **This option is only available on systems where replication has been enabled.**
Compress	Check this box to compress the files.

- Press the **Spray** button.

  A **DFU Workunit** tab displays for each job. You can see the progress of each spray operation on the tab. If a job fails, information related to the cause of the failure also displays.

Spray Variable

- Click on the **Files** icon, then click the **Landing Zones** link on the navigation sub-menu.
- Click on the arrow next to your dropzone to expand the list.

  The files on your drop zone display.
- Check the checkboxes for the file(s) you want to spray, then press the Spray: **Variable** action button.

  The Spray **Variable** dialog displays.
- Fill in relevant details:

	Target
Group	Select the name of cluster to spray to. You can only select a cluster in your environment.
Target Scope	The prefix for the logical file
Target Name	The logical filename to create. This is pre-filled with the name of the source file on the landing zone, but can be changed.
	Options:
Source Type	Select the source type from the drop list. Values: recfmv, recfmvb, Variable, or Variable Big-endian.
Overwrite	Check this box to overwrite files of the same name.
No Split	Check this box to prevent splitting file parts to multiple target parts.
Fail if no source file	Check this box to allow the spray to fail if no source file is found.
Replicate	Check this box to create backup copies of all file parts in the backup directory (by convention on the secondary drive of the node following in the cluster). **This option is only available on systems where replication has been enabled.**
Compress	Check this box to compress the files.

- Press the **Spray** button.

  A **DFU Workunit** tab displays for each job. You can see the progress of each spray operation on the tab. If a job fails, information related to the cause of the failure also displays.

Spray Blob

- Click on the **Files** icon, then click the **Landing Zones** link on the navigation sub-menu.
- Click on the arrow next to your dropzone to expand the list.

  The files on your drop zone display.
- Check the checkboxes for the file(s) you want to spray, then press the Spray: **BLOB** action button.

  The Spray **BLOB** dialog displays.
- Fill in relevant details:

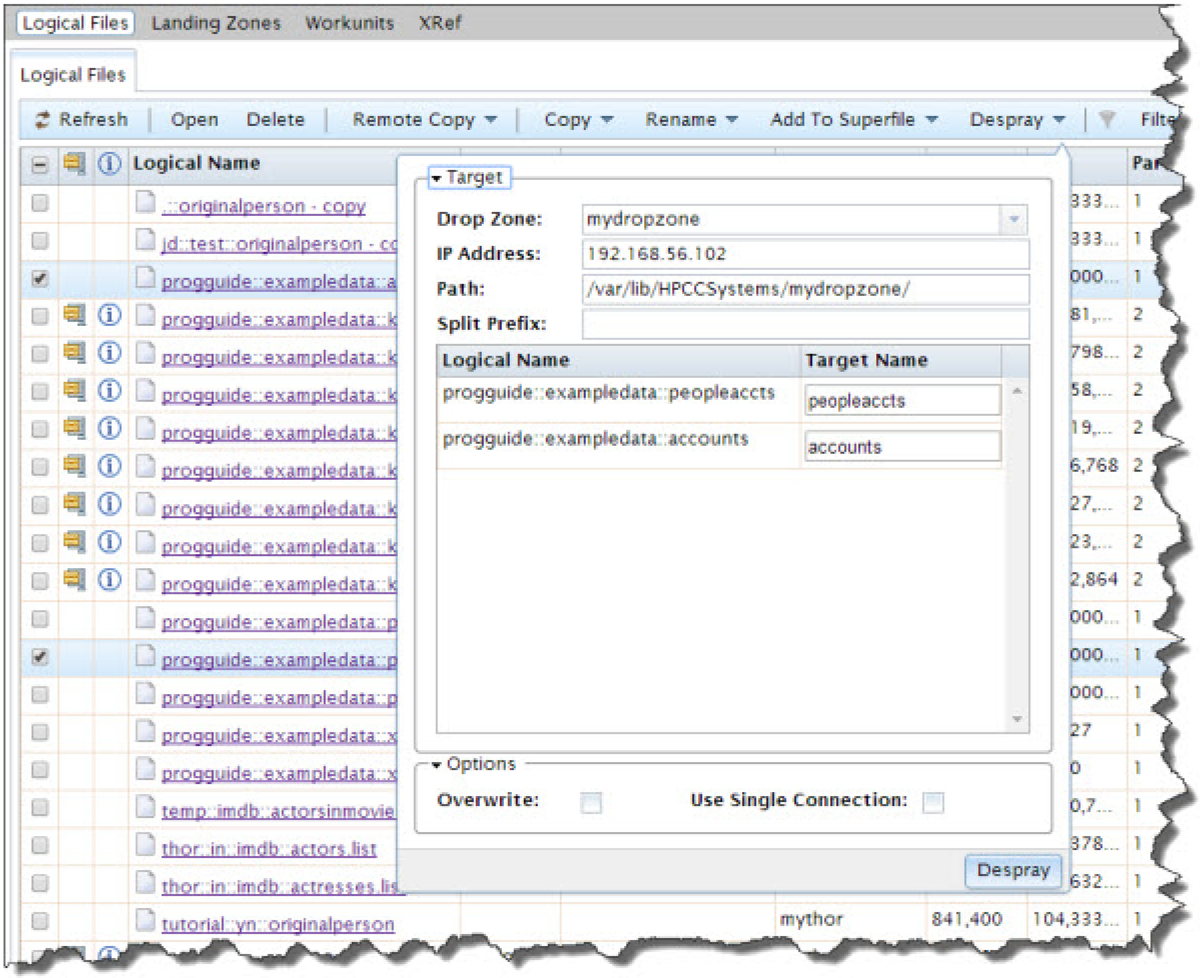
Target	
Group	Select the name of cluster to spray to. You can only select a cluster in your environment.
Target Name	The logical target name to create. Required. You must provide a target name.
Source Path	The path to the file. This is pre-filled with the name of the selected source file(s) on the landing zone, but can be changed. Supports wildcards.
Options:	
Blob Prefix	The prefix for the file.
Overwrite	Check this box to overwrite files of the same name.
No Split	Check this box to prevent splitting file parts to multiple target parts.
Replicate	Check this box to create backup copies of all file parts in the backup directory (by convention on the secondary drive of the node following in the cluster). **This option is only available on systems where replication has been enabled.**
Compress	Check this box to compress the files.
Fail if no source file	Check this box to allow the spray to fail if no source file is found.

- Press the **Spray** button.

  A **DFU Workunit** tab displays for each job. You can see the progress of each spray operation on the tab. If a job fails, information related to the cause of the failure also displays.

Desprays

- Locate the file(s) to despray in the list of files, then Press the the **Despray** action button.



- Provide **Destination** information.

Drop Zone	Use the drop list to select the machine to despray to. The items in the list are landing zones defined in the system's confguration.
IP Address	This is prefilled based upon the selected machine.
Path	Provide the complete file path of the destination including file name and extention.
Split Prefix	Prefix
Overwrite	Check this box to overwrite a file with the same name if it exists.
Use Single Connection	Check this box to use a single network connection to despray.

- Press the **Despray** button.

A DFU Workunit tab for each job opens. You can see the progress of each despray operation on the tab. If a job fails, information related to the cause of the failure also displays.

Copy

- Click on the **Files** icon, then click the Logical Files button on the navigation bar.
- Select the file(s) to copy in the list of files, then click on the **Copy** action button.
- Fill in **Destination** and **Options** information.

Target:	
Group	Select the name of cluster to copy to. You can only select a cluster in your environment.
Target Name	The logical filename to create. This is pre-filled with the name of the source file on the landing zone, but can be changed.
Options:	
Replicate	Check this box to create backup copies of all file parts in the backup directory (by convention on the secondary drive of the node following in the cluster). **This option is only available on systems where replication has been enabled.**
Wrap	Check this box to keep the number of parts the same and wrap if the target cluster is smaller that the original.
No Split	Check this box to prevent splitting file parts to multiple target parts.
Overwrite	Check this box to overwrite files of the same name.
Compress	Check this box to compress the files.
Retain Superfile Structure	Check this box to retain the superfile structure.
Preserve Compression	Check this box to preserve the compression of the original file when copying

- Press the **Copy** button.

  A **DFU Workunit** tab displays for each job. You can see the progress of each copy operation on the tab. If a job fails, information related to the cause of the failure also displays.

Remote Copy

Remote Copy allows you to copy data from a cluster outside your environment to one in your environment.

- Click on the **Files** icon, then click the Logical Files button on the navigation bar.
- Click on the **Remote Copy** link

  The **Copy File** page displays.

- Fill in **Source, Destination,** and **Options** information.

Source:	
Dali	The Dali Server in the remote environment
User ID	The Username to use to authenticate on the Remote environment (if needed)
Password	The password to use to authenticate on the Remote environment (if needed)
Logical File	The logical filename in the remote environment.
Destination:	
Group	Select the name of cluster to copy to. You can only select a cluster in your environment.
Logical Name	The logical name for the copied file.
Options:	
Replicate	Check this box to create backup copies of all file parts in the backup directory (by convention on the secondary drive of the node following in the cluster). **This option is only available on systems where replication has been enabled.**
Wrap	Check this box to keep the number of parts the same and wrap if the target cluster is smaller that the original.
Overwrite	Check this box to overwrite files of the same name.
Compress	Check this box to compress the files.
No Split	Check this box to prevent splitting file parts to multiple target parts.
Retain Superfile Structure	Check this box to retain the superfile structure.

- Press the **Submit** button.

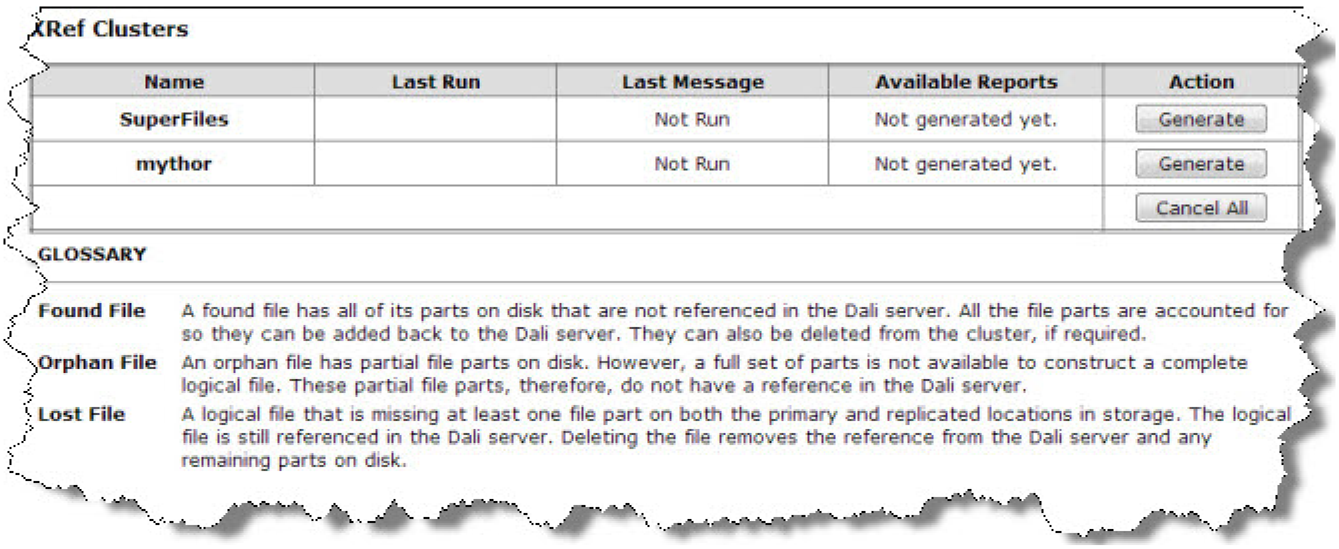
  A **DFU Workunit** tab displays. You can see the progress of the copy operation on the tab. If a job fails, information related to the cause of the failure also displays.

- Press the **Refresh** button periodically until the status of your request indicates it is **Finished** or click on the **View Progress** hyperlink to see a progress indicator.

XRef

Under the **Files** Icon on the navigation sub-menu there is a link for XRef. This link will take you to the XRef Clusters page. On the XRef clusters page you can run the XREF utility.

Figure 59. XRef Clusters page



The XREF utility provides the ability to find "orphaned" and "lost and found" files. These "orphan" are files which are found on the nodes but not registered in the Distributed File System.

Found File
A found file has partial file parts on disk that are not referenced in the Dali server. All the file parts are accounted for so they can be added back to the Dali server. They can also be deleted from the cluster, if required.

Orphan File
An orphan file has partial file parts on disk. However, a full set of parts is not available to construct a complete logical file. These partial file parts, therefore, do not have a reference in the Dali server.

Lost File
A logical file that is missing at least one file part on both the primary and replicated locations in storage. The logical file is still referenced in the Dali server. Deleting the file removes the reference from the Dali server and any remaining parts on disk.

On a large system, we suggest limiting the number of users who can Generate XREF reports by setting DfuXrefAccess access to FULL for only those users.

To generate a list:

- Press the **Generate** button.

Sasha Server typically runs Xref at the times scheduled when deployed.

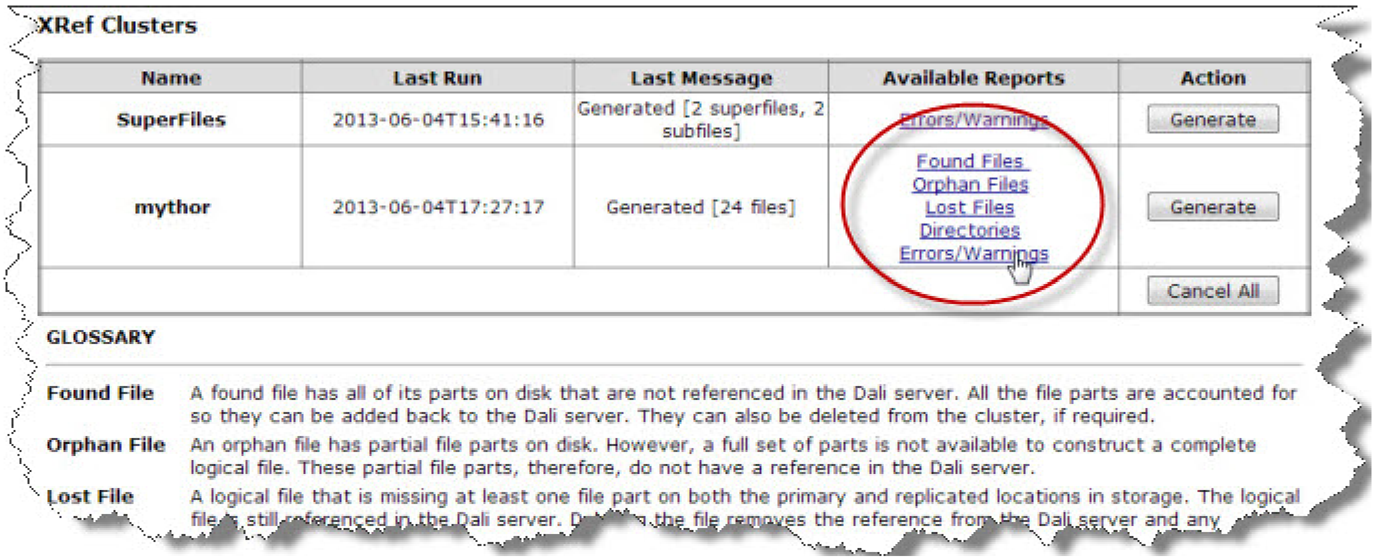
To view results:

- Click on one of the hyperlinks (Found Files, Orphan Files, Lost Files, Directories, or Errors/Warnings).

Working with XREF results:

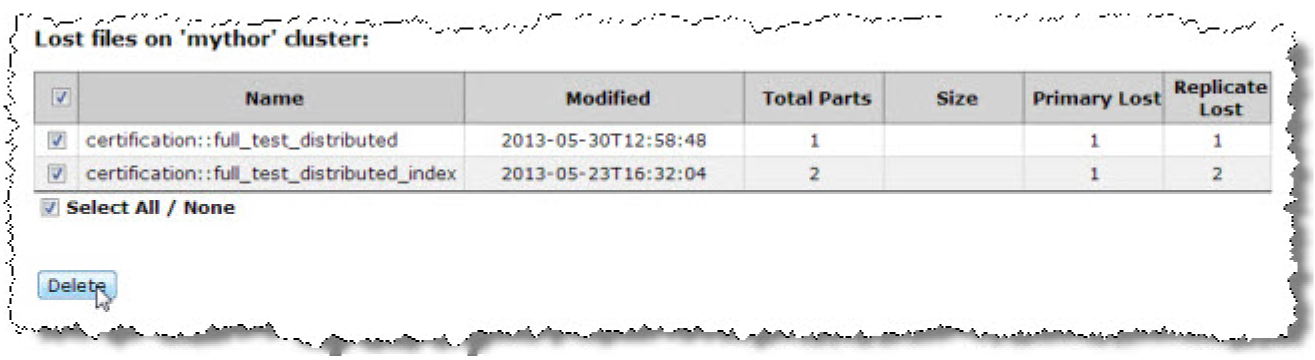
After XRef completes you will see a list of available reports. Click on one of the links to see the results page of each type.

Figure 60. XRef Errors



The Orphan and Lost Files pages list any Orphan or Lost files. Orphan and Lost files are difficult to recover, unless you have copies of missing parts needed to reconstruct the file (for example, if a missing part is on a hard drive that was replaced.)

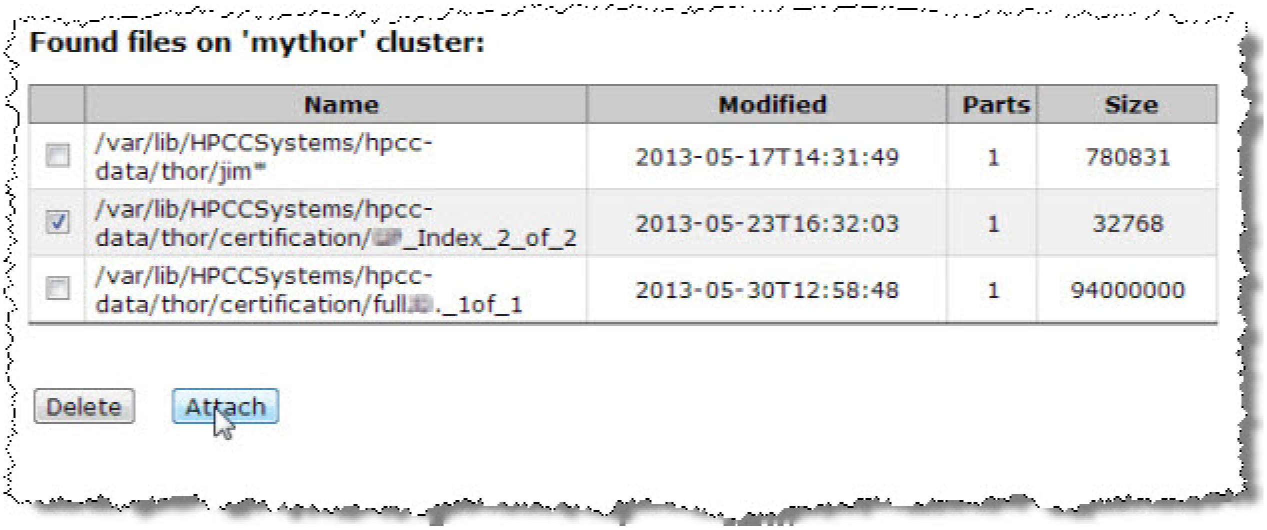
Figure 61. XRef: Delete Lost Files



Typically, these files are deleted. To Delete, check the boxes next to files you want to delete, then press the Delete button.

Found files can and usually are reattached.

Figure 62. XRef: Attach Found Files



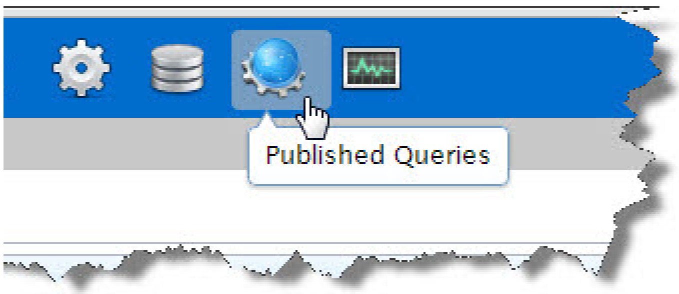
Check the boxes next to files you want to reattach, then press the Attach button.

Queries

The link for the Published Queries (icon) header provides more information and details about queries on available targets.

Click on the Published Queries (icon) hyperlink to display the published queries and package maps on that cluster.

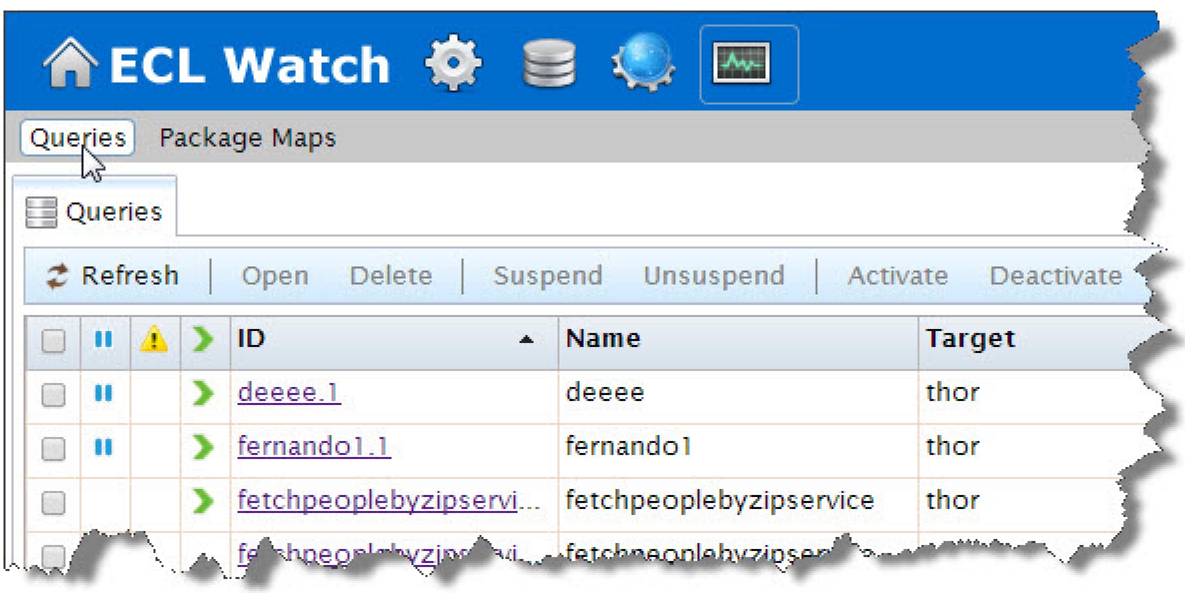
Figure 63. Query Link



Queries Page in ECL Watch

The Queries page lists published queries for each target cluster. On this page you can see the published queries . You can also perform some actions on the selected queries.

Figure 64. Browse Query Sets



The Queries interface provides some information at a glance, there are three columns on the left side of each listed query. These three columns provide information about these queries.

	Indicates a paused query
	Indicates an activated query
	Indicates a query suspended by the system

The queries page also provides other information at a glance:

- the query ID
- the query name
- the target
- the workunit id (WUID)
- the dll
- Published by

All the above available at a glance on the main queries page, with further actions that can be performed from the action buttons along the top of the tab. You can sort a column by clicking on the column heading. Click once for ascending, click again to toggle to descending. The direction of the arrow indicates the sort order.

To see the details page for a particular query, or to perform some action on it you must select it. You can select a query or queries by checking the check box. You can also open a particular query by double clicking on it.

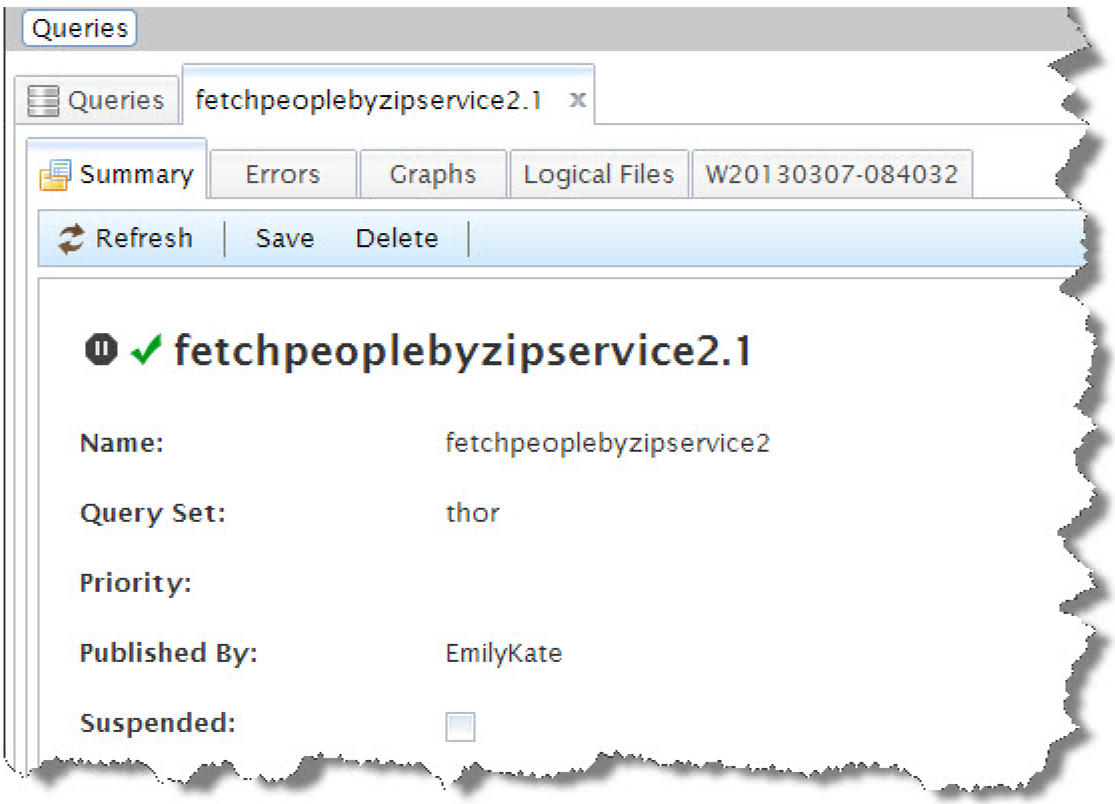
Query Details

To examine the Query Details page, you select and open the query or queries. This opens a tab containing the query details. From the query details page you can get more information about the specific query. You can also perform some actions on that query. There are several tabs with additional information about the selected query.

Query Summary Tab

The default query tab opened when you select a query is the Summary tab. The summary tab shows you some detail information about the query.

Figure 65. Query detail page



There are a few actions that you can perform on the query from this tab. Press the action buttons for the desired activity for the selected query.

Refresh Refreshes the information displayed for the selected query.

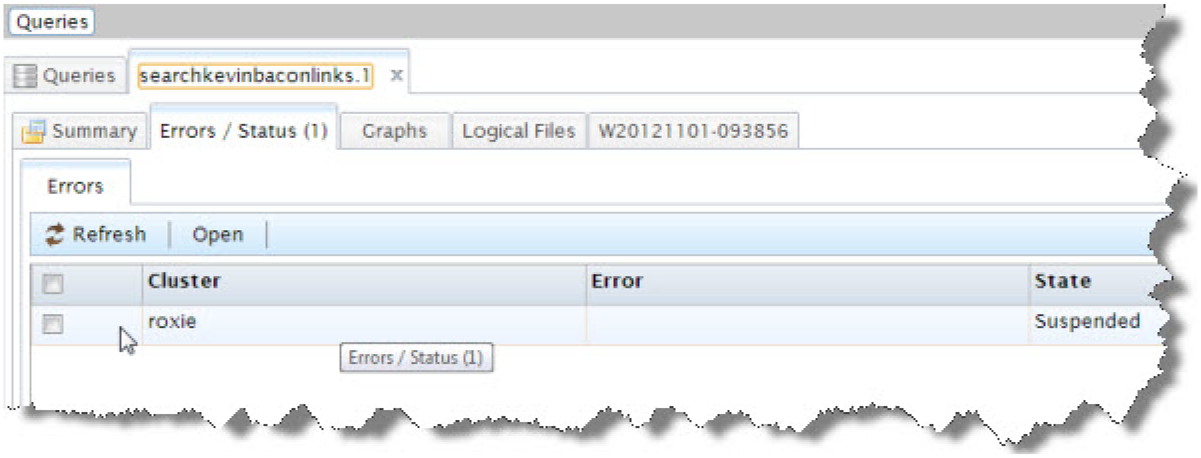
Save Saves the selected query (or queries).

Delete Deletes the selected query (or queries).

Errors Tab

For each selected query there is an Errors tab. The Errors tab displays any errors that may have been encountered during the compiling and publishing of that query. If there aren't any errors the errors tab will be blank. If there are errors, you can further examine any specific error by checking the box and selecting it, and then press the open action button. You could also just double click on the selected error.

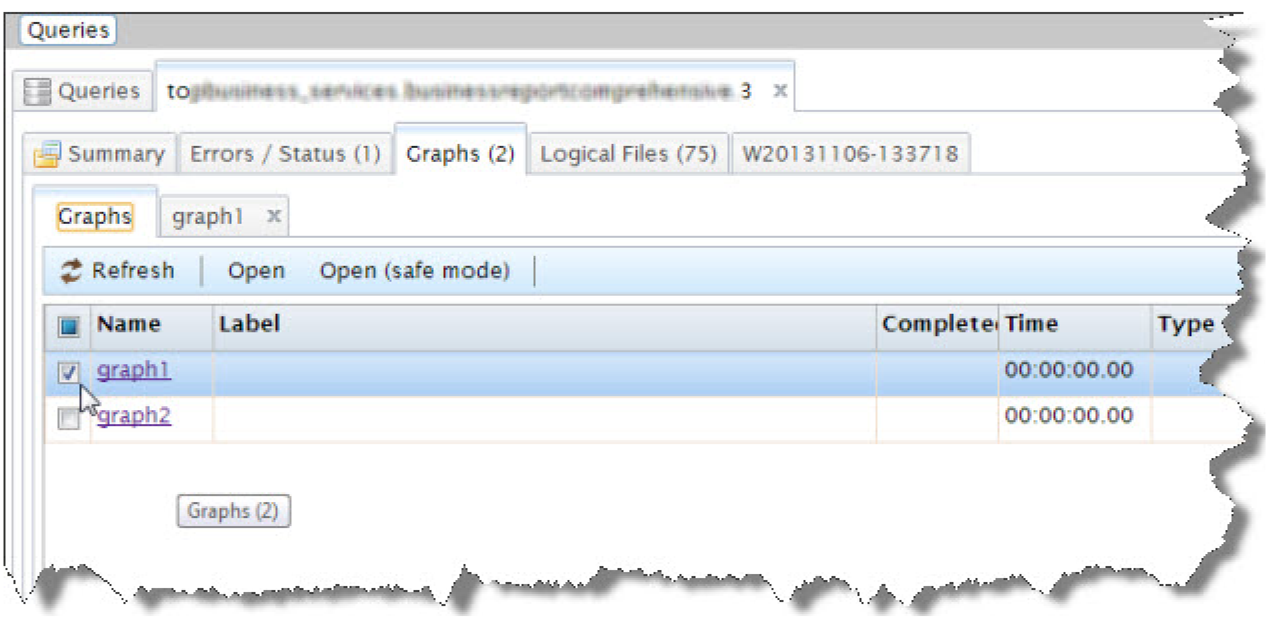
Figure 66. Query Error



Graphs Tab

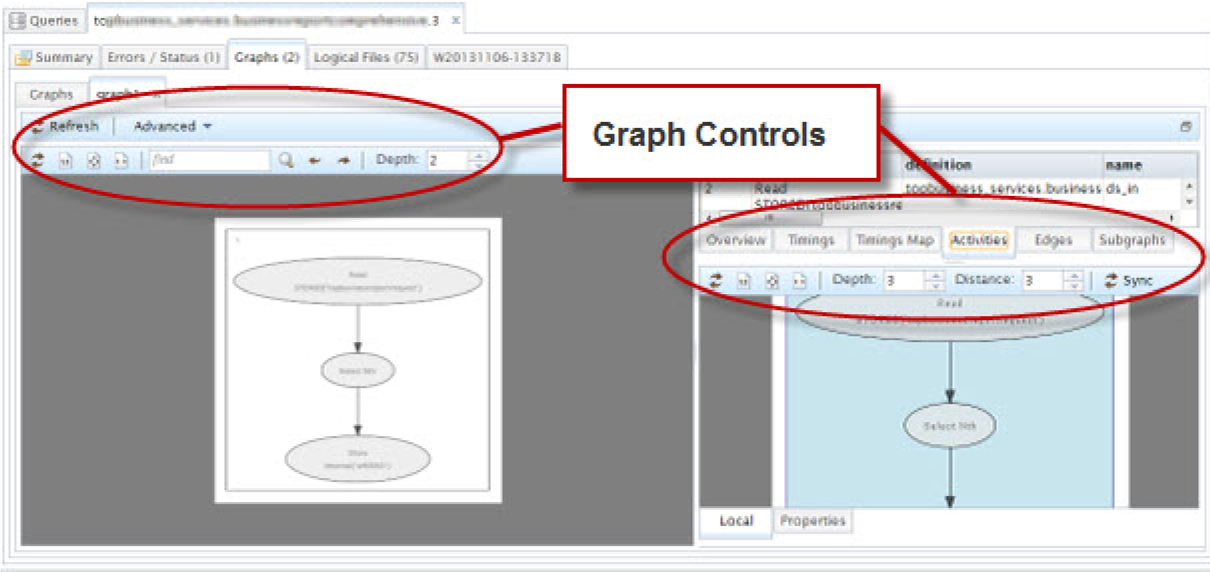
The graphs tab provides access to graphical interpretations of the query. This can be helpful in visualizing how the query ran. The graphs tab displays a list of any graphs generated by the selected query, along with some additional information like timing. To display a specific graph, you must select it, and choose to open it, or you can double click on listed graph.

Figure 67. Graphs list



Opening a graph will open a new tab showing the selected graph(s).

Figure 68. Graphs



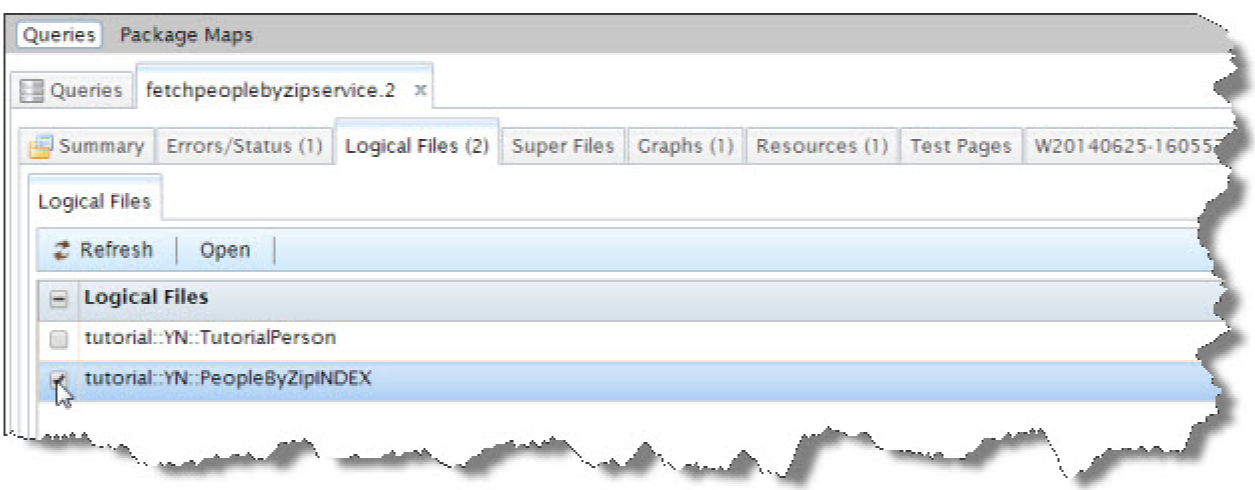
When you open a graph the visible area splits into three smaller sections each displaying some relevant component of the query graph. Notice the myriad of graph controls, and tabs in the border area of each tab. Manipulate these controls to view different aspects of the graphs.

The Advanced action button on the main graph control area, provides access to even more advanced graphing options.

Logical Files Tab

The Published queries details page provides a link to the queries Logical Files tab. The Logical Files tab shows all logical files that are used by the query. To view the logical file details for any file listed, select one or more files by checking the checkbox and press the Open action button. Tabs for each file selected opens where you can view and make changes to the file(s) without the need to go back to the logical files page.

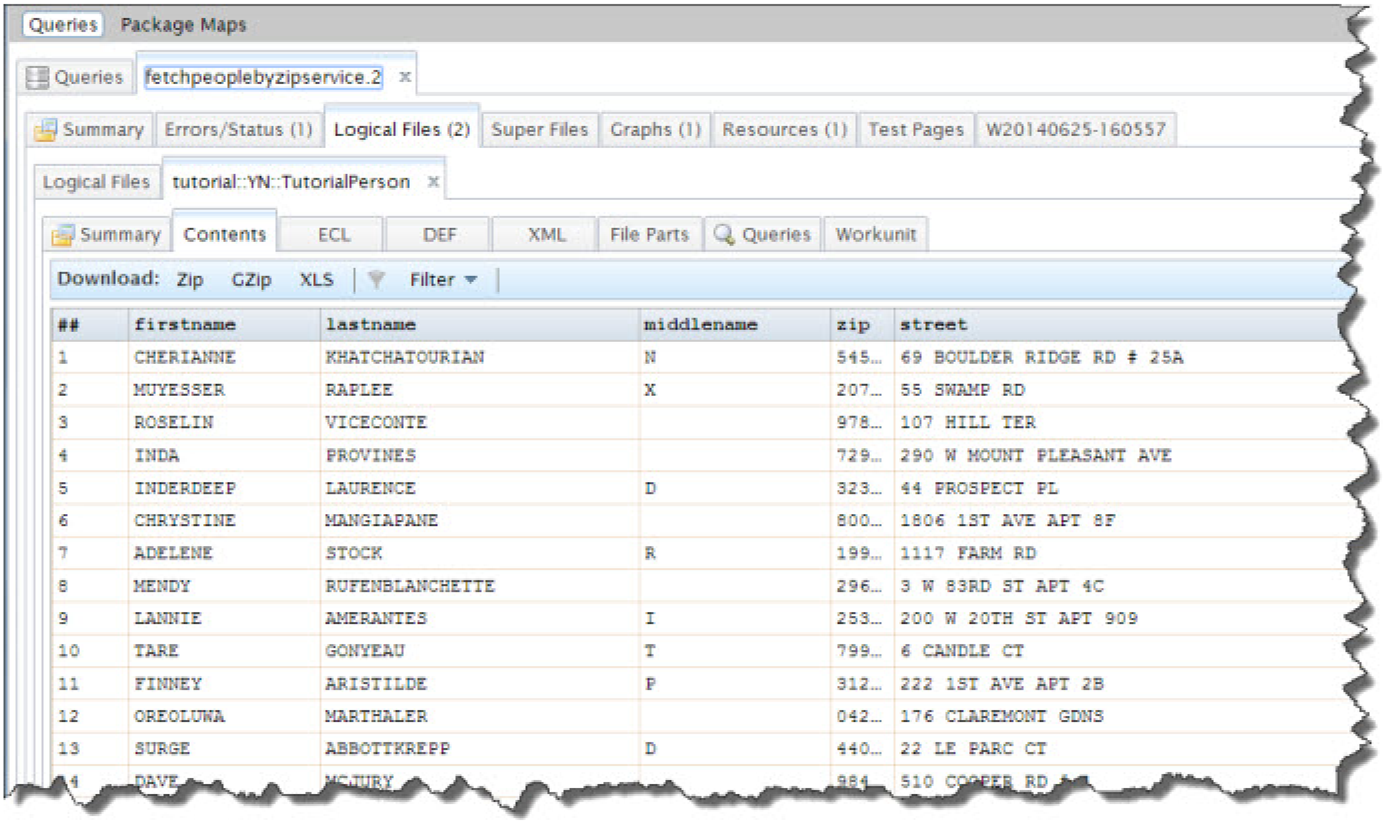
Figure 69. Queries:Logical Files Tab



The above image shows the list of Logical files on the Logical Files tab. To view more detail about a logical file listed here, check the box next to the file, and then press the **Open** action button. You can also just double click on the logical file you want to view.

Once open, you can select any of the tabs to see Summary, Contents, ECL, DEF, XML, File Parts, Queries, or the Workunit.

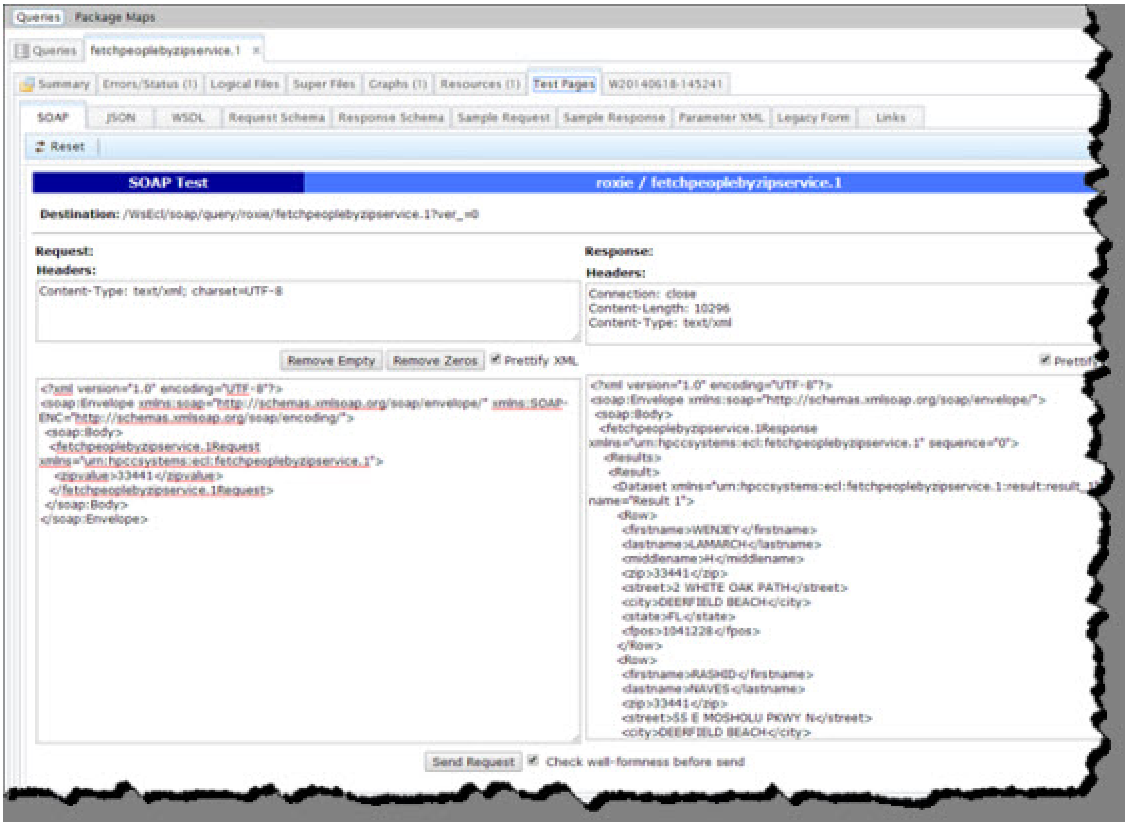
Figure 70. Queries:Logical Files:Contents Tab



Test Pages

The Test Pages tab provides a number of resources you can use to test your query including SOAP/JSON/WSDL and the legacy WS-ECL form, as well as other tabs showing useful information or sample details about the query.

Figure 71. Test Pages tab



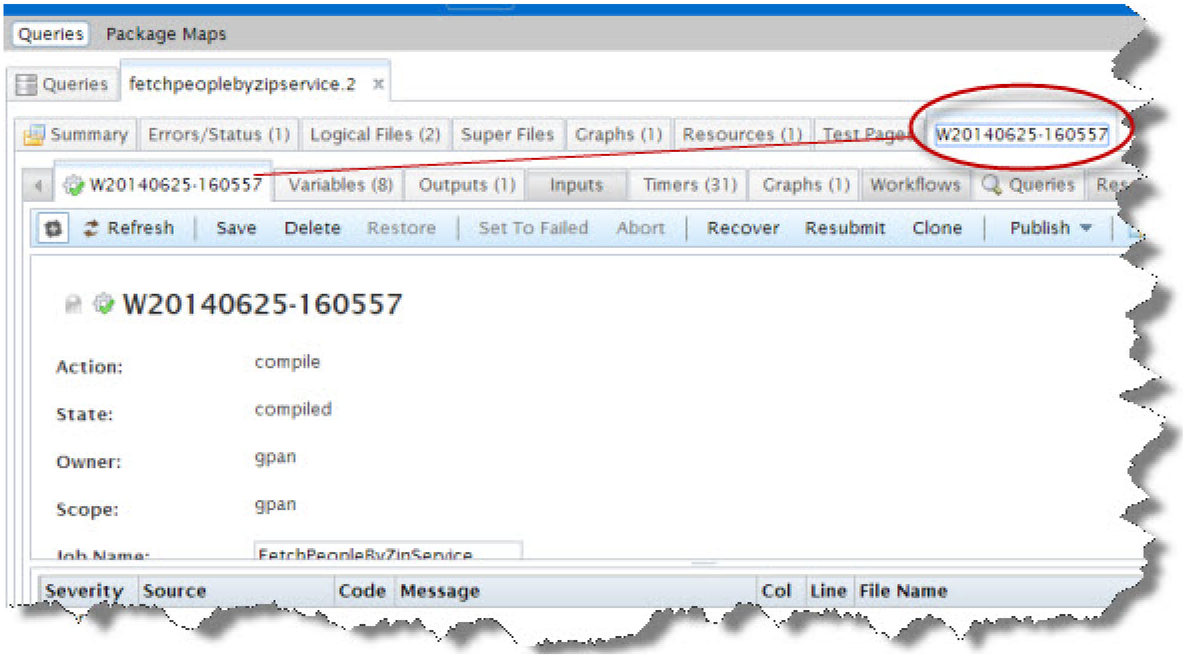
Information available from the Test pages tab.

- **SOAP** This tab provides an interactive interface to submit the query (with input data) and see the response in XML format.
- **JSON** This tab provides an interactive interface to submit the query (with input data) and see the response in JSON format.
- **WSDL** This tab provides a WSDL definition describing the functionality offered by the query (web service).
- **Request Schema** This tab provides a schema in XSD format describing a request for the query (web service).
- **Response Schema** This tab provides a schema in XSD format describing a response from the query (web service).
- **Sample Request** This tab provides a sample request for the query (web service) in XML Format.
- **Sample Response** This tab provides a sample response from the query (web service) in XML Format.
- **Parameter XML** This tab provides Parameterized XML representation of the query interface.
- **Legacy Form** This tab provides a form that can be used to submit a query and get a response. This is similar to the WsECL form.
- **Links** Provides a list of useful links such as: the Form, a sample REST URL, sample request, sample response, parameter XML, SOAP POST, WSDL, XSD, and the result schema.

The Workunits link

The Published queries details page provides a link to to the workunits, page. This tab is a shortcut that takes you to the same workunits tab you can get to through the ECL workunits menu.

Figure 72. Queries Workunit

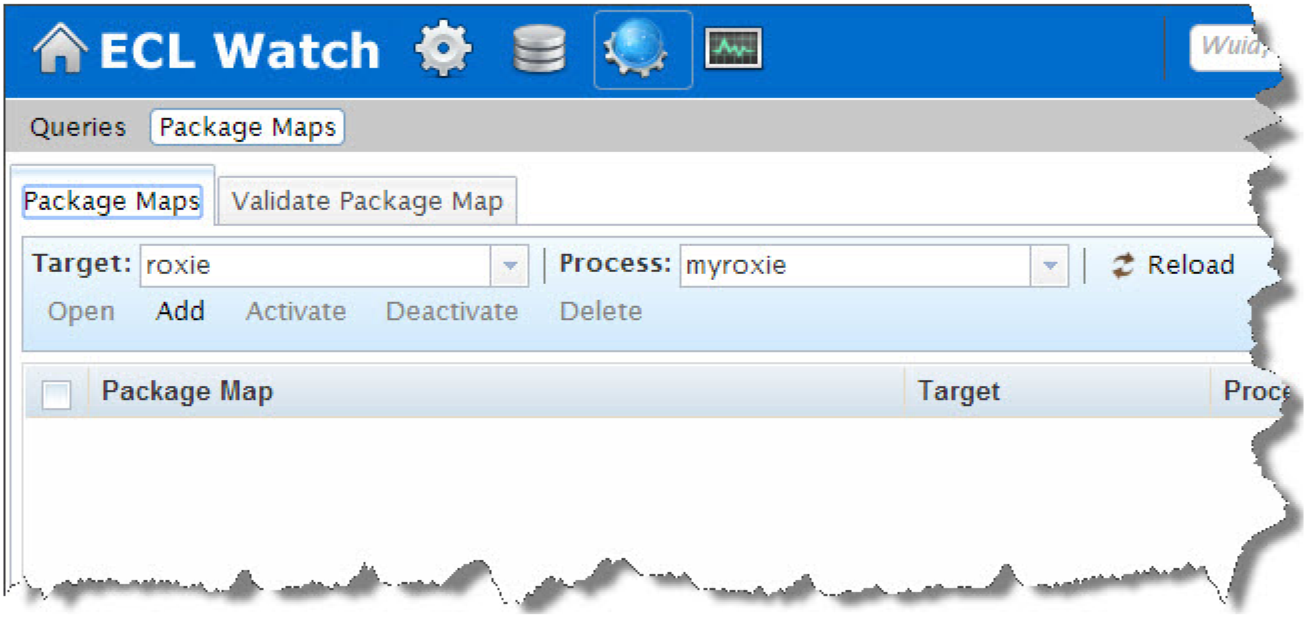


This is the same as the **ECL Workunits** page from the navigation sub-menu Workunits link. You can perform the same operations here. Notice that there are some other familiar tabs here as well, for example the Graphs tab, both from the Queries details page, and from the workunit tab nested here.

Package Maps

From the Queries icon link, you can access the package maps page. Press the **Package Maps** button on the navigation sub-menu bar, to access to the Package Maps on your cluster.

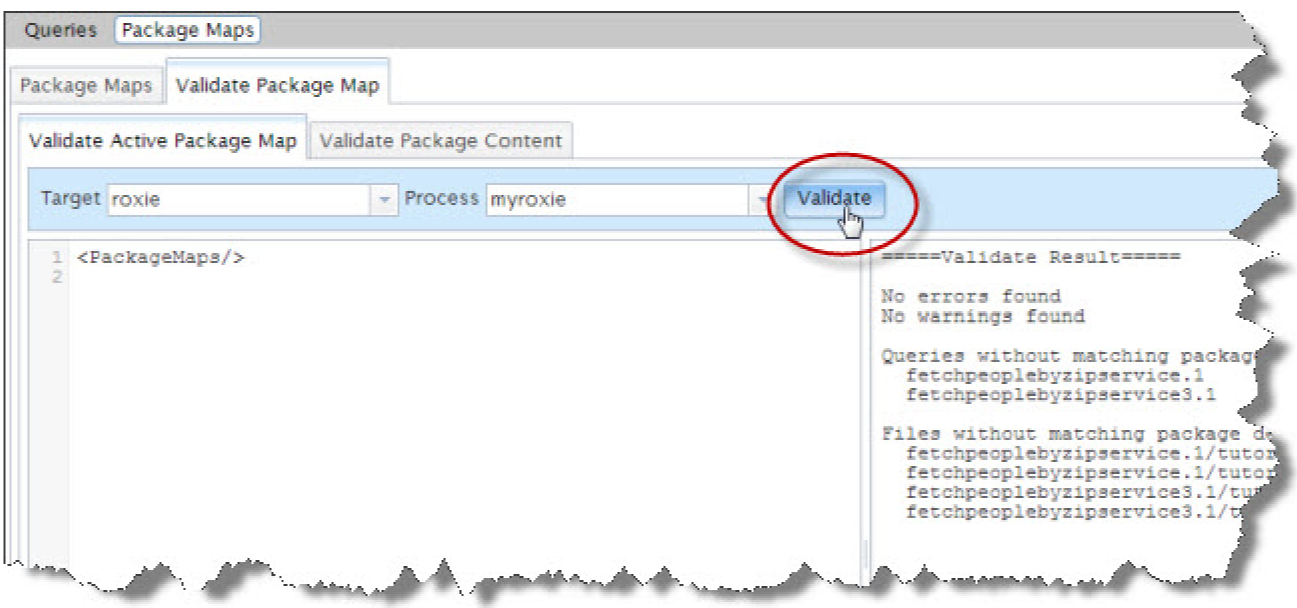
Figure 73. Package Maps



The package maps page, displays all the package maps loaded on your cluster. You can Add, Activate, Deactivate, Delete, or Open a package map. To examine a package map, select a package map from the list.

You can select the **Validate Package Map** tab to validate a package map.

Figure 74. Validate Package Maps



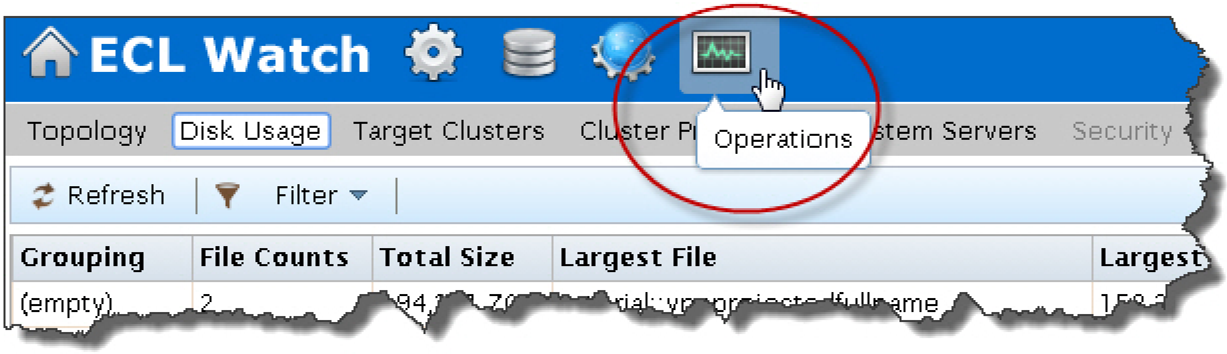
Choose the **Target** and **Process** from the drop lists on the Validate Package Map tab.

Press the **Validate** button to validate the package map. The result is shown on the **Validate Active Package Map** tab. You can also Validate the package content, on the V**alidate Package Content** tab.

Operations

The Operations link provides access to several components useful for the day-to-day operation of your system, and some system administration access as well.

Figure 75. Operations Menu



There are links to Target Clusters, Cluster Processes, and System Servers. These links open pages with more information about the specific topology for the selected clusters. These pages are helpful in certifying that your system is up and running properly.

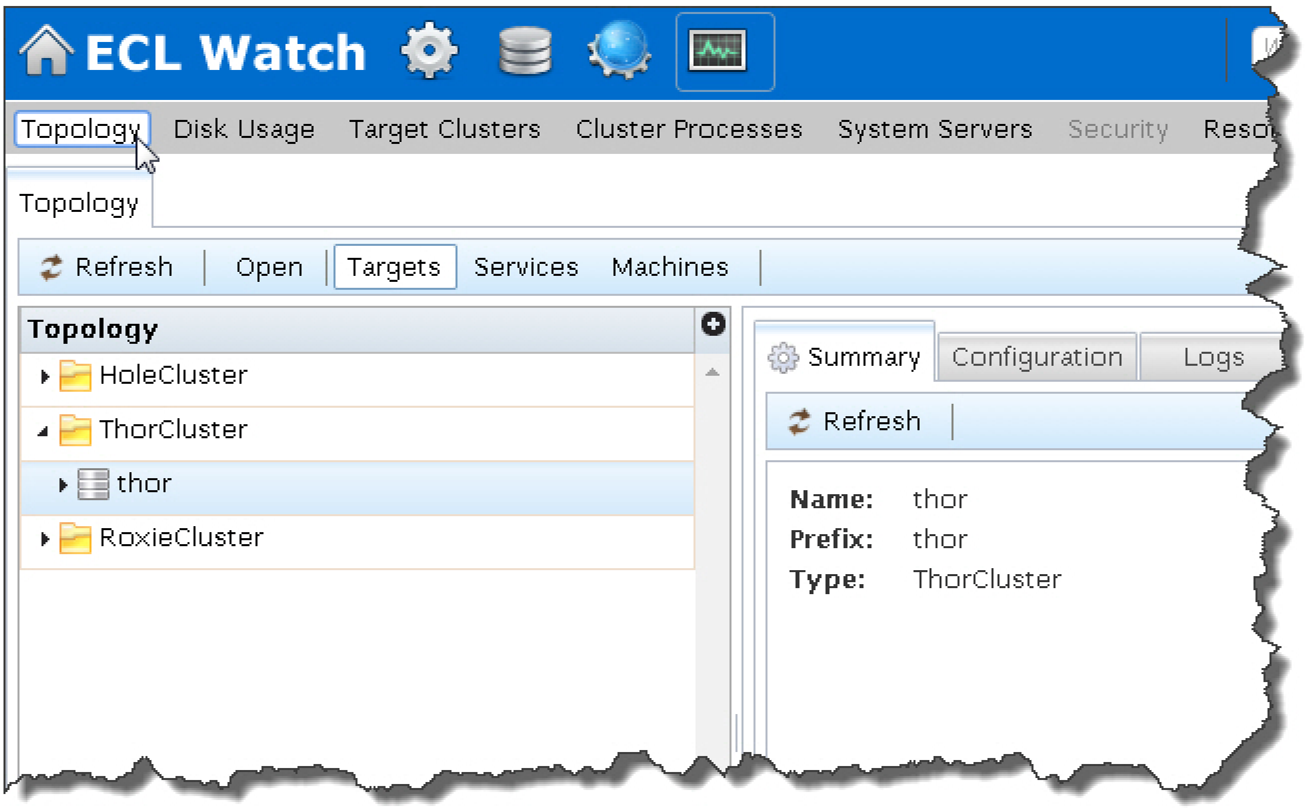
There are also some system administration type links such as, Users, Groups, Permissions, and Resources. These links allow you to perform some system administration tasks through ECL watch.

Topology

The Topology page provides a visual tree display with information about your clusters, services, and nodes.

Click on the **Topology** link from the Operations navigation sub-menu to access the topology page.

Figure 76. Topology Page

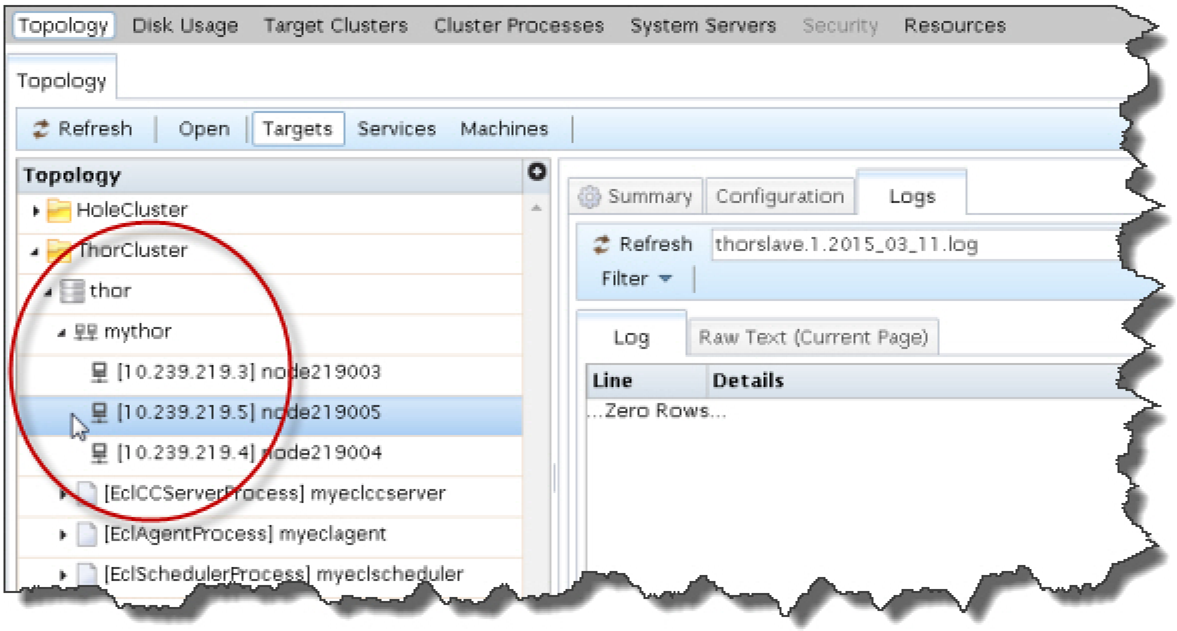


Targets

The **Targets** Action button displays your clusters by type.

Click on the arrow to the left of the Cluster folder/object to expand. The expanded view displays.

Figure 77. Expanded View



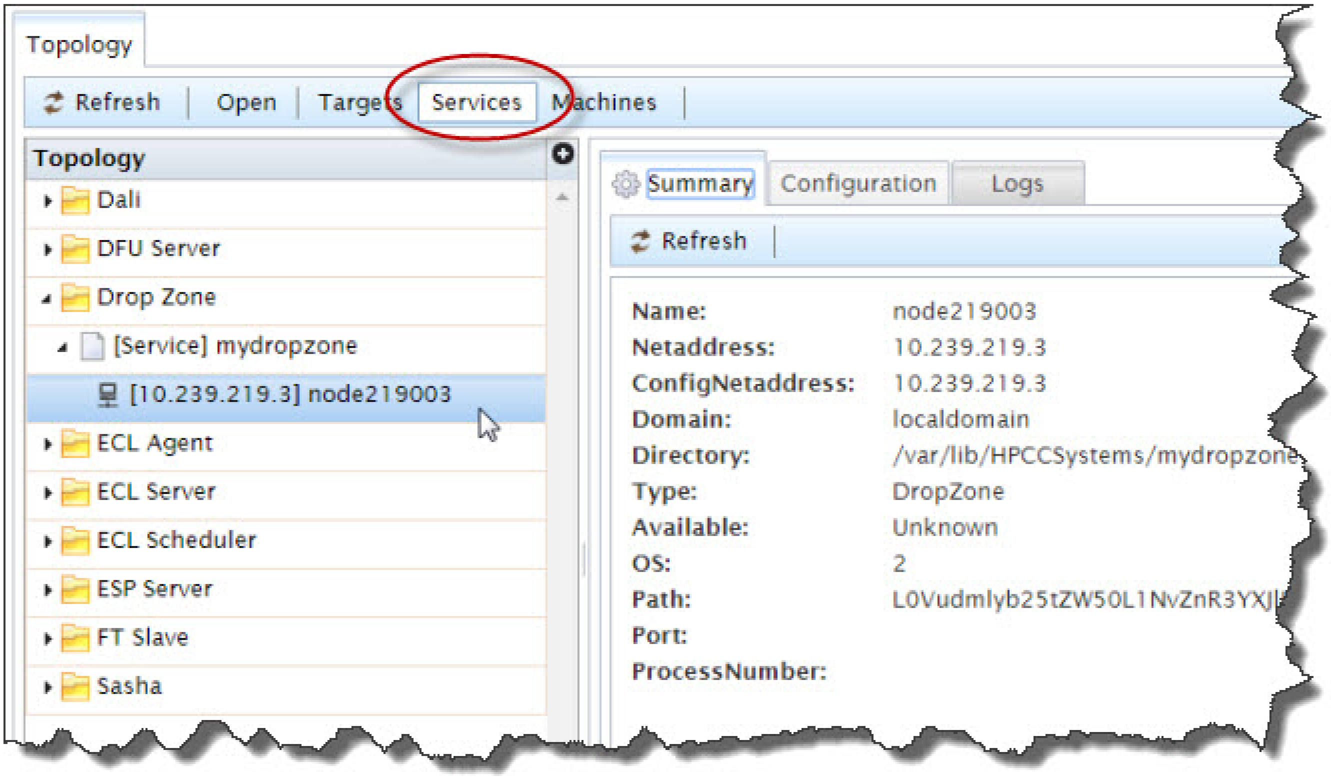
The expanded view displays the objects and nodes in the selected container. Select the node or object to display more information or to access the logs. The Summary, Configuration, and Log tabs on the left side of the page display the relevant information for the selected component.

Services

Press the **Services** Action button to display information on the various services running on your cluster.

Click on the arrow to the left of the service you wish to expand. The expanded view displays.

Figure 78. Expanded Services

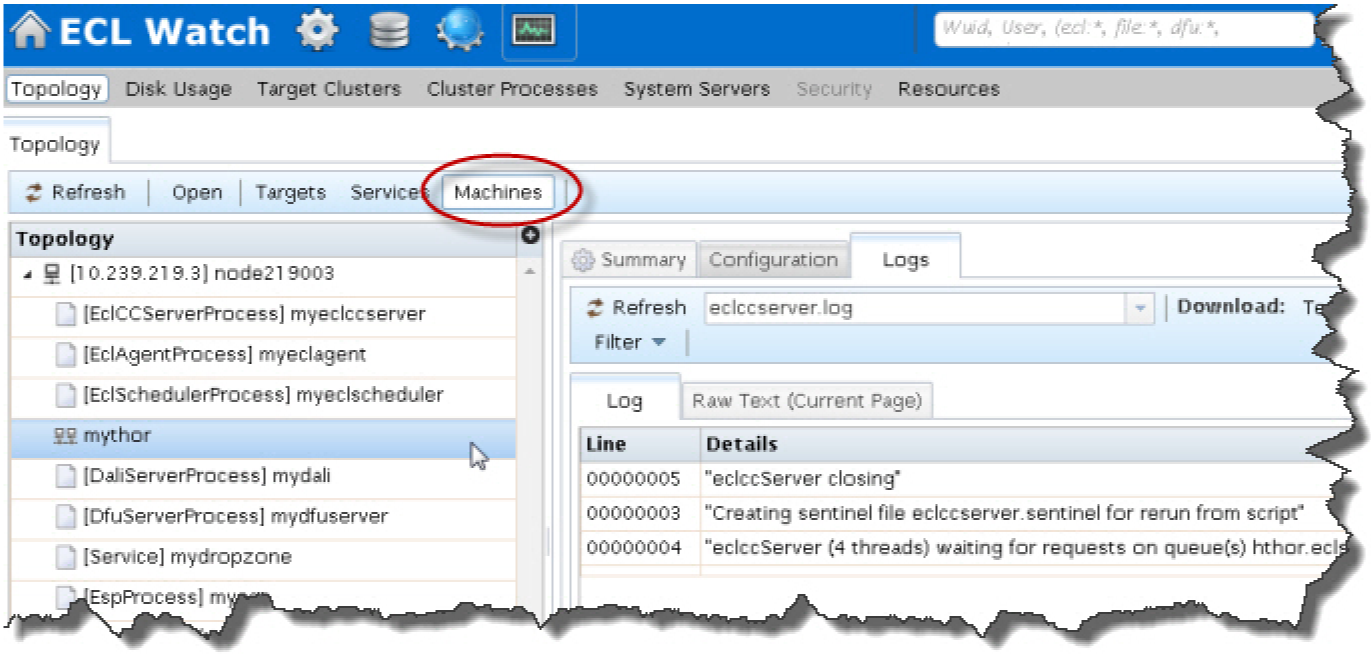


The services view provides a service oriented tree view that provides access to the services. Expand the tree, and select the component to view the Summary, Configuration, or Logs tabs for the selected component.

Machines

Press the **Machines** Action button for more information on the various machines or nodes running in your cluster(s).

Figure 79. Machines View

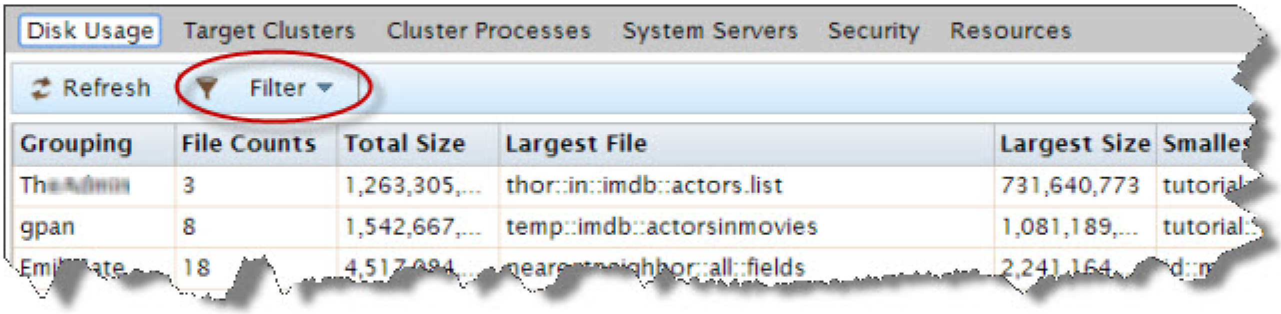


The **Machines** action button opens a node oriented view of the tree. Expand the nodes to see the services on each node. Select the component to view the Summary, Configuration, or Logs tabs for that selected component.

Disk Usage

When you click on the Operations link, it opens the Disk Usage page by default. The Disk Usage page provides information about the available space on your system, and what is using that space.

Figure 80. Disk Usage

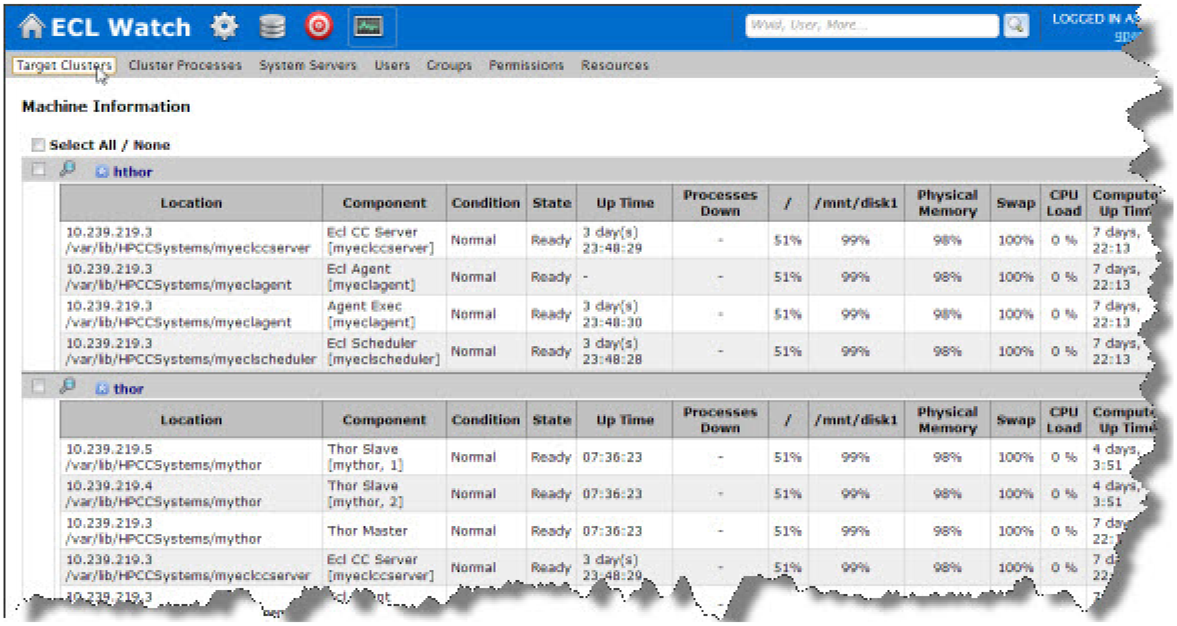


You can search or filter the results, using the **Filter** action button.

Operations: Target Clusters

The Target Clusters link from the navigation sub-menu bar, on the Operations page, opens the link to the Target Clusters page. This page provides machine information on the clusters you have set up on your machine.

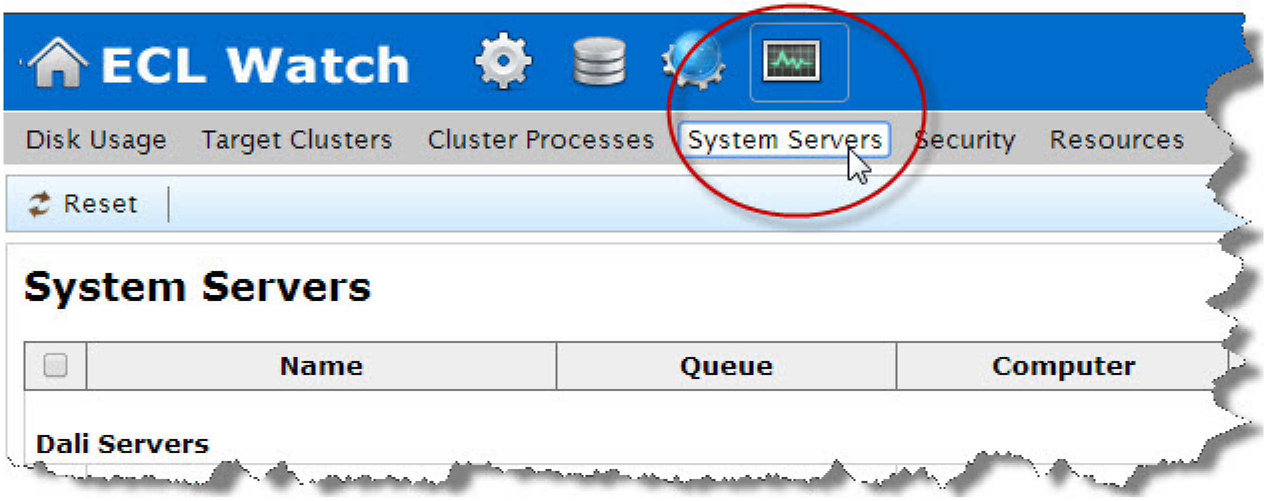
Figure 81. Target Clusters



Preflight System Servers

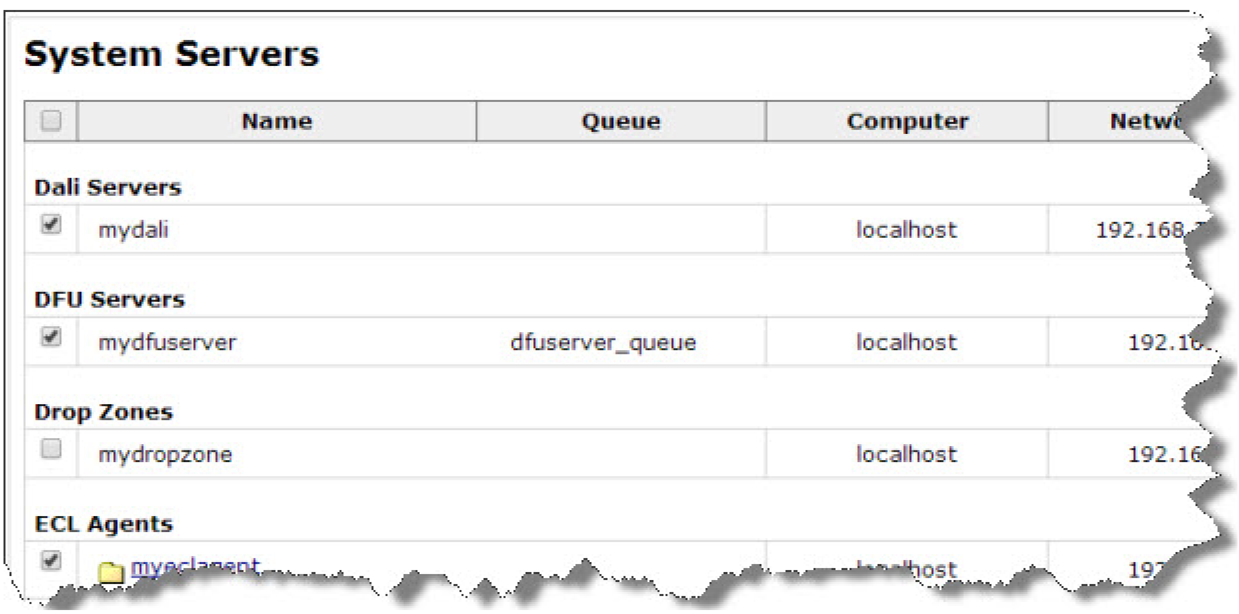
1. Click on the **Operations** icon then click on the **System Servers** link.

Figure 82. System Servers link



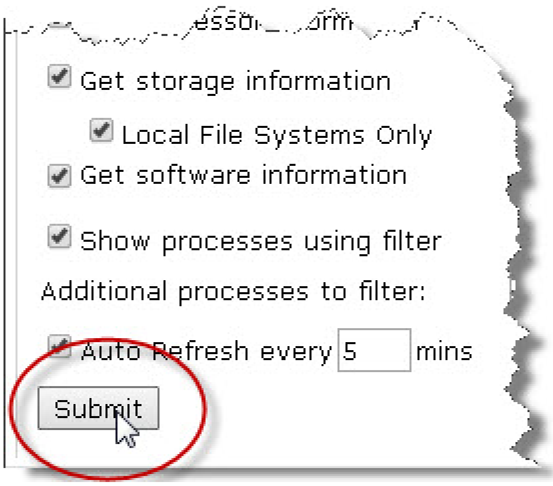
A screen similar to the following displays.

Figure 83. System Servers page



2. Press the **Submit** button at the bottom of this page to start preflight.

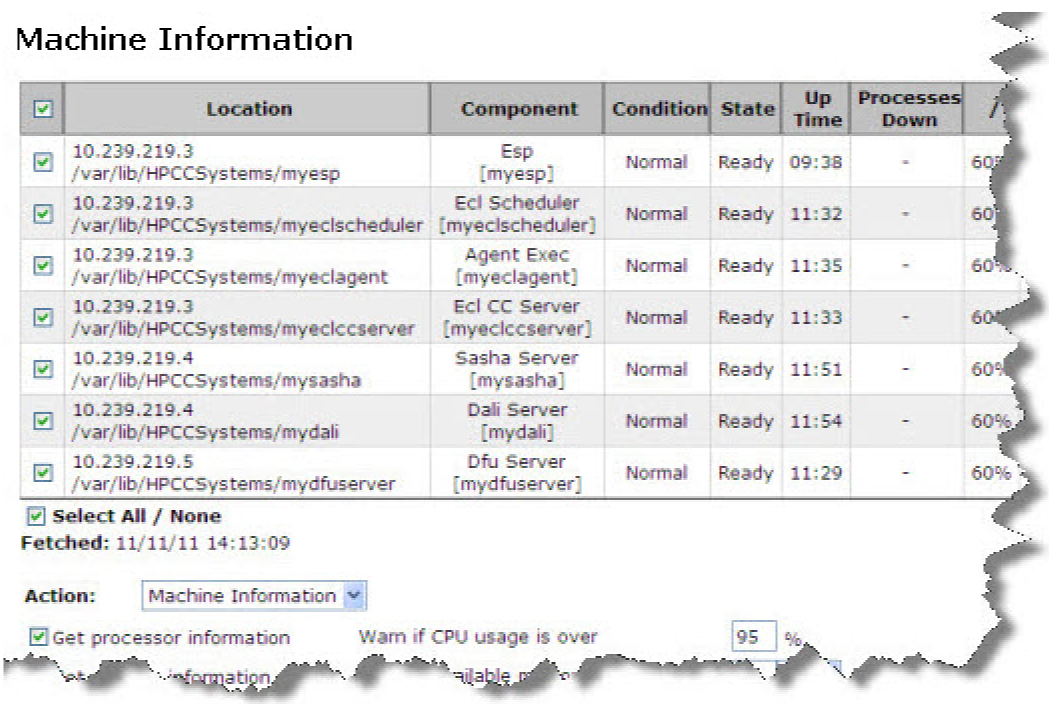
Figure 84. Submit



EXPECTED RESULTS:

After pressing Submit, a screen similar to the following displays.

Figure 85. System Component Inforamtion

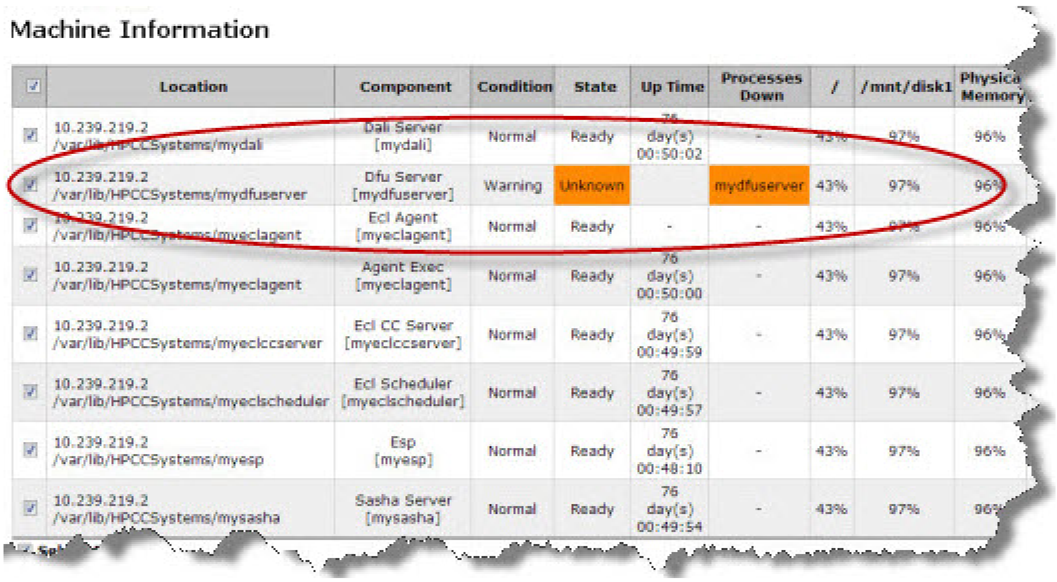


☑	Location	Component	Condition	State	Up Time	Processes Down
☑	10.239.219.3 /var/lib/HPCCSystems/myesp	Esp [myesp]	Normal	Ready	09:38	-
☑	10.239.219.3 /var/lib/HPCCSystems/myeclscheduler	Ecl Scheduler [myeclscheduler]	Normal	Ready	11:32	-
☑	10.239.219.3 /var/lib/HPCCSystems/myeclagent	Agent Exec [myeclagent]	Normal	Ready	11:35	-
☑	10.239.219.3 /var/lib/HPCCSystems/myeclccserver	Ecl CC Server [myeclccserver]	Normal	Ready	11:33	-
☑	10.239.219.4 /var/lib/HPCCSystems/mysasha	Sasha Server [mysasha]	Normal	Ready	11:51	-
☑	10.239.219.4 /var/lib/HPCCSystems/mydali	Dali Server [mydali]	Normal	Ready	11:54	-
☑	10.239.219.5 /var/lib/HPCCSystems/mydfuserver	Dfu Server [mydfuserver]	Normal	Ready	11:29	-

This screen displays information on several system components. This information indicates whether several components are actually up and running appropriately. The resulting page shows useful information about each component. The component name, the condition, the component state, how long the component has been up and running, the amount of disk usage, memory usage and other information is available at a glance.

If there are any failed components, they are highlighted in orange, indicating they are not ready.

Figure 86. Failed Component

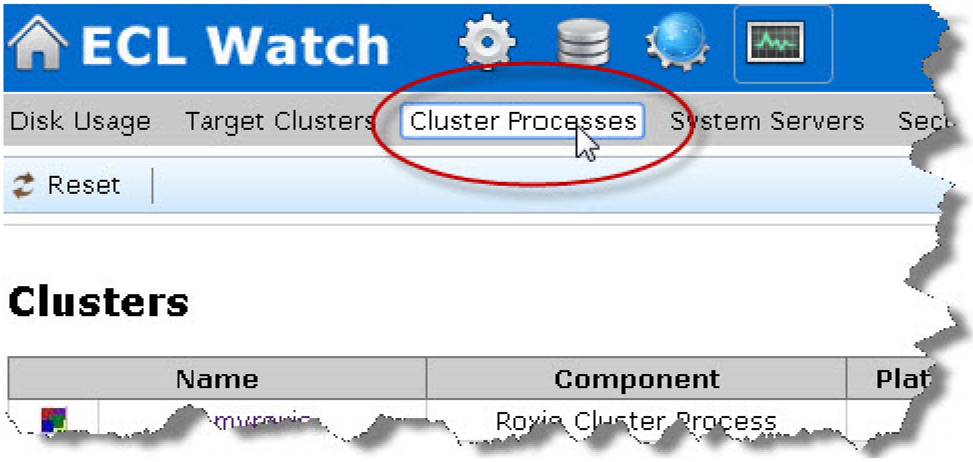

Machine Information

	Location	Component	Condition	State	Up Time	Processes Down	/	/mnt/disk1	Physica Memory
☑	10.239.219.2 /var/lib/HPCCSystems/mydali	Dali Server [mydali]	Normal	Ready	76 day(s) 00:50:02	-	43%	97%	96%
☑	10.239.219.2 /var/lib/HPCCSystems/mydfuserver	Dfu Server [mydfuserver]	Warning	Unknown		mydfuserver	43%	97%	96%
☑	10.239.219.2 /var/lib/HPCCSystems/myeclagent	Ecl Agent [myeclagent]	Normal	Ready	-	-	43%	97%	96%
☑	10.239.219.2 /var/lib/HPCCSystems/myeclagent	Agent Exec [myeclagent]	Normal	Ready	76 day(s) 00:50:00	-	43%	97%	96%
☑	10.239.219.2 /var/lib/HPCCSystems/myeclccserver	Ecl CC Server [myeclccserver]	Normal	Ready	76 day(s) 00:49:59	-	43%	97%	96%
☑	10.239.219.2 /var/lib/HPCCSystems/myeclscheduler	Ecl Scheduler [myeclscheduler]	Normal	Ready	76 day(s) 00:49:57	-	43%	97%	96%
☑	10.239.219.2 /var/lib/HPCCSystems/myesp	Esp [myesp]	Normal	Ready	76 day(s) 00:48:10	-	43%	97%	96%
☑	10.239.219.2 /var/lib/HPCCSystems/mysasha	Sasha Server [mysasha]	Normal	Ready	76 day(s) 00:49:54	-	43%	97%	96%

Preflight Thor

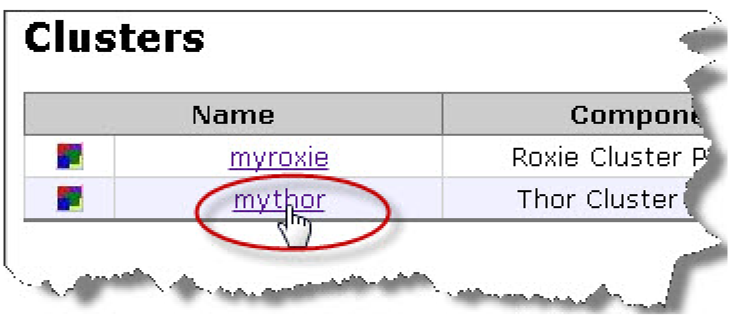
1. Click on the **Operations** icon then click on the **Cluster Processes** link.

Figure 87. Cluster Processes Link



2. Click on the **mythor** link.

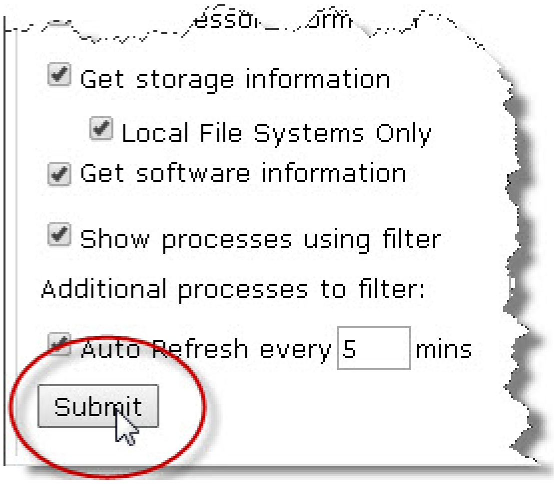
Figure 88. mythor link



3. Check the **Select All** checkbox (if necessary).

4. Press the **Submit** button to start preflight.

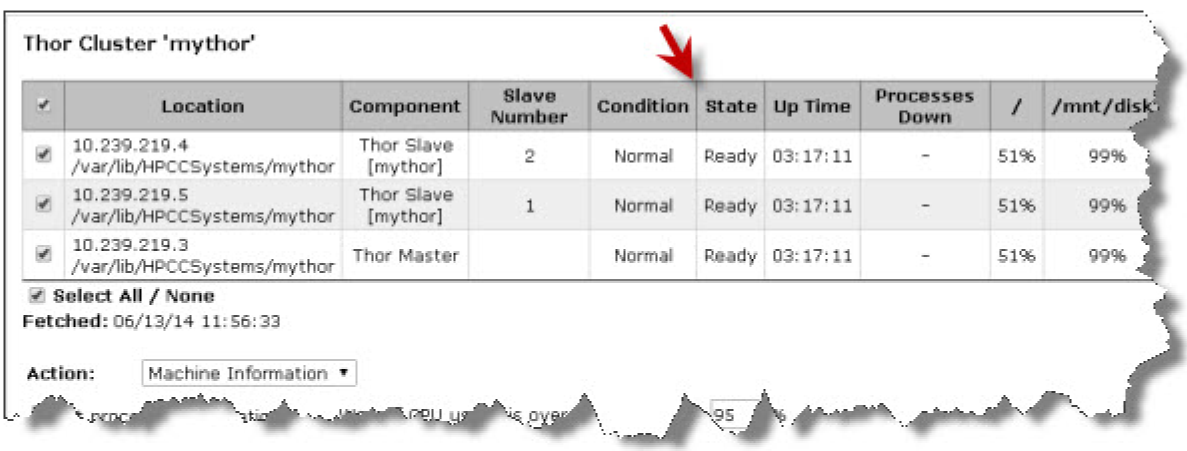
Figure 89. Submit



EXPECTED RESULTS:

After pressing Submit, a screen similar to the following should display.

Figure 90. ESP mythor system component information

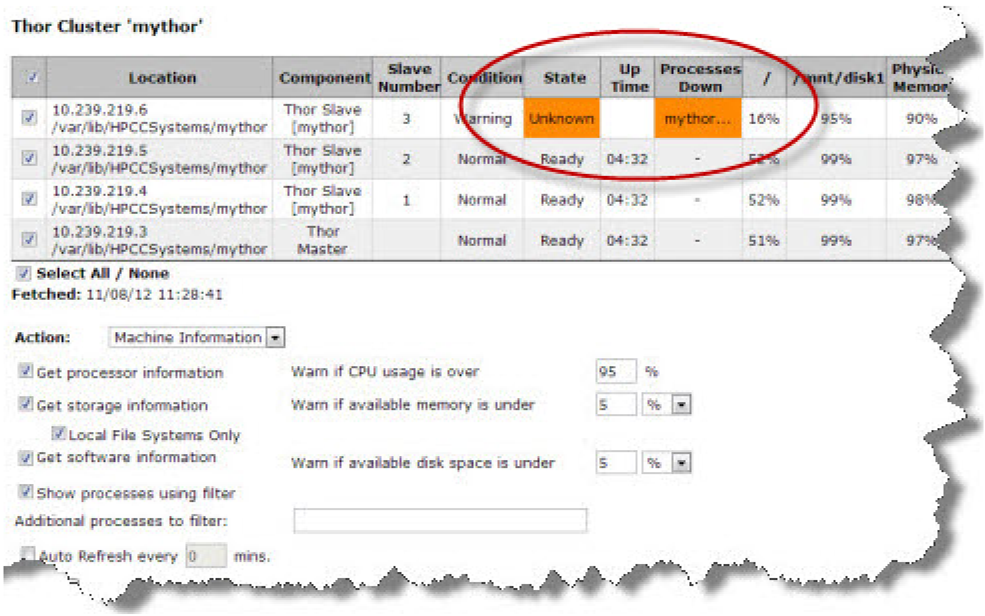


This screen displays information on Thor components. This information indicates whether the components are actually up and running appropriately. The resulting page shows useful information about each component. The component name, the condition, the component state, how long the component has been up and running, the amount of disk usage, memory usage and other information is available at a glance.

	If your system has more than 1 Thor cluster, repeat these steps for each cluster.

If there are any failed components, they are highlighted in orange, indicating they are not ready.

Figure 91. Failed Component



Users Permissions

User Administration

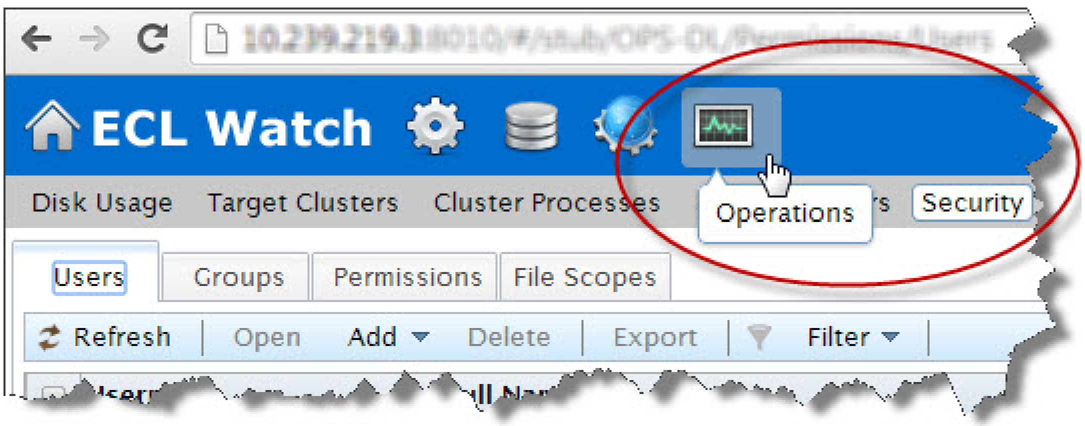
There are User Administration features available through ECL Watch.

Security Administration using ECL Watch

Administrator rights are needed to manage permissions. Once you have administrator access rights, open ECL Watch in your browser using the following URL:

- **http://nnn.nnn.nnn.nnn:pppp(where nnn.nnn.nnn.nnn is your ESP Server's IP Address and pppp is the port. The default port is 8010).** For example: http://10.150.51.27:8010/.

Security administration is controlled using the **Security** area of ECL Watch. To access the Security are click on the- **Operations** icon, then click the **Security** link from the navigation sub-menu.



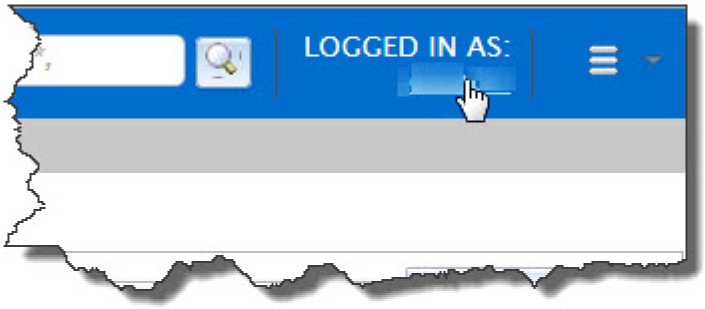
There are three areas where permissions may be set:

- **Users**. Shows all the users currently setup. Use this area to add or delete a user, edit a user's details, set/reset a user's password and view the permissions currently assigned to a user.
- **Groups**. Shows all the groups currently setup. Use this area to add or delete a group, view and edit the members of a group, view and edit the permissions that have been set for a group.
- **Permissions**. Shows the features of the HPCC System where permissions may be set. Use this area to view the permissions currently set for any area of the HPCC System, or to add groups and users and set/modify their permission for a specific feature

⚠	**NOTE:** Use caution when setting any explicit **deny** permission setting. The most restrictive permission always applies.

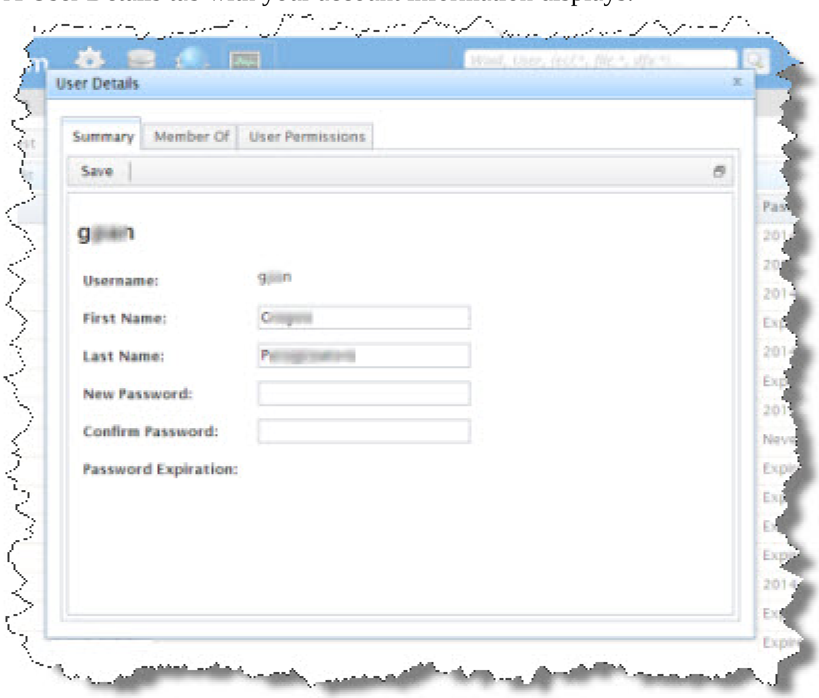
Information about your account

To find out more information about your account, in ECL Watch click on the **Logged In As:** link at the top of the ECL Watch page.



1. Click on the **Logged In As:** link.

   A User Details tab with your account information displays.



2. Confirm the User Name that you are logged in as.

   Note that Administrator rights are needed to manage users and permissions.

   Ensure you are using an account with Administrator rights if you intend to manage users or permissions.

3. Verify the password expiration date, or if password is set to expire.

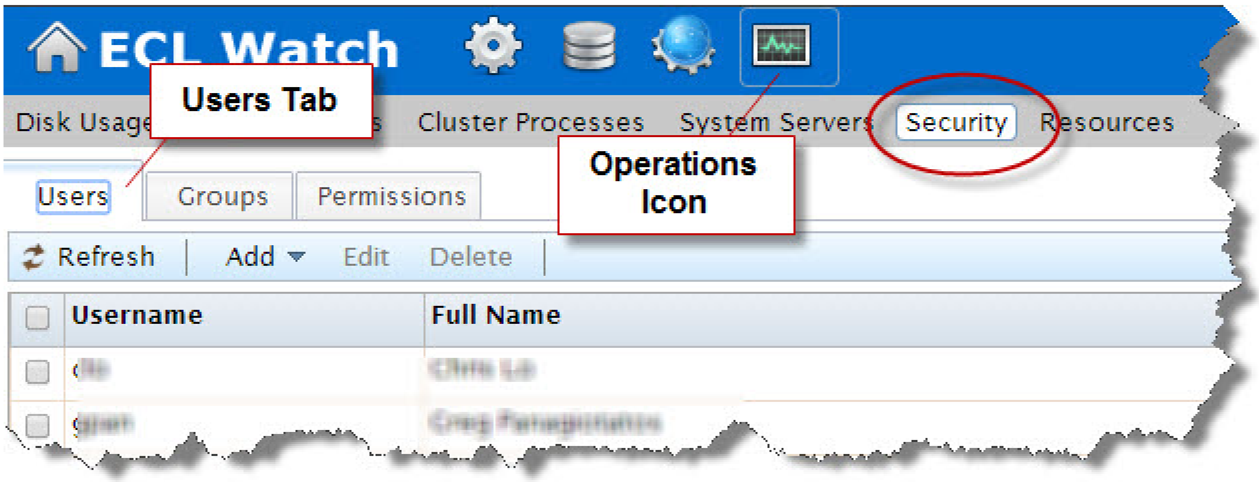
Setting and modifying user permissions

Access to ECL Watch and its features is controlled using a login and password. The **Users** area enables you to control who has access to ECL Watch and the features of your HPCC System to which they have access. Permissions can be set for users based on their individual needs and users can also be added to groups which have already been set up. Use the **Users** menu item to:

- Add a new user (**note**: the username cannot be changed)
- Delete a user
- Add a user to a group
- Change a user's password
- Modify the details/permissions of an individual user

Adding and editing users

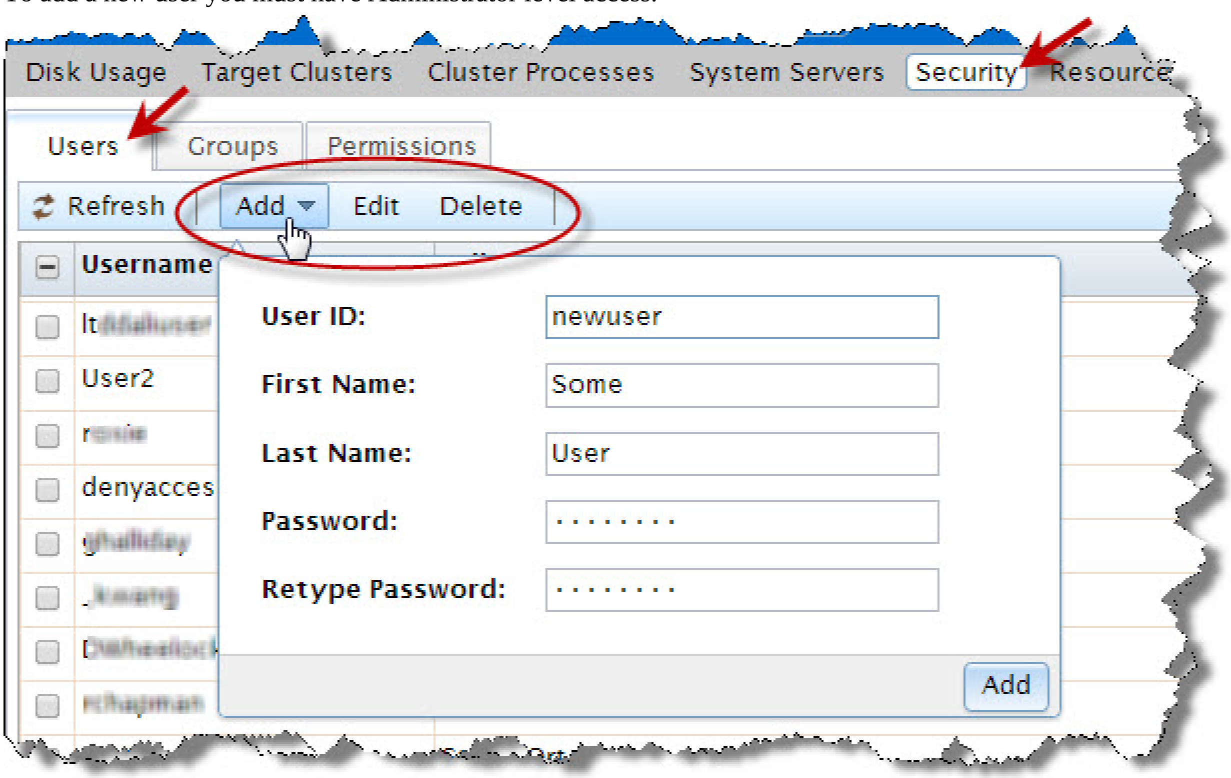
To access the permissions page click on the **Operations** icon, then click the **Security** link from the navigation sub-menu. Click on the **Users** tab to add or edit users.



All current users are identified in the list by their Username and Full Name.

To add a new user to the list of authenticated users:

To add a new user you must have Administrator level access.



1. Press the **Add** button.

   The add user dialog displays.

2. Enter a **Username**.

   This is the login name for using ECL Watch, ECL IDE, WsECL, etc.

3. Enter the **First Name** and **Last Name** of the user.

   This information helps to easily identify the user and is displayed in the **Full Name** field on the main **Users** window.

4. Enter a **Password** for the user and then confirm it in the **Retype Password** field.

5. Press the **Add** button.

   Confirmation of the user request opens a new tab where you can verify the user's information.

6. Press the **Save** button.

Once added, the new user displays in the list and you can modify details and set permissions as required.

To modify a user's details:

Click on the **Operations** icon, then click the **Security** link from the navigation sub-menu.

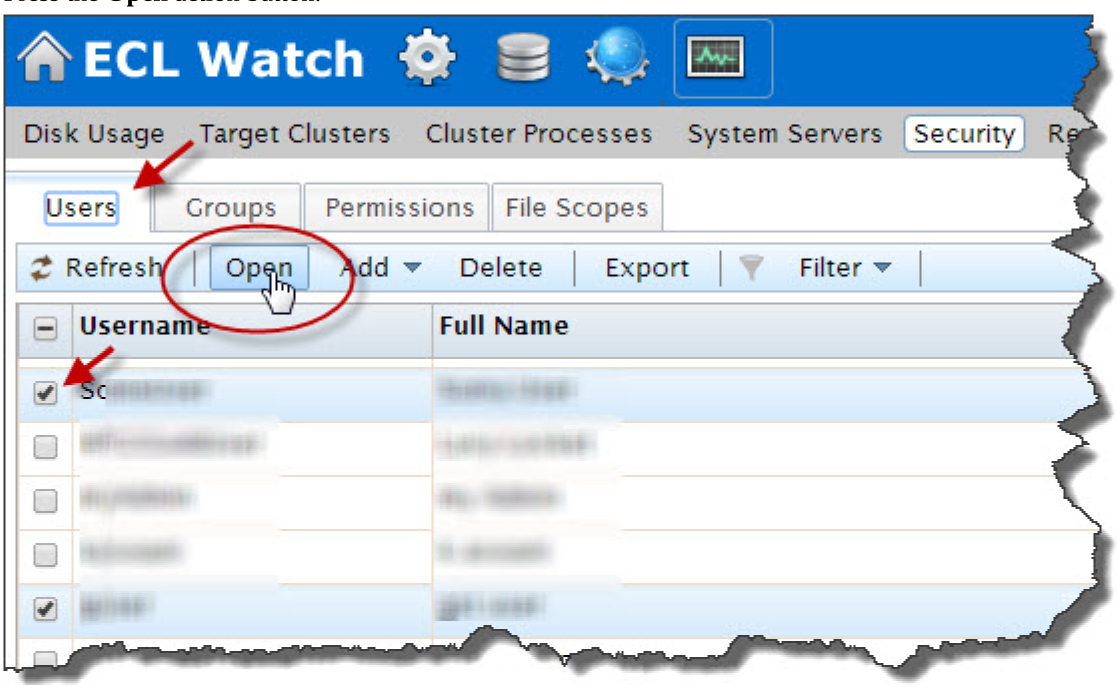
1. Click on the **Users tab**.

   The users display in a list.

2. Select the user (or users) to modify. Check the box next to the Username to select.

   This enables the Users action buttons.

3. Press the **Open** action button.



   A tab opens for each user selected. On that tab there are three sub-tabs.

   The user details are on the **Summary** tab.

4. Modify the user's details as required (if more than one user selected, repeat for each user).

   Note: The **Username** cannot be changed.

5. Press the **Save** button.

   Confirmation message displays.

To add a user to a group:

Click on the **Operations** icon, then click the **Security** link from the navigation sub-menu.

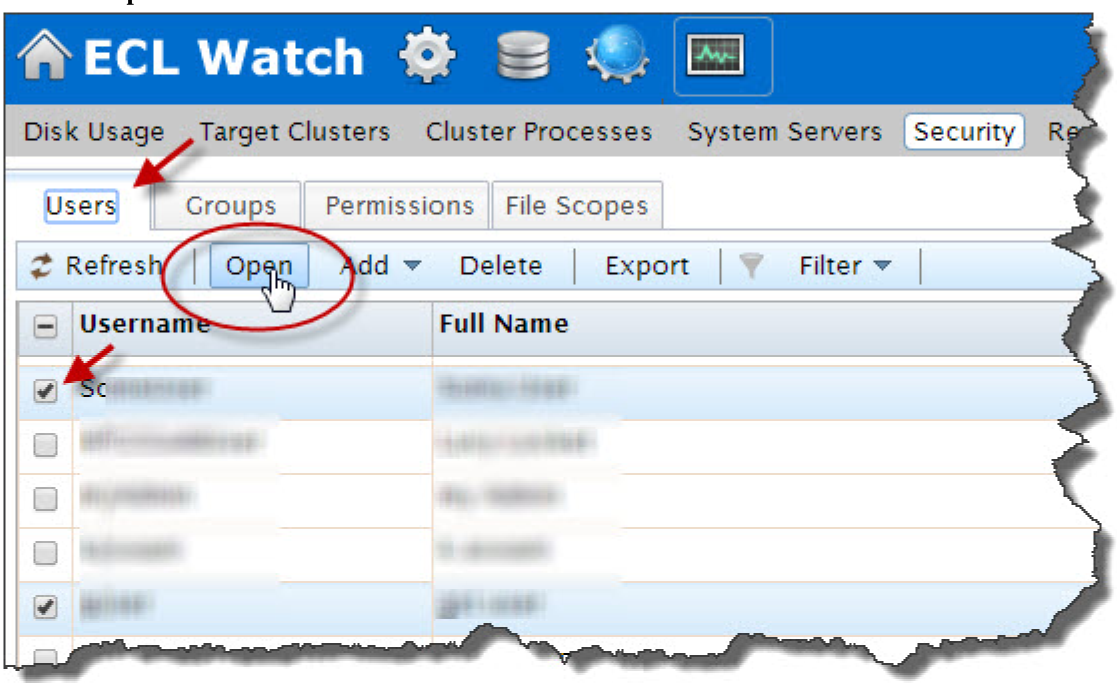
1. Click on the **Users tab**.

   The users display in a list.

2. Select the user (or users) to modify. Check the box next to the Username.

   This enables the user action buttons.

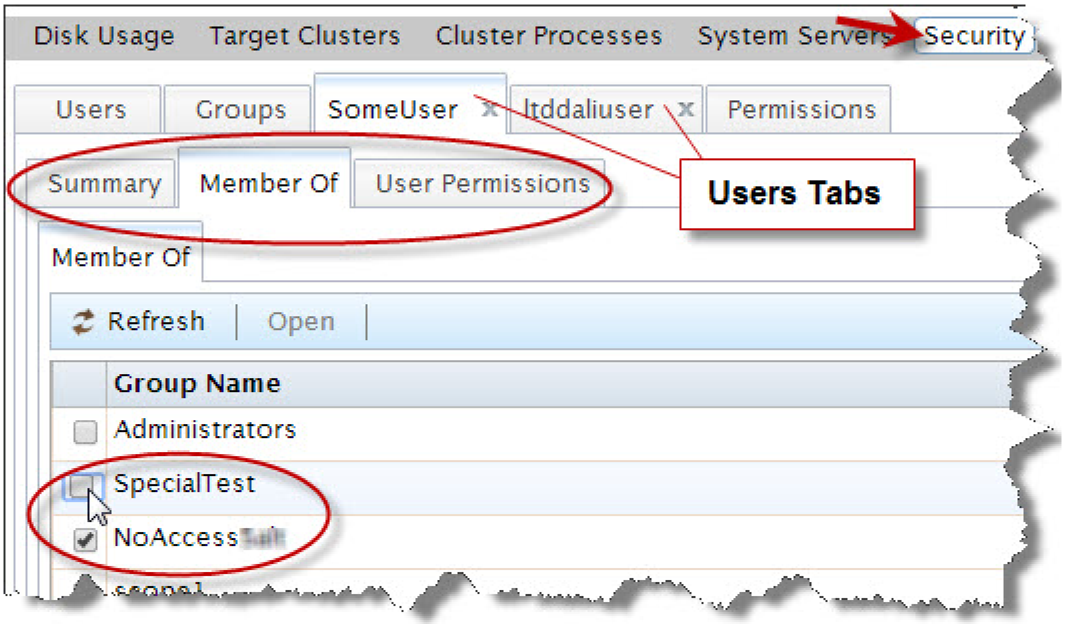
3. Press the **Open** action button.



   A new tab opens for each user selected. On that tab there are three sub-tabs.

4. Click on the tab for the user to modify (if more than one user selected, repeat for each user).

   On the user's tab there are three sub-tabs.



Click on the **Member Of** sub-tab to modify that user's groups.

5. On the **Member Of** tab for that user, a list of the available groups display.

   There is a check in the box next to each group that user belongs to.

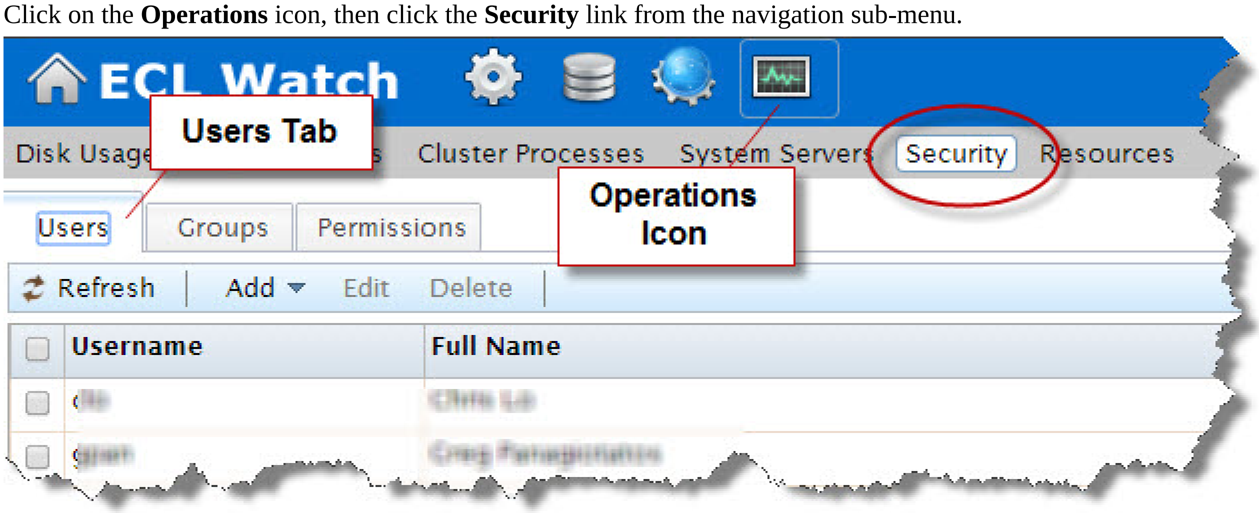
   To add that user to a group, check the box next to the desired group.

6. The changes are automatically saved. Close the tab.

To promote a user to an Administrator

To modify a users credentials you must have Administrator level access. To promote a user to an HPCC Administrator, add the user to the **Administrators** group.

Click on the **Operations** icon, then click the **Security** link from the navigation sub-menu.



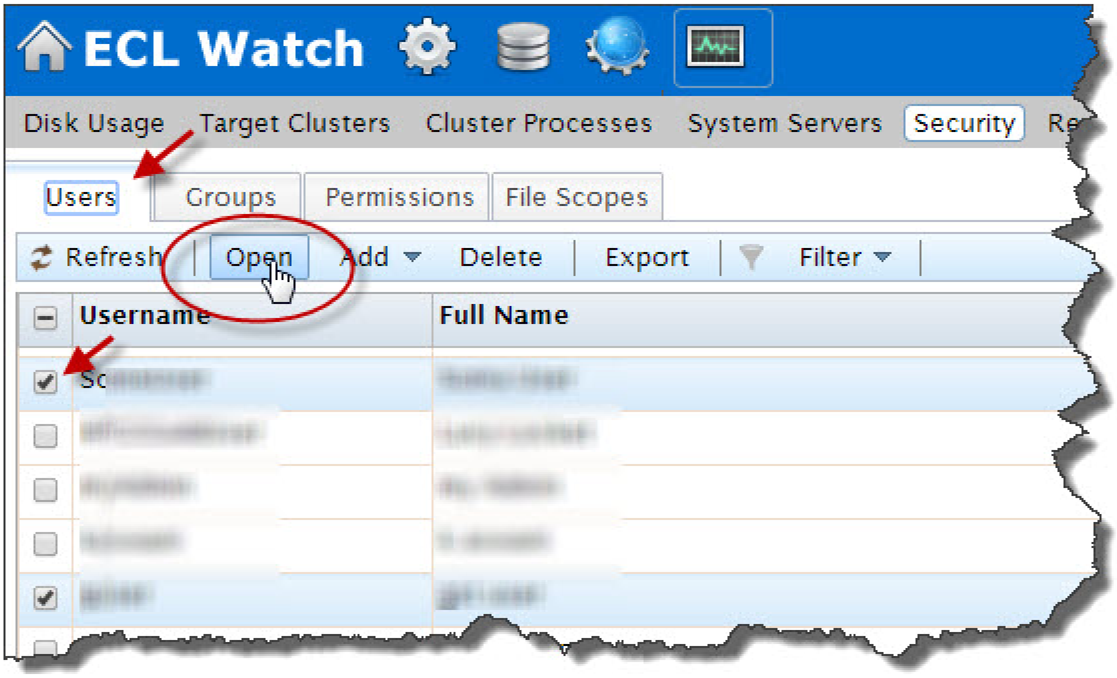
1. Click on the **Users tab**.

The users display in a list.

2. Select the user (or users) to promote. Check the box next to the Username to select.

   This enables the Users action buttons.

3. Press the **Open** action button.

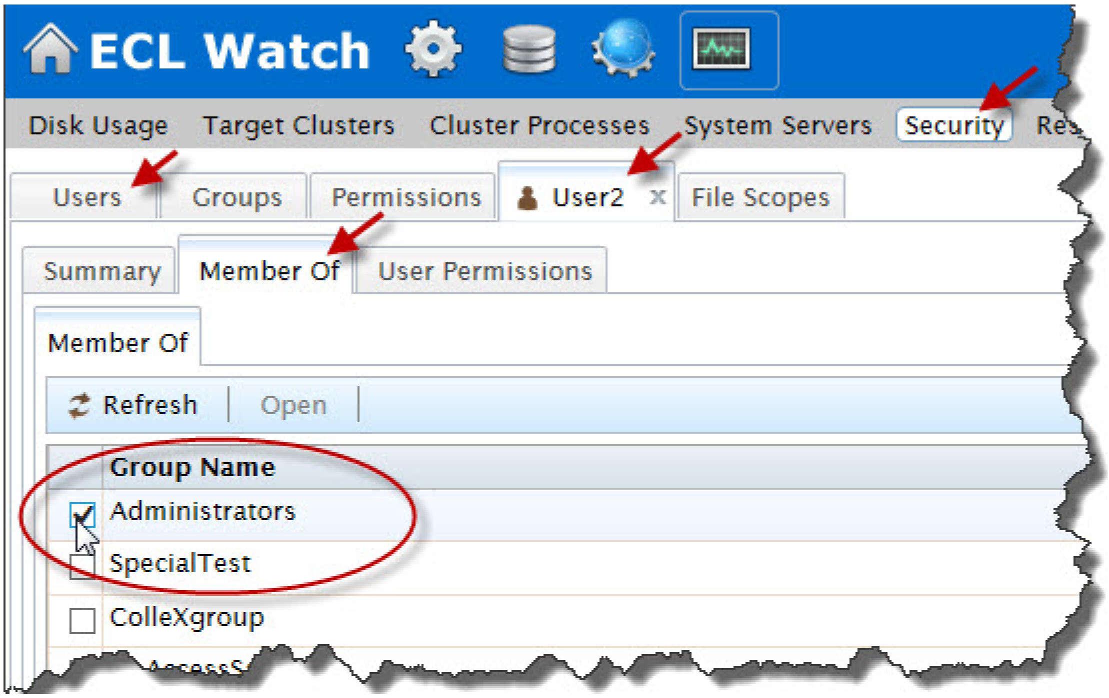


   A tab opens for each user selected. On that tab there are three sub-tabs.

4. Click on the tab for the user to modify (if more than one user selected, repeat for each user).

   On the user's tab there are three sub-tabs.

   Click on the **Member Of** sub-tab.



5. Select **Administrators** by placing a check in box.

   NOTE: The name of the default Administrator group could vary. For example, in Active Directory, it is "Administrators", in LDAP it is "Directory Administrators".

6. The changes are automatically saved. Close the tab(s).

To delete a user from a group:

To delete a user you must have Administrator level access.

Click on the **Operations** icon, then click the **Security** link from the navigation sub-menu.

1. Click on the **Users tab**.

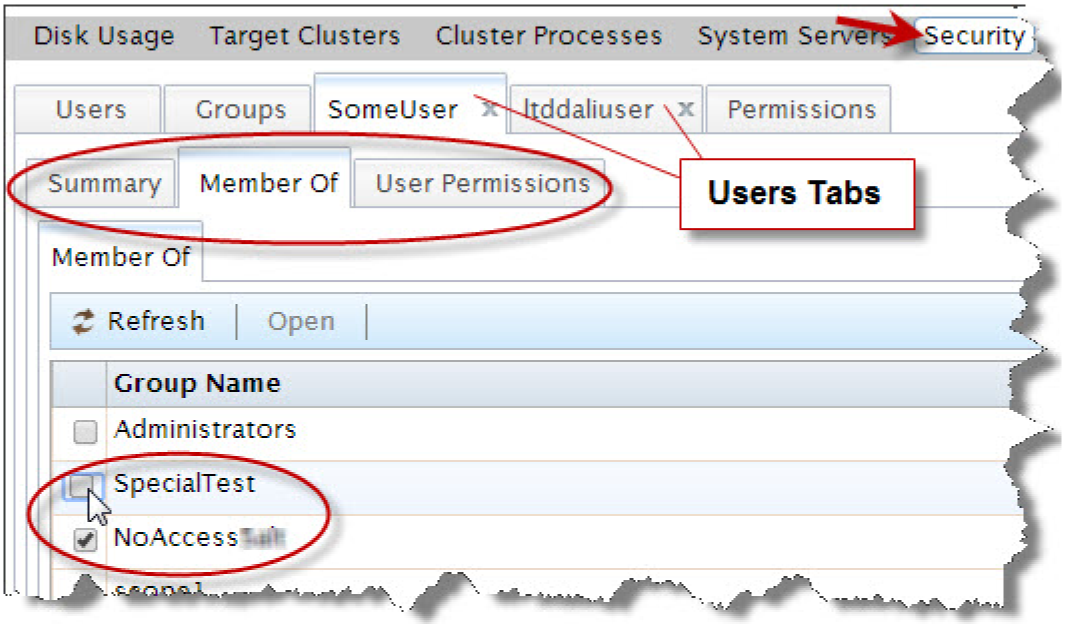
   The users display in a list.

2. Select the user (or users) to modify. Check the box next to the Username.

   This enables the user action buttons. Press the **Edit** action button to modify settings for that user.

3. Click on the tab for the user to modify (if multiple users selected, repeat for each user).

   On the user's tab there are three sub-tabs.



Click on the **Member Of** sub-tab to modify that user's groups.

4. On the **Member Of** tab for that user, there is a list of the available groups.

   There is a check in the box next to each group that user belongs to.

   To remove that user from a group, uncheck the box next to the desired group.

5. The changes are automatically saved. Close the tab.

To change a user's password:

Click on the **Operations** icon, then click the **Security** link from the navigation sub-menu.

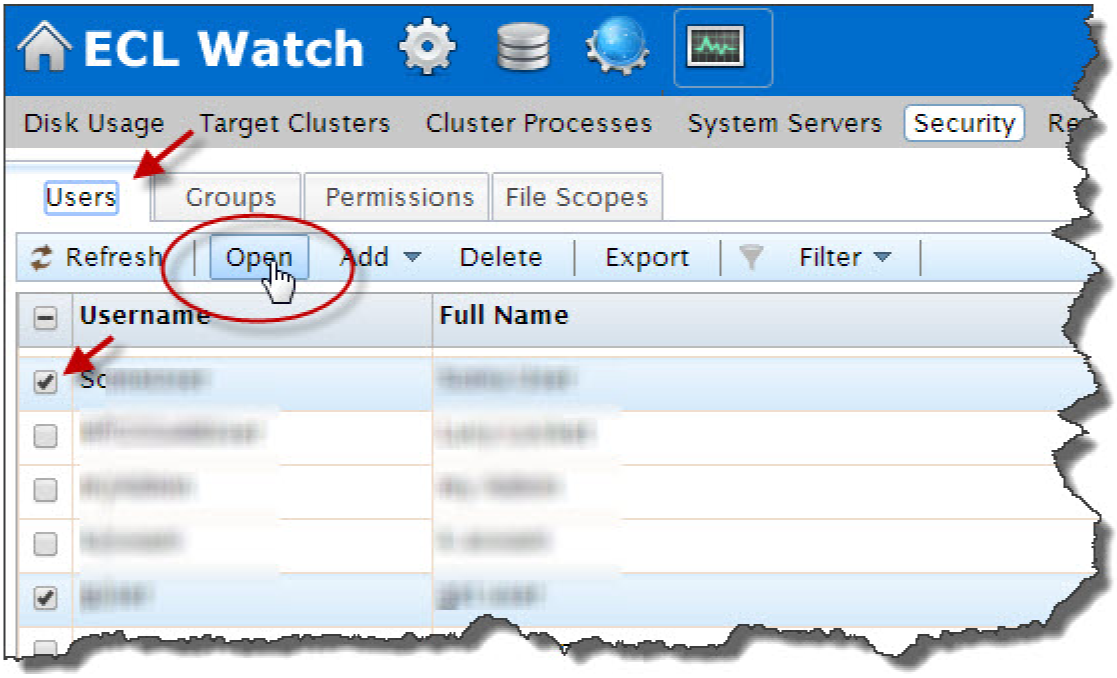
1. Click on the **Users tab**.

   The users display in a list.

2. Select the user (or users) to modify. Check the box next to the Username to select.

   This enables the Users action buttons.

3. Press the **Open** action button.



A tab opens for each user selected. On that tab there are three sub-tabs.

The user details are on the **Summary** tab.

4. Change the password in the **Password** and **Retype New Password** fields as required on the User details summary tab (if multiple users selected, repeat for each user).

   Note: The **Username** cannot be changed.

5. Press the **Save** button.

   A confirmation message displays.

To delete a user from the list of authenticated users:

Click on the **Operations** icon, then click the **Security** link from the navigation sub-menu.

1. Click on the **Users** tab.

   The users display in a list.

2. Check the box to the left of the user(s) you want to remove.

   Note: These users will no longer have access to ECL Watch.

3. Press the **Delete** button.

   Confirmation displays.

Setting permissions for an individual user

There may be occasions when you need to modify the permissions for individual users. For example, users may have individual security needs that are not completely covered in any group or, there may be occasions when a user requires temporary access to an HPCC feature. Permissions set in this area of ECL Watch only affect the user you choose. Most individual permissions you set here overwrite ones set in any group to which the user belongs, except in the case of an explicit deny.

To set permissions for an individual user:

Click on the **Operations** icon, then click the **Security** link from the navigation sub-menu.

1. Click on the **Users tab**.

   The users display in a list.

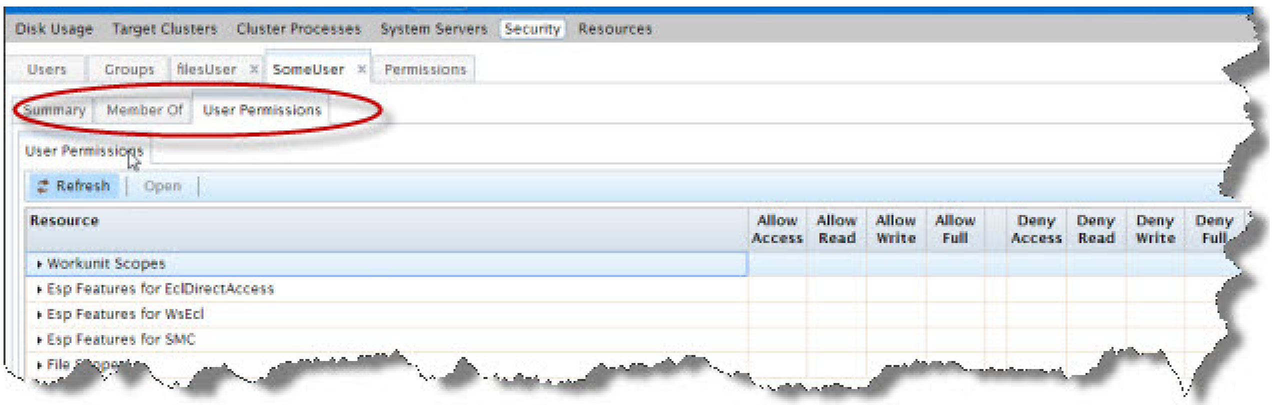
2. Select the user (or users) to modify. Check the box next to the Username to select.

   This enables the Users action buttons.

3. Press the **Open** button.

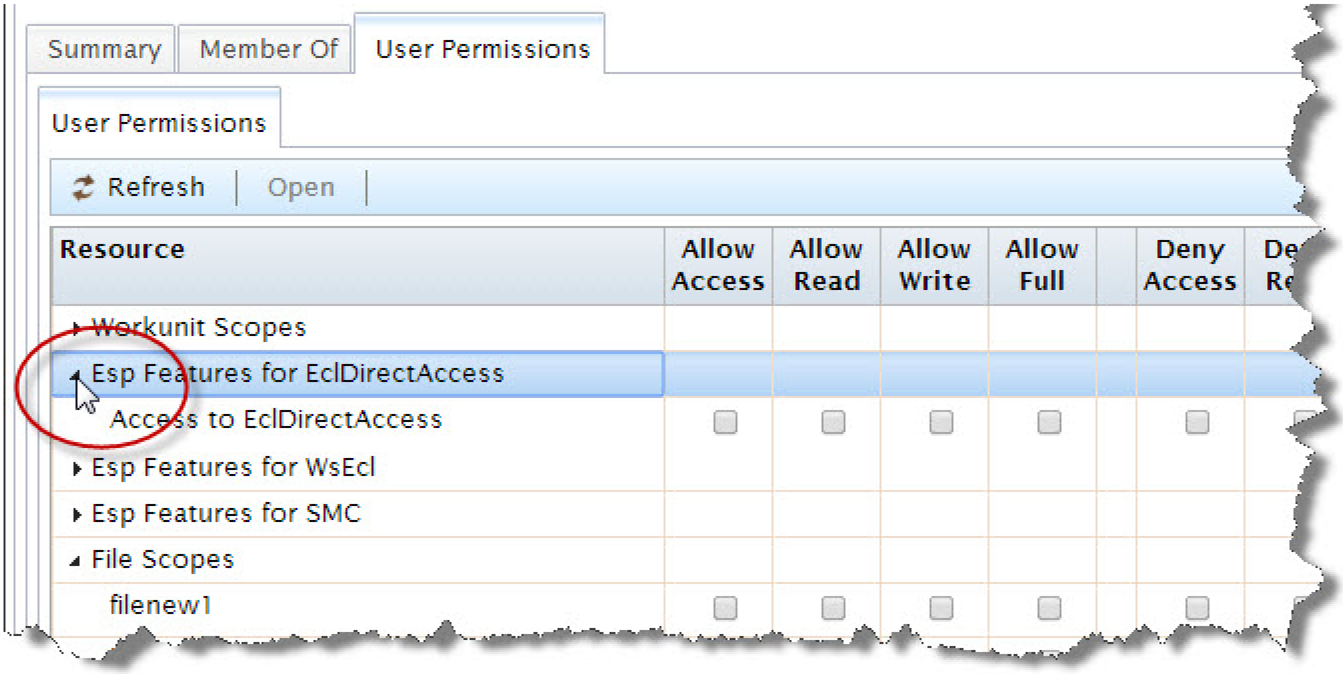
4. Click on the tab for the username to modify (if multiple users selected, repeat for each user).

   On the user's tab there are three sub-tabs.



   Click on the **User Permissions** sub-tab to modify that user's permissions.

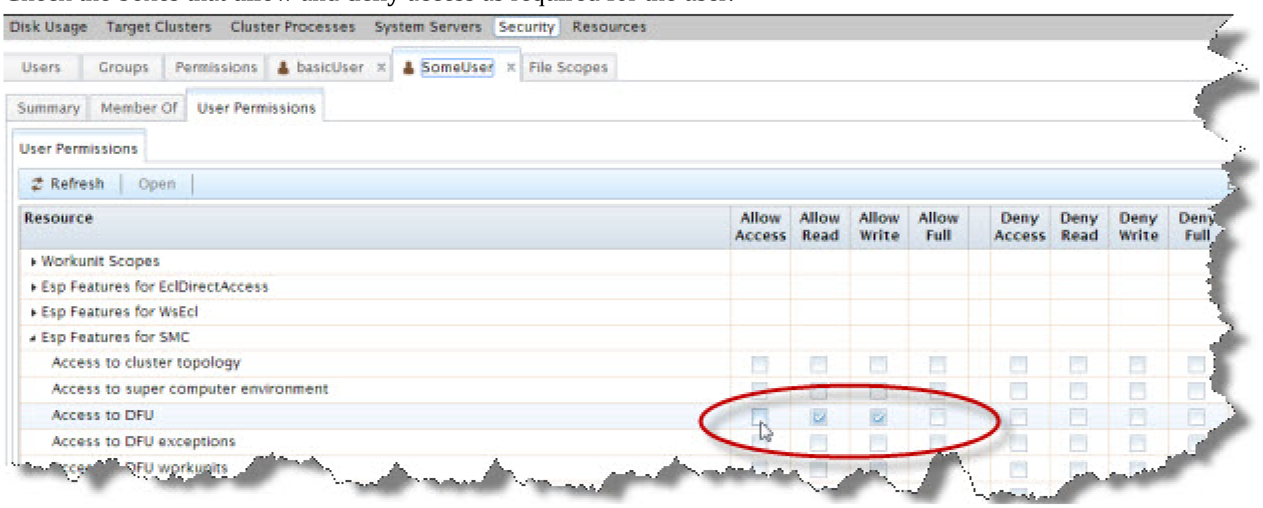
5. Click on the arrow next to the resource to display the permissions for that resource.



The list of permission groups currently set for this user and the ones the user has inherited are also listed. Click the arrow to allow setting the individual resource settings.

6. There may be more than one resource setting available in each group, be sure to set the permissions for each setting as required.

7. Check the boxes that **allow** and **deny** access as required for the user.



⚠	**NOTE:** Use caution when setting any explicit **deny** permission setting. The most restrictive permission always applies.

8. The changes are automatically saved. Close the tab.

Setting and modifying group permissions

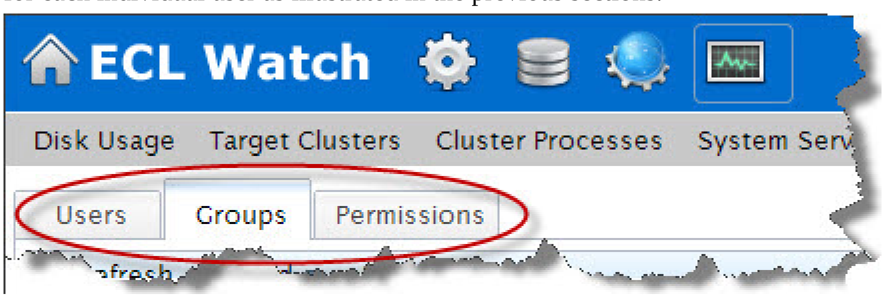
Setting up groups ensures that all users with the same permission needs have the same permission settings. You can give users the access they require to the feature areas of HPCC that they need. There is no limit to the number of groups you can create. You can create as many groups as you need to control access for all your users regardless of their tasks.

Use the **Groups** menu item to:

- Add a new group.
- Delete a group.
- Add members to a group.
- Modify the permissions for a group.

Adding and editing groups

When adding or changing the permissions for a group, all members of that group are given those permission settings. So it is important to be sure that you are giving or denying access to features appropriate for the members of that group. If you need to make a change for a single user (or small number of users), it is probably better to make that change for each individual user as illustrated in the previous sections.

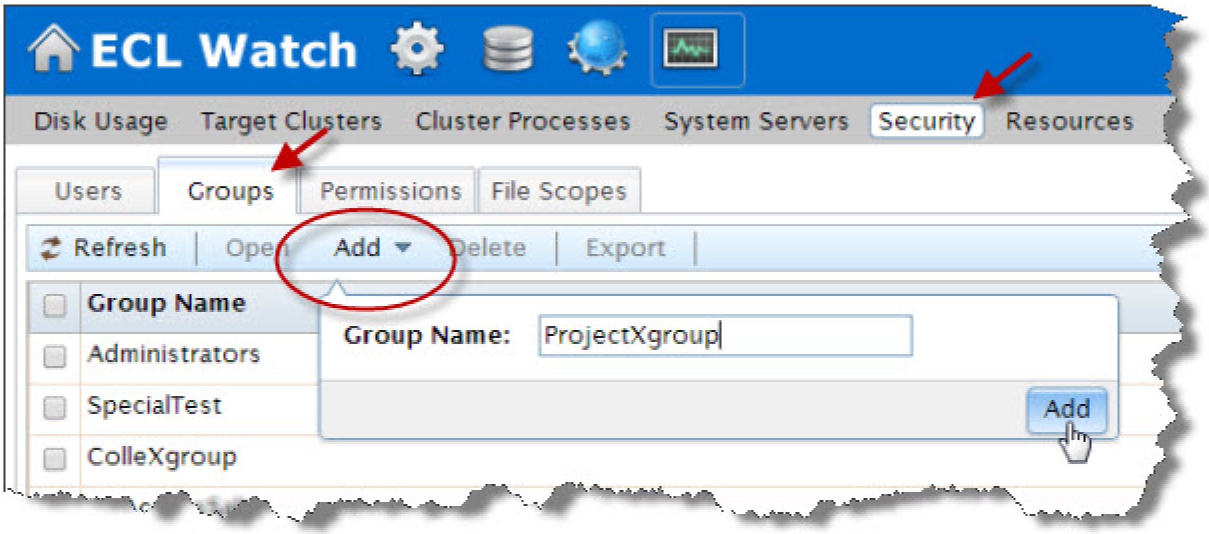


To modify groups, click on the **Operations** icon, then click the **Security** link from the navigation sub-menu. Click on the **Groups** tab.

To add a new group:

Click on the **Operations** icon, then click the **Security** link from the navigation sub-menu.

1. Click on the **Groups** tab.
2. Press the **Add** action button button.



This opens a dialog where you can enter the name for the group.

3. Enter a **Group Name**.

4. Press the **Add** button.

   This opens a **Summary** tab for this new group.

   You can set the permissions and add members to this group from the respective sub-tabs on that group tab.

To delete a group:

Click on the **Operations** icon, then click the **Security** link from the navigation sub-menu.

1. Click on the **Groups** tab.

2. Locate the group in the list and check the checkbox next to it.

3. Press the **Delete** action button.

4. Press the **OK** confirmation button.

   The group no longer displays in the list.

To add new members to a group:

Click on the **Operations** icon, then click the **Security** link from the navigation sub-menu.

1. Click on the **Groups** tab.

2. Locate the group in the list and check the box next to it.

3. Press **Edit** action button.

   This opens a new tab for the group.

   Three sub-tabs display: **Summary**, **Members**, and **Group Permissions**.

4. Select the **Members** tab.

The members tab displays a list of all users on the system. The users that belong to the selected group have a check in the box next to them.

5. Check the box(es) to the left for all the users you want to add to the group.
6. The changes are automatically saved. Close the tab.

To delete members from a group:

Click on the **Operations** icon, then click the **Security** link from the navigation sub-menu.

1. Click on the **Groups** tab.
2. Locate the group in the list and check the box next to it.
3. Press the **Open** action button.

   This opens a new tab for the group.

   The Groups tab has three sub-tabs: **Summary**, **Members**, and **Group Permissions**.
4. Select the **Members** tab.

   The Members tab displays a list of all users on the system. The users that belong to the selected group have a check in the box next to them.
5. Uncheck the box(es) to the left for all users you want to delete from the group.
6. The changes are automatically saved. Close the tab.

Setting permissions for a group

By default, all users are members of the **Authenticated Users** group. The **Authenticated Users** group has access rights to almost all resources. To set up more restricted controls, you should create specific groups with more restricted permissions.

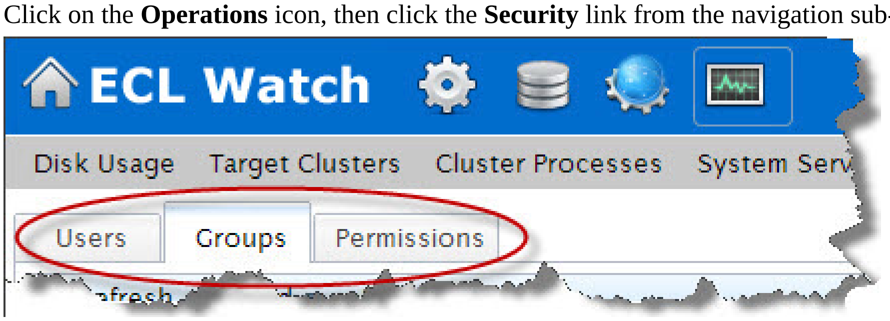
You can then create groups with only those access rights you wish to grant. This approach allows the most flexibility since a single User ID can have multiple group memberships.

As a best practice, you should use **Allow** instead of **Deny** to control access. Denies should be used only as an exception, when possible. If you wish to deny a user access to some specific control, a good practice would be to create a group for that, place the user(s) in that group, then you can deny access to that group.

Remember the most restrictive control takes precedence. For example, if a user is in a group that has deny permission to file access, and the user is in another group where file access is allowed, that user will still not have file access.

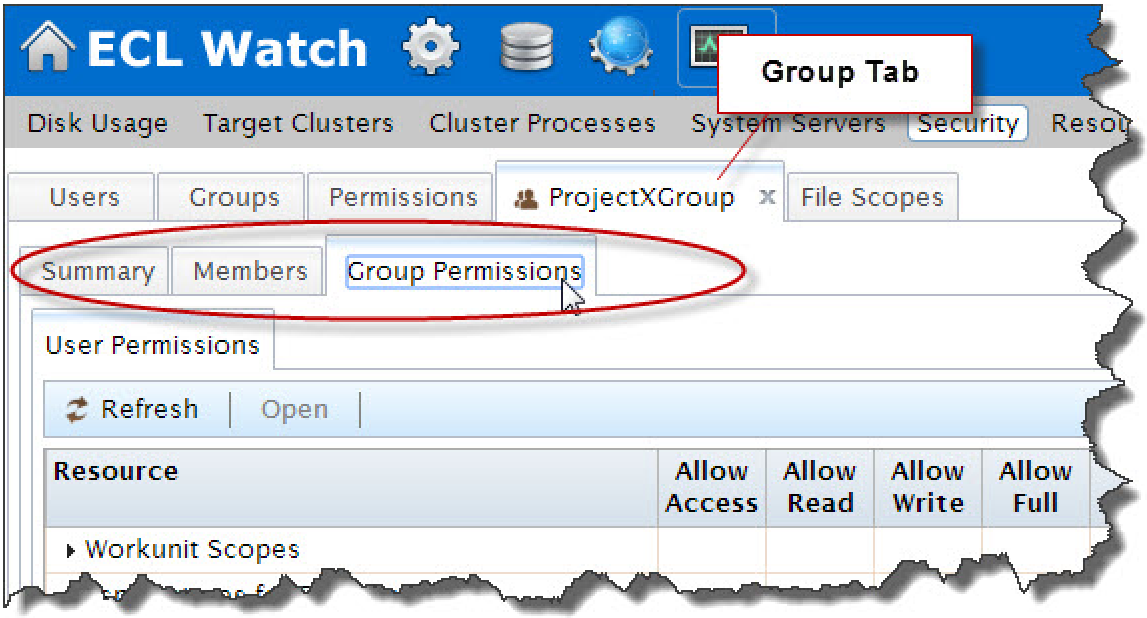
To set permissions for a group:

Click on the **Operations** icon, then click the **Security** link from the navigation sub-menu.



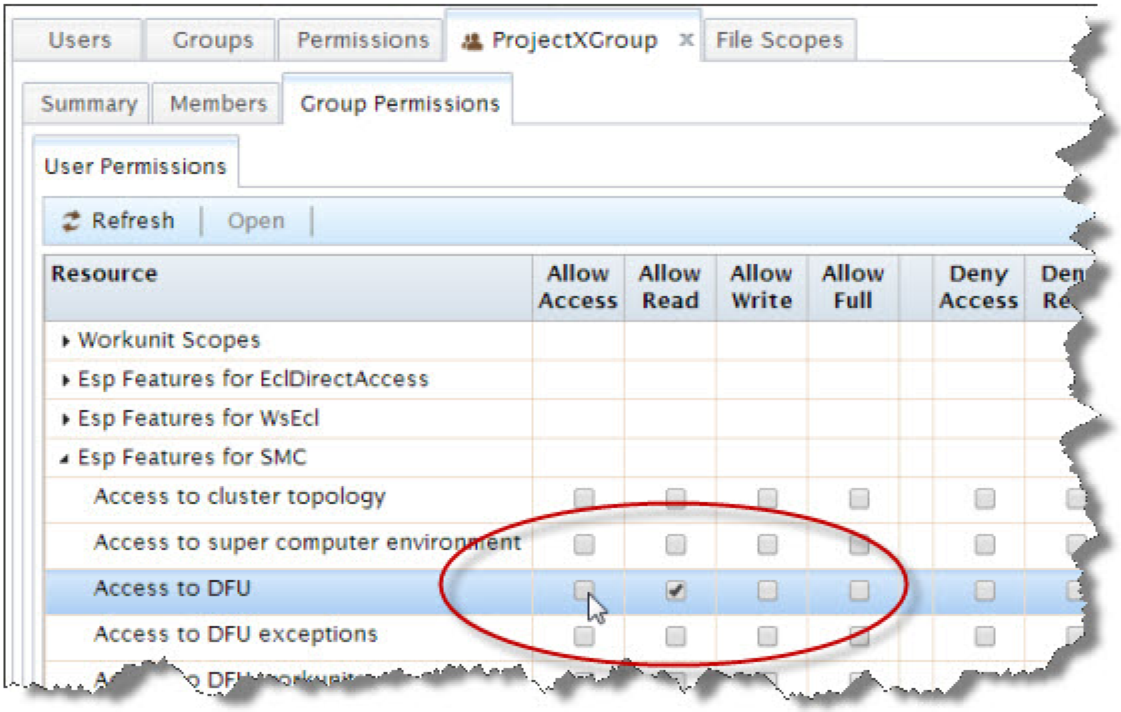
1. Click the **Groups** tab.
2. Locate the group in the list and check the box next to it.
3. Press the **Open** action button.

   This opens a new tab for the group.

   The group tab displays three sub-tabs: **Summary**, **Members**, and **Group Permissions**.
4. Select the **Group Permissions** tab.
5. Click on the arrow to the left of the resource to display the permissions for that resource. The permission groups currently set for this group and the inherited ones display.
6. There may be more than one resource setting available in each group, be sure to set the permissions for each setting as required.

7. Check the boxes for **allow** and **deny** as required for the group.



	NOTE: Use caution when setting any explicit **deny** permission setting. The most restrictive permission always applies.

8. There may be more than one resource setting available, select the resource(s) you require from the drop list.

   Repeat for each applicable resource.

9. The changes are automatically saved. Close the tab.

Plug-ins

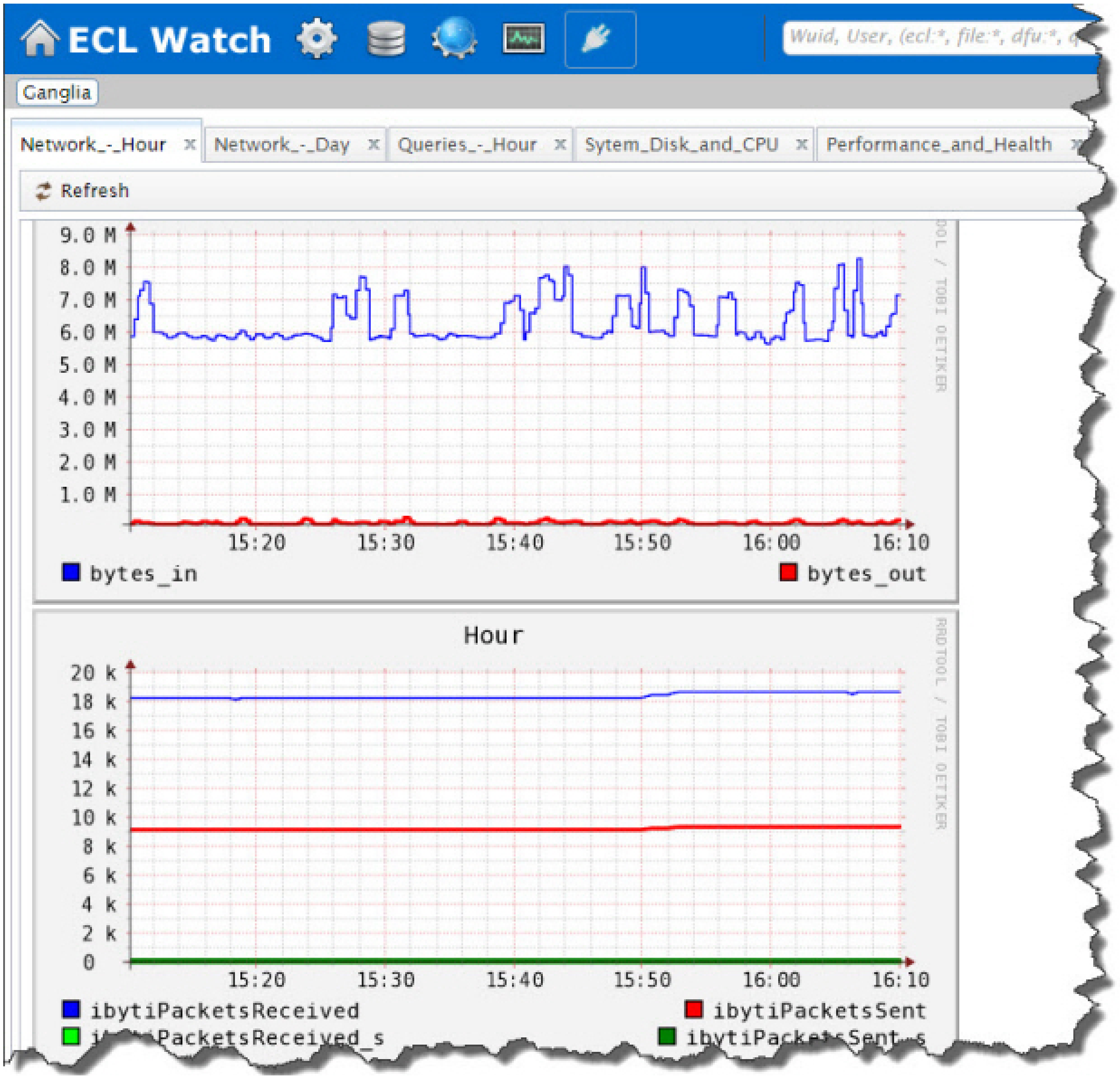
You can add functionality to ECL Watch with plug-ins. You can integrate certain plug-ins into the ECL Watch interface. After you install an approved plug-in, the plug-in icon displays in the navigation bar at the top of the ECL Watch page. Click on the plug-in icon to view the plug-ins page in ECL Watch.

Figure 92. ECL Watch Plug-in icon

Ganglia in ECL Watch

With the HPCC Systems® Ganglia-monitoring plug-in installed, you can view the Ganglia statistics and graphs through the ECL Watch interface. The default monitoring displays several key statistics, but you can customize and configure the views.

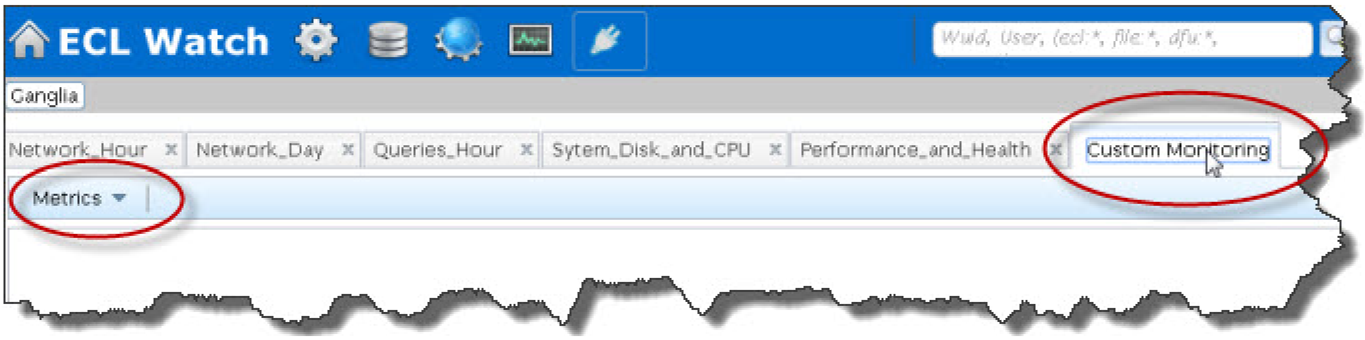
Figure 93. Ganglia in ECL Watch



Customize Monitoring

The default Ganglia page has a tab for Custom Monitoring where you can easily add custom monitoring components.

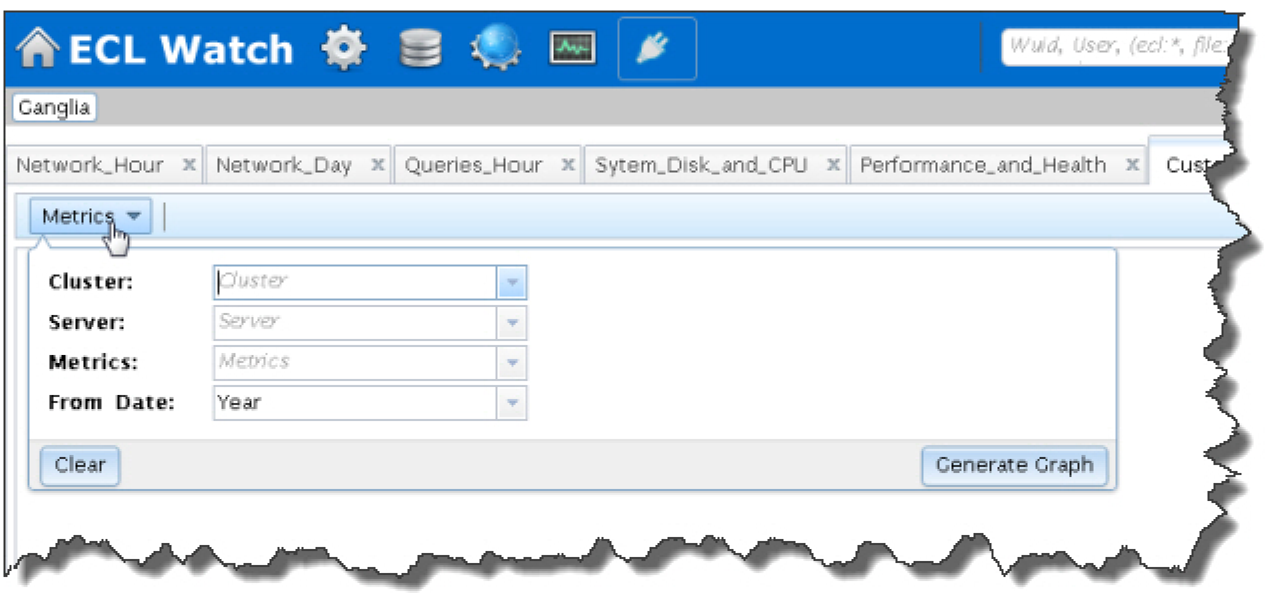
Figure 94. Ganglia Custom Monitoring



To customize the monitoring page;

1. Select the **Custom Monitoring** tab.
2. Press the **Metrics** button.
3. Use the drop menus to display the various graphing utilities.

Figure 95. Customize the Metrics



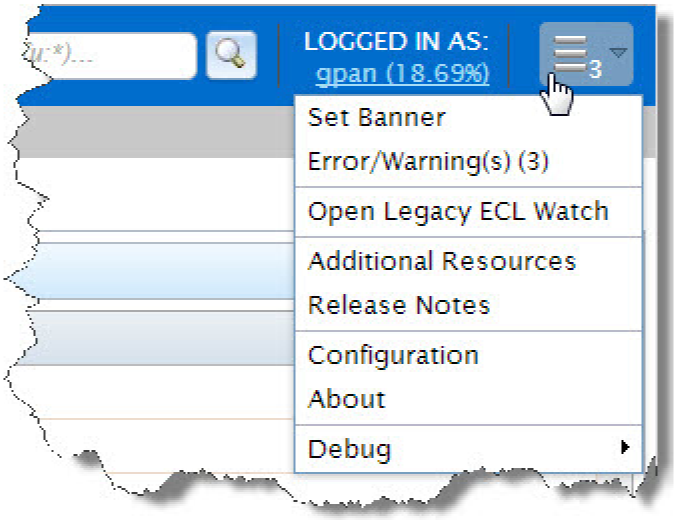
Installing Ganglia in ECL Watch

In order to use Ganglia in ECL Watch, you need to have Ganglia installed on your HPCC System. For details on installing Ganglia for ECL Watch, refer to the *HPCC Monitoring and Reporting* manual.

Advanced Menu

There is a section at the top right on the navigation bar with some useful information and features. This section shows you who you are logged in as (if your system has authentication enabled). The Advanced menu is located on the right hand side of the navigation bar. There are several items that you can access from the advanced menu.

Figure 96. Advanced menu



There may be a number displayed on the menu link. A number displayed next to it indicates how many errors and warnings have been generated during your session. Click on the advanced menu to display a list of features.

Access the Advanced menu

You access the advanced menu items from the advanced menu link at the top right corner of ECL Watch.

The **Set Banner** link allows you to set a custom banner message at the top of your browser window when you open ECL Watch. You can use this feature to send messages to users.

The **Error/Warning(s)** link displays a tab showing you Errors, Warnings, and Information messages. You can filter this page by checking the boxes at the bottom of the tab. A copy facility is also provided.

The **Open Legacy ECL Watch** link opens a tab to the previous version of ECL Watch. The legacy version of ECL Watch is deprecated; this link is only available for a limited time to help in the transition.

The **Additional Resources** link opens a tab to the HPCC Systems® download page, where you can browse and download additional HPCC resources: documentation, white papers, training videos, wiki pages, the red book and other HPCC related source code.

The **Release Notes** link opens a tab with the relevant release notes for the version of HPCC that you are using. Read the release notes for more information specific to the release you are working on.

The **Configuration** link opens for viewing the xml version of the configuration file in use on your system.

The **About** link opens a dialog to display some information about the version of the HPCC platform and graph controls installed on your server.

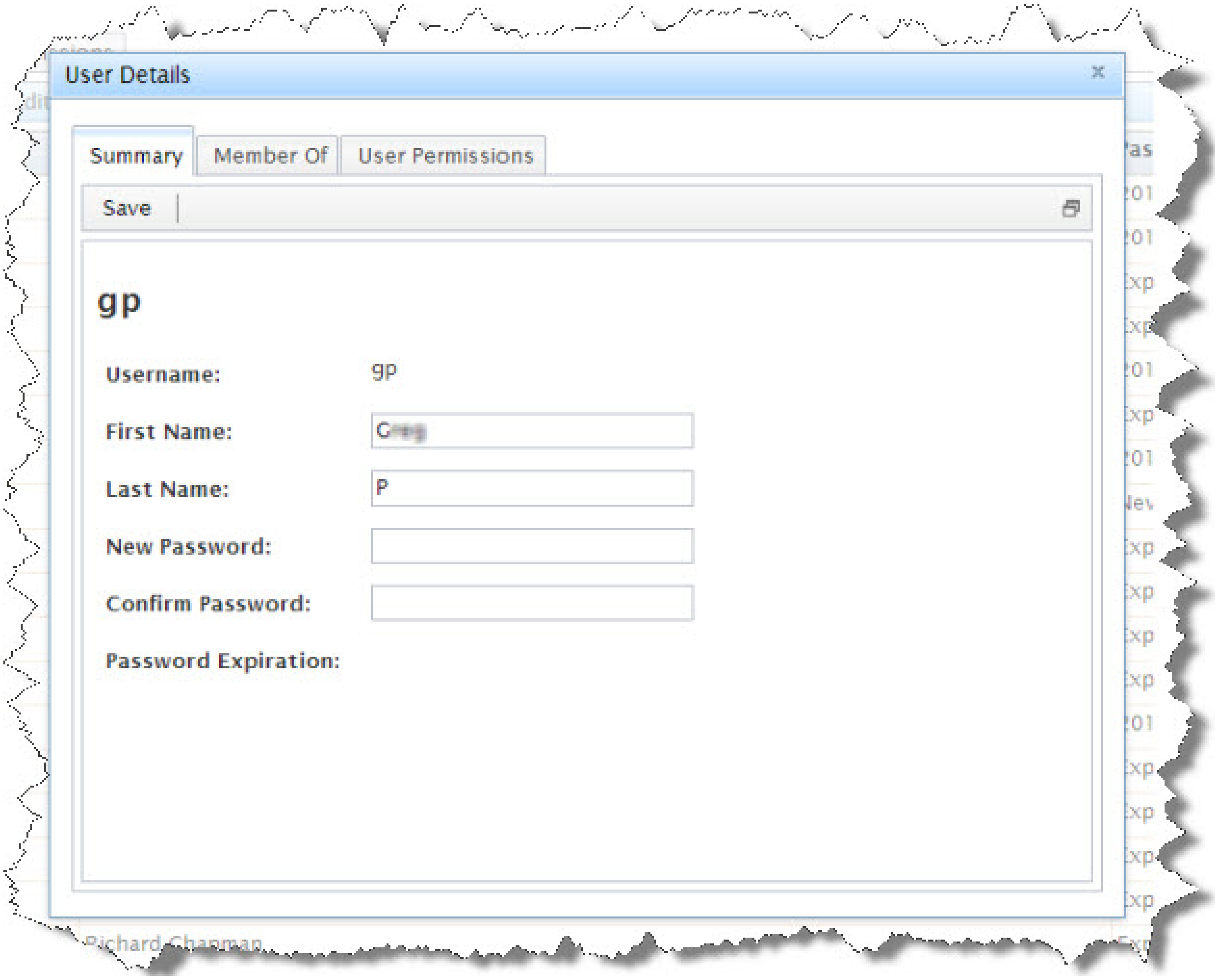
User Details

The LOGGED IN AS link shows information about the current user on a cluster configured for authentication.

1. Click on the **LOGGED IN AS:** link.

   The User Details window opens. The default window opens on the Summary tab.

Figure 97. User Details window



2. From The User Details page Summary tab, you can Confirm the User Name that you are logged in as.

   You can change your password.

   Note that Administrator rights are needed to manage users and permissions.

   Ensure you are using an account with Administrator rights if you intend to manage users or permissions.

3. Verify the password expiration date, or if password is set to expire.

Change Password

If authentication is enabled on your HPCC system, you can change your password, right from the User Details window.

1. Click on the **LOGGED IN AS:** link.

   The User Details window opens. The default window opens on the Summary tab. There are fields on the Summary tab where you can change your password.

2. Enter your desired new password.

Make sure it meets whatever criteria your system may have for passwords.

3. Confirm your new password.

   Make sure that it matches the password you entered in the previous field.

4. Press the Save button. It is in the upper left portion of the window.

Permission groups

The second tab on the User Details window labelled Member Of, displays a list of groups. The groups your account belongs to, are indicated with a checkmark.

You must be an administrator to modify any of group settings.

User Permissions tab

The third tab on the User Details window labelled **User Permissions**, displays a list of permission settings. Note that Administrator rights are needed to manage users and permissions. Ensure you are using an account with Administrator rights if you intend to manage users or permissions.

This is where you can access the user permissions area. A more detailed description of the user permissions settings is covered in the User Permissions section.

Resources

The resources link can be found under the Operations Icon link. The resources link in ECL Watch provides a link to the HPCC Systems® web portal. Visit the HPCC Systems® Web Portal at http://hpccsystems.com/ for software updates, plug-ins, support, documentation, and more. This is where you can find resources useful for running and maintaining HPCC on the web portal.

You can also get to the resources link on the HPCC Systems® web portal page, by clicking on the **Additional Resources** link found on the sub-menu of at the top right hand side of navigation bar.

ECL Watch provides a link to the HPCC portal's download page: http://hpccsystems.com/download. This is the page where you can download Installation packages, virtual images, source code, documentation, and tutorials.