EMC® Storage Monitoring and Reporting

Version 4.0

Web Portal Guide

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EMC²

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CHAPTER 1

Web Portal Guide

Information you can find here

Find information on how to use reports, manage users, and customize the interface to meet your needs.

- Browsing Reports — for users who want to manipulate how reports are displayed.
- Customizing User Settings — for users who want to set personal preferences.
- Report Library — for users and administrators who work with installed SolutionPacks.
- Administering the Interface — for administrators who want to customize the interface for all users.
- Managing Users — for administrators who want to add users and manage user accounts.
- Centralized Management — for administrators who want to manage, configure, and update system components.
- Alerting — for users and administrators who want to enable, disable, or configure alert definitions.

For release notes, security guides, software updates, or information about EMC products, go to EMC Online Support at https://support.emc.com.

EMC Storage Monitoring and Reporting Help system last updated: 6/6/16

Key terms

Review these commonly-used terms before you begin using the interface.

aggregation
Two types of values are stored in the database: real-time values and aggregated values. Real-time values are the actual values that were collected by the collectors. Aggregated values are the compound of several real-time values. Aggregated values improve report performance and save disk space. Aggregated values are created and updated as real-time values are collected. This way, aggregated values are always current and precise. A default installation contains 1 hour, 1 day, and 1 week aggregates.

backend
The backend module receives, normalizes, and consolidates the collected data and pushes it to the database. The backend performs data aggregation.

browse mode
The Browse mode is the default mode of the user interface. In Browse mode, you can generate and view reports on the fly by clicking the report nodes in the tree. In Browse mode, an expansion on a device property will appear as one node per device in the report tree.

collector
Collectors are lightweight modules that gather time series data from EMC and third-party technologies and ingest it into the processing pipeline as raw values. Examples of collectors are the Smarts Collector and the SNMP Collector.

data point
A data point is one unit of data that contains a timestamp, metric, and value.

expansion
Expansion dynamically creates sub nodes. Sub nodes add levels to a report so that you can drill down. When a node is set to expand, the node transforms itself from a single

node to as many nodes as there are matches of the specified property name in the data set. By using expansion, you can define a report that automatically creates and deletes nodes based on the properties found in the data set. For example, as devices are added to the network, they are automatically added to the report when their properties match the expansion criteria.

filtering

A filter is an expression that limits the number of metrics displayed in a report. Filtering is vital to configuring a report because it determines the report's data set. You can manually create a filter when you know which properties and values to include in a filter, or you can use the Filter Wizard to help you define the filter.

frontend

The frontend refers to the main user interface that displays time series and event-based data in reports. The frontend interfaces with the database.

metric

A metric is a quantity that can be collected and reported on, such as: CPU usage, throughput, and capacity.

node

Nodes appear in the report tree. You click a node to generate and see a report. Reports appear on the right side when you select a node. Nodes can have parent and child nodes (sub nodes).

property

A property is meta data that is associated with a metric. For example, an iflnOctets metric could also contain information about the device type supplying the value as well as the device name.

root node

A root node is the topmost node of a branch in the report tree.

Browsing Reports

Browse mode is the default mode of the user interface. In Browse mode, you can generate and view reports on the fly by clicking the report nodes in the tree.

You can do the following in browse mode.

- Drill down in most reports to get more detailed reports

- Change how reports are displayed, including the type of table or graph that is used to display the data

- Customize the look and feel of the displayed metrics

- Change the type of aggregation and the type range of the report

- Create a dashboard of favorite reports

- Take a snapshot of a report

- Print, email, and export reports

- Schedule reports

Navigation styles

The navigation column on the User Interface window provides access to all reports. Users can choose between the Icon Navigation and Tree Navigation styles. The Administrator sets the default style for the installation.

Default style

The administrator sets a global default navigation style under **Administration** › **Portal** › **Default Display**. Each user account can override the global default style and set a preferred style under **User Settings** .

Icon Navigation
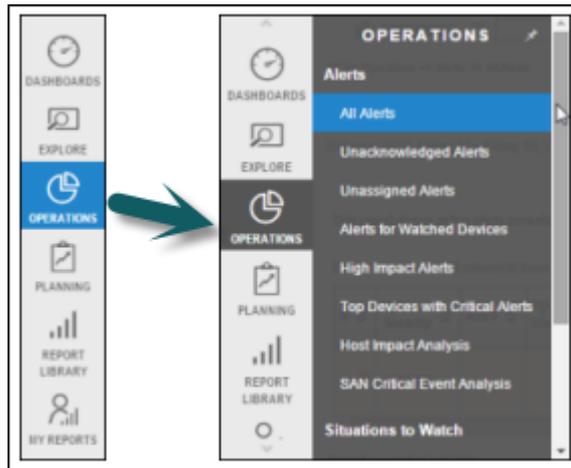
This style helps preserve space on smaller-sized windows. Initially, it shows only a thin column of icons.

Click an icon to show a second column of categories, click a category to expand it, and click again to select a report. Notice the scroll-bar on the third column.

When you select a report, the second column disappears. Use the tabs, dashboards, and links in the reporting pane to navigate further into the reporting structure.

Tree Navigation
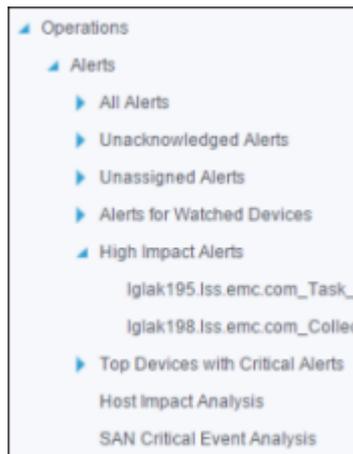
With this style, use the arrows to expand or contract the nodes. The tree can display the entire report structure. Click any entry in the tree to display a report. You can also use the tabs, dashboards, and links in the reporting pane to navigate around the reporting structure.

Set the navigation style

You can change the navigation style for your user account.

The administrator sets a global default navigation style under **Administration** › **Portal** › **Default Display**. Your user account settings can override the global setting.

Procedure

1. In the banner at the top of the User Interface, click **Settings** .
2. Click **User Preferences**.
3. In **Navigation Style**, make a selection.

Option	Description
default	The administrator's global setting
tree	Hierarchical tree
icon	Thin icon column

4. Click **Save**.

Make icon navigation column static

For the icon navigation style, use the pin to toggle the second column between temporary and static states.

In its default state, the second column disappears when you select a report. You can pin the second column so it remains visible and the report pane moves to the right to accommodate it.

Procedure

1. Click the pin at the top of the icon navigation bar.
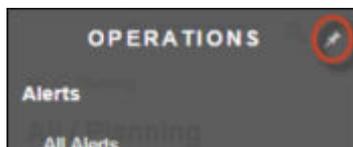
2. Click the pin again to return the second column to a temporary display.

Displaying and canceling reports

When you navigate to a report on the Console, the system starts generating that report using the most recently collected data.

Here are some important points to remember about displaying reports.

Data collection occurs in scheduled intervals

There might be many data collectors in your system, each gathering data from different components in the infrastructure. Each collector is configured with a

collection interval. Depending on how your administrators configured the various collectors, you might see some infrastructure activity reflected in reports within 15 minutes, and others not for a day or more.

The Console actively generates one report per user session at a time

If you navigate to another report while the first one is still generating, the first report is cancelled, and the new one starts. If you are waiting for a long-running report to generate, do not click around examining other reports expecting the original report to finish running in the background.

Scheduled reports generate in the background

Scheduled reports to not affect the "one report per user session" rule. If you consistently depend on reports that take a long time to generate, you can put those reports on an automatic schedule, and view them in their completed state whenever you need them. Use **Tools** › **Schedule this Report** . You can request that the report be emailed or stored on a remote system.

Quick search

You can search a set of predefined properties for a value. The search returns links to reports about the found values.

The search is case insensitive, and finds occurrences of the string anywhere in the property value (that is, at the beginning, middle, or end of the value). The search string must contain at least 3 characters. The result is a categorized list of links to reports that contain the matched value.

For example, the following search for LGL finds device names containing that value, and returns links to major reports about those devices. In this case, the links are to the device summary reports and to alerts on those devices.
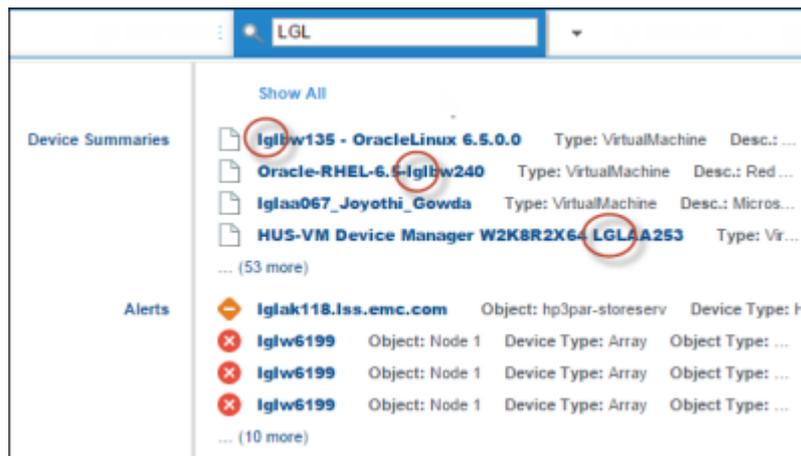
The search looks at a predefined set of properties in each of the product databases. The following table shows the database properties that are searched.

Note

The categories correspond to databases. Your installation might not use all of the databases.

Table 1 Properties searched within each database

Categories			
Device Summaries (APG)	**Alerts**	**Compliance Breaches**	**VMware Events**
device serialnb ip devdesc model vendor domain	severityAsString owner parttypedisplayname partdisplayname eventdisplayname category fullmsg eventSource devtype device	breachName device policy rule	datastore device Message VM Host User

The search results are links to reports. Results are presented in the following ways:
- A popup shows a preview of results.
  Click in the popup to go to full result list or to a specific result.
- The full result list is a tabbed report by category.
- The navigation tree shows the search results in a node under **My Reports › Search Results**.

Procedure

1. In the **Search** box at the top of any report page, type a search string, and press **Enter**.
   - The search is case insensitive. For example, `lgl` finds lgl and LGL.
   - The search string must contain at least 3 characters.
   - The search finds occurrences of the string in the beginning, middle, and end of values.
   - Do not use wildcards in the search string.

2. In the pop-up preview of search results, do any of the following:.

Action	Result
Click Show All or one of the result categories on the left.	A tabbed **Search Results** report opens, showing all results, organized by category. Click a link in any of the lists.
Click a link in the list.	The selected report opens.

3. To return to the search results after navigating to a report, do either of the following:
   - Use the browser's **Back** button.
   - Use the Search Results node in the report navigation tree, located under **My Reports › Search Results**.
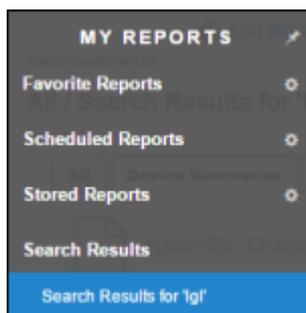
Note

Only one search node is saved. If you perform another search, it overwrites the first search node.

DISPLAY menu

You can change how a report displays, including the time range, aggregation type of the metrics used, and report size.

Changing the sampling period and duration

You can set reports to display a variety of time period aggregates over a selected time range.

Procedure

1. Click **Display**.

2. In the **Time Selection** area, select the time period, aggregation, and duration of the collected data.

   Note: Selecting **real-time** for the display value gives the same output no matter which aggregation option is selected.

3. Click **Apply**.

Locking time changes for your session

By default, time setting changes apply only to the currently displayed report. You might want to lock the settings so they apply to other reports.

If you apply new time settings and then click the lock icon, the new settings are applied to every report that you view during the current session, until you unlock them. Locking

can be useful, for example, to have a snapshot in time for comparing equivalent graphs for a device.

In a report type of **mixed using defaults,** time setting changes, including locked values, do not apply to the child reports. The child reports in a **mixed using defaults** report always use the default time settings in the original report definition.

Note

Dashboards are often **mixed using defaults** reports.

To lock and unlock time settings:

Procedure

1. Click **DISPLAY**.

2. Make changes to the time settings.

3. Click **Apply,** and then click the lock icon.

4. To hide the DISPLAY menu, click outside of it.

   You can now navigate to other reports and retain the locked time selections.

5. To unlock the settings, click **DISPLAY** and then click the lock icon.

6. To return the current report to its default settings, click **Revert to default report**.

Displaying a report in a new browser window

You can view a report by itself in a browser window.

Procedure

1. Click **Display**.

2. In the **Actions** area, click **View in Full Page**.

EXPORTS menu

You can export reports into Excel, CSV, XML, PDF, SVG, PNG, or JPEG formats.

The export feature sends the contents of the currently displayed report to a selected output format.

Note

On a tabbed report, the export applies only to the contents of the currently displayed tab.

Procedure

1. Click **EXPORTS**.

Note

If a format name is grayed out, that format is not available for the currently displayed report.

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2. Click an export format.

3. Respond to your browser's prompts to save the file in your desired location.

Formatting the output

Some of the export formats provide formatting opportunities.

Procedure

1. Click the tool icon next to a format icon.

   For example, here is the tool icon for the CSV format:

   A dialog opens with formatting fields that are appropriate to the type of format.

2. Change the settings as needed.

3. Click one of the following:

Option	Description
Cancel	Cancel the export operation
Save and Export	Save the settings on the dialog and export the report using the settings on the dialog. The changes pertain to all reports. They apply to your user account and persist across log-in sessions.
Export	Export the report using default settings, ignoring the settings on the dialog.

4. Respond to your browser's prompts to save the file in your desired location.

TOOLS menu

With utilities on the Tools menu, you can get a report URL for referencing purposes, prepare a print-friendly page, create report bookmarks, define a regular schedule for a report, and email a report.
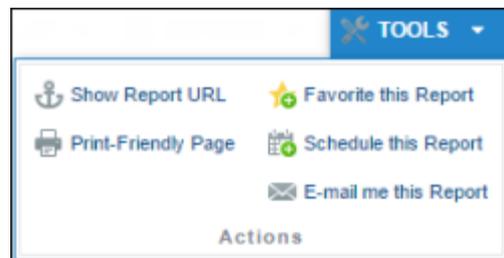
Getting the complete URL for a report

With the complete URL of a report you can email the link to a report or bookmark the report in your browser.

Procedure

1. Click **Tools** › **Show Report URL.**

   The URL for the report appears in a popup.

2. Copy the URL.

Printing a report

You can print a hard copy of a report for your records.

Procedure

1. Click **Tools** › **Print-friendly page** .

   A page appears in a new tab without the navigation tree.

2. Use your browser's print feature to print the page, and then close the tab.

Saving a favorite report

Favorite reports are like bookmarks that give you quick access to reports you use frequently.

Procedure

1. Click **Tools** › **Favorite this Report.**

2. Optionally name the report.

3. Optionally click the **Use as Login Report** option if you want this report to display when you log in.

4. Click **Save.**

   The report appears in the navigation tree under **My Reports** › **Favorite Reports.**

Displaying a favorite report at login

You can mark one of your favorite reports to automatically appear in the report pane after you log in.

Procedure

1. In the navigation tree, click **My Reports** › **Favorite Reports.**

2. Expand the blue bar for the report you want to display at login.

3. Click **Use as login report**, and then **Save.**

Creating a scheduled report

Scheduled reports are generated at fixed times and saved. The saved results can be stored under My Reports, emailed, transferred to a remote location, or analyzed by the alerting module.

Procedure

1. Click **Tools** › **Schedule this Report.**

2. Enter a name for the report.

3. Set the schedule for generating the report.

   When the scheduled report is generated, it queries the database for the latest data.

4. Select **Active** to enable the schedule.

   Deselect **Active** to disable report generation but save the scheduling and report disposition information. You can reactivate it later.

5. Use one or more of the other tabs to configure the disposition of the generated reports.

Tab	Description
Email	Send the report to a list of recipients.
Remote Transfer	Send the report to a specified URL.
Alert	Send the report data to the alerting module.

6. Click one of the following:

Option	Description
Cancel	Exit the scheduled report dialog without saving the report.
Save	Save the new scheduled report (and use the report's default time settings as configured in the report definition).
Save modified report	Save the new scheduled report and use the time settings as configured in the Display menu

7. To make changes or add additional dispositions, edit the scheduled report.

Edit scheduled report settings

You can change the settings on a saved scheduled report,

Procedure

1. Click **My Reports** › **Scheduled Reports** › *scheduled_report_name*.

2. Change any setting on any tab.

3. Click **Save** on any tab.

Emailing a scheduled report

You can email the results of scheduled report runs to a list of recipients. You can choose one or more formats to send.

Before you begin

For successful emails, an administrator must configure an SMTP server as described here on page 31.

Procedure

1. Create a new scheduled report or edit an existing one.

2. Click the **Email** tab.

3. Configure the email recipients, subject, and message of the email to send.

4. For **Formats,** select one or more formats for the report, such as PDF, CSV, or an image file.

   Some format selections are greyed out if they are not appropriate for the report type.

   A blue configuration bar appears for each format selected.

5. Optionally, click a blue bar to expand it and change the export settings for the format.

6. Click **Save**.

Results

After each scheduled run of the report, an email is sent to the list of recipients, with the report in each of the selected formats included as attachments.

Send a scheduled report to a remote location

You can transfer generated report files, in one or more formats, to specified URLs.

The file names of the transferred reports are the scheduled report name assigned on the **Scheduling** tab with an appended date, as follows:

reportName_date.extension

Procedure

1. Create a new scheduled report or edit an existing one.

2. Click the **Remote Transfer** tab.

3. Click **New Remote Location**.

4. For URL, type a well-formatted URL.

   The **?** icon next to this field contains more information and examples of acceptable URLs.

5. For **Formats**, select one or more formats to transfer, such as PDF, CSV, or an image file.

   Some format selections are greyed out if they are not appropriate for the report type.

   An expandable arrow appears for each selected format.

6. Optionally, click an arrow to expand a format type and change the export settings used by the format.

7. Click **Save**.

Send a scheduled report to the alerting module

You can send report data to the alerting module for analysis. The alerting module can then generate alerts or other actions based on the report data.

Before you begin

To generate alerts or notifications based on the data, an alert definition, defined in the alerting module, is required with these components:

- Filter — Identifies the report name to process. The ‹name› element in the XML file identifies the report name.

- Conditions, comparators, etc. — Identifies the metrics to analyze and the conditions that cause actions. The ‹th› elements in the XML file identify metric names.

- Actions — Defines the actions, such as writing to a log, sending an email, or generating an SNMP alert message.

The alert definition must be enabled to process the data.

Use this tab to send the report data, in the form of an XML file, to the alerting module.

Procedure

1. Create a new scheduled report or edit an existing one.

2. Click the **Alert** tab.

3. Select the alerting module to start sending data to it.

Deselect the alerting module if you no longer need to send data to it.

4. Click **Save**.

Results

Every time the report is generated, an XML file containing the data is forwarded to the alerting module. Nothing else happens on the alerting side if there is no enabled alert definition to process the data.

Launching a scheduled report now

You can launch a scheduled report at any time.

Procedure

1. In the report tree:

Navigation Style	Description
Tree	Go to **My Reports** › **Scheduled Reports**.
Icon	Go to **My Reports** › **Scheduled Reports** › [icon]. The [icon] appears in the menu to the right of **Scheduled Reports**.

2. In the right pane, right-click the report you want to run, and select **Launch now**.

Watch the **Status** column for notification that the report is finished running.

3. The finished report appears under **My Reports** › **Stored Reports**.

Emailing a report to yourself

You can send a PDF of the currently displayed report to your email address.

Before you begin

1. To add or verify your email address, click **Settings** in the banner. On the **User** tab, complete the **Email Address** field.

2. For successful emails, an administrator must configure an SMTP server as described here on page 31.

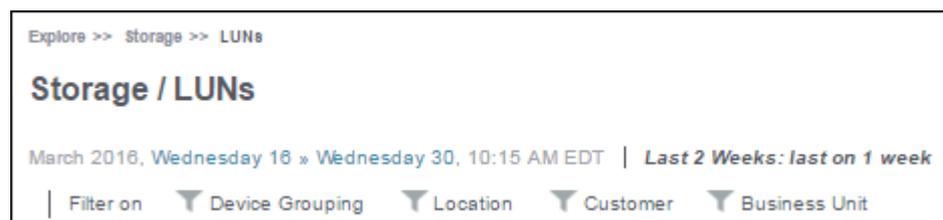**Procedure**

1. Click **Tools** › **E-mail me this Report**.

A PDF of the current report is sent to the email address specified in your user settings.

Report headers

The title area of a report contains useful tools, links, and information.

Li n e	Short Description	Explanation
1	Breadcrumb line	Shows the report path of the current report. All components after the first two are active links.
2	Report title	Shows the last two components of the report path.
3	Date/time span	Shows the date and time span being reported on, followed by the date/time settings that controll the time span. Default date/time settings are specified in the report definition. You can change the settings for your user session on the **DISPLAY** menu.
4	Group filters	(not on all reports) The **Filter on** line shows optional filters defined for the report. If available, these buttons provide an easy way to limit the report content. For example, use the Device Grouping filter to report on only the selected device groups, rather than all devices.

Filtering a report using group filters

Group filters appear across the top of the report. They present a dialog of checkboxes that let you select multiple values to filter on.

The dialog lists only the values that are relevant to the current report. The list reflects values found in your database and is further limited by the report filter in the report definition. For example, the following filter on the Platform property lists only the platforms that are being monitored at your installation and are relevant to the report definition:
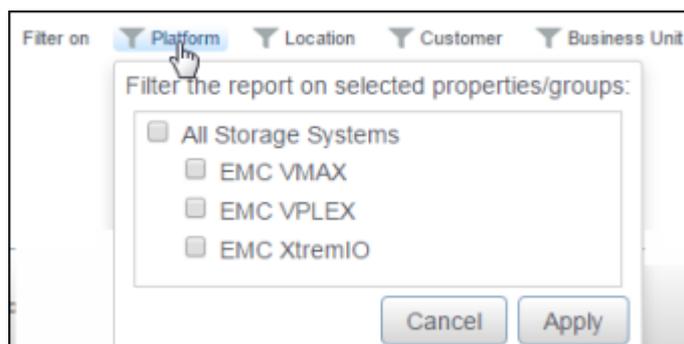
The list of values in a group filter is not limited by column filters. For example, a **Situations to Watch** report might contain a column filters that eliminates rows based on values in that column. In that way, a **Situations to Watch** report typically contains just a few rows. The group filters, however, continue to list categories relevant to the entire report, not just to the displayed rows.

Note

If there are no values in a filter dialog box, your installation is not populating that property or no values apply to the current report.

A group filter can be defined for any database property.

- If the filter is for one of the data enrichment properties maintained in the **Centralized Management** › **Groups Management** module, the dialog uses group names as defined

under Groups Management. Some groups have predefined names. Other groups define a Default group, and expect each installation to create additional groups.

- If the filter is for a collected property, the dialog uses the property values from the database.

Procedure

1. Click the icon for a group filter.

   A dialog of values appears.

2. Select one or more values to include in the report, and click **Apply**.

   The funnel for the applied filter changes color to indicate that the filter is active. The report redisplays, including only the data for the values you specified in the filter. For example:

   - In a table report, the filter eliminates rows from the table.
   - In a consolidated bar chart, the filter eliminates data from the metric calculations.

3. If multiple filters are available, optionally apply additional filters to further limit the displayed results.

4. To cancel a filter, click the filter icon and select **Clear**.

Working with personal views

You can create your own personal dashboards of favorite reports.

Creating a personal view of selected reports

A personal view is a dashboard of several of your favorite reports.

When you create your first personal view, a new node is created under My Reports. The new node is also named My Reports. You can define more than one personal view.

Procedure

1. Mouse over the upper right corner of a report.

   A set of icons appears.

2. Click the pin icon.

3. If you did not yet create a personal view, click **New Personal View** to create one. Otherwise, select the view in which to add the report.

4. To view your personal view, click **My Reports** › **My Reports** › *personal_view_name* in the navigation tree.

Comparing reports in a Personal View

You can create a new report, based on an existing pinned one, for comparison purposes.

Procedure

1. Select the pinned report in a **Personal View**.

2. Click **Compare to new report** from the gear icon.

3. Type a name for the new report.

4. Make the appropriate changes.

5. Click **Ok**.

Editing a report context in a Personal View

You can edit an existing pinned report for customization purposes. This includes the context, which are the filter properties applied to a report's parent and linked node.

Procedure

1. Select the pinned report in a **Personal View**.

2. Click **Report context** from the gear icon.

3. Make the appropriate changes.

4. Click **Ok**.

Working with dashboards

A dashboard is a collection of reports that all display on the same page. You can rearrange and resize the reports in a dashboard.

Dragging a report to a new position

You can move a report to a different position in the report pane.

Procedure

1. Mouse over the upper right corner of a report.

   A set of icons appear.

2. Click and hold the **Drag this element to another place** icon and move the report.

Arranging reports in the report pane

By default, multiple reports are stacked one on top of one another. You can display multiple reports side by side.

Procedure

1. Click **Display**.

2. In the **Report Type** area, click **Display**.

3. Select how many reports to display per line.

4. Click **Apply**.

Resizing a report

You can adjust the width and height of a report to accommodate your display by using the report resize icons.

Procedure

1. Mouse over the upper right corner of a report .

   A set of icons appear.

2. Click a resize icon.

3. To save the change, click **save**.

Working with table reports

Users can customize table reports while in Browse Mode..

Applying filters to table columns

Filtering on a table column redisplays the report, showing only the rows that match the filter condition.

The filter icon ( ) in a column header indicates that the column can be filtered. Columns with metrics, dates, and times cannot be filtered.

Procedure

1. Click the icon in the column header.

2. In the text box that appears, enter the filter value using any of these methods:

   #### Note

   The values are case-sensitive.

   - Type a valid value for the column
   - Type a space, wait for the system to show suggestions, and select from the list
   - Start typing a value, wait for the system to show suggestions that start with your entry, and select from the list
   - Type a value containing wildcards. Supported wildcards are:

%	Matches any character any number of times. For example:
	■ `VPLEX%` matches any value that starts with VPLEX
	■ `%04` matches any value that ends with 04
	■ `%Unified%` matches any value that contains the characters Unified in the beginning, middle, or end
*	Same as %.
_	Matches any one character. For example:
	`__.%.%.%` matches any IP address whose first component is 2 digits.

3. Press **Enter**.

   The report redisplays, showing only those rows with values that match the filter. In addition, the following visual cues remind you that a filter is in effect:

   - The filter icon for the filtered column is blue.
   - The phrase **cancel filtering** appears in the sentence above the table.
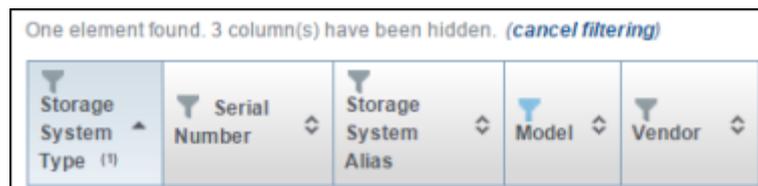
4. To revert to the original report, click **cancel filtering**.

Sorting on a table column

You can change the sort order of a table report. The column headers indicate the sort columns.

There are two ways to change the sort order of a table report.

Temporary change

Use the **sort** icon in a column header to sort the table by that column, for the current session. This procedure can sort by one column only.

Customize table columns

Use the **Customize Table Columns** icon above the upper right corner of the table to set a more permanent sort, and to specify a set of sort columns.

The following visual cues indicate which columns are the current sort columns.

- The header for a sort column is shaded blue, rather than grey.

- The sort icon is a single up or down arrow, not both.

- The header contains a numerical footnote indicating the sort position. A (1) indicates a primary sorted column. A (2) indicates a secondary sort within the primary sort. A (3) indicates the third sort, and so on.

You can see all three sort indicators in the first column header here:
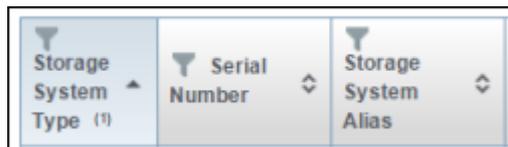
For a temporary sort change, use this procedure:

Procedure

1. Click the arrows in the column header.

   The table redisplays in resorted order, based on the column you requested. A single arrow indicates ascending or descending order.

2. To reverse the sort order, click the arrow.

Show, hide, rearrange, and sort table columns

The **Customize Table Columns** icon lets you make custom changes to a table report while still in Browse mode.

Show or hide columns

You can customize a report by hiding unwanted columns.

Some reports define hidden columns. For example, many reports define columns for the business unit, customer, and location data enrichment fields, but hide the columns by default. If your installation defines values and data enrichment rules for one or all of those optional fields, those columns become meaningful.

Rearrange columns

You can move columns to appear in your preferred order.

Sort

You can override the default sort order defined for a table. You can specify one or multiple columns to use for sorting.

Procedure

1. Click **Customize Table Columns** ⊞ , located above the table on the right.

   The **Table Customization** dialog appears.

2. To change the order of columns in the table, drag column names up or down in the **Displayed Columns** list.

3. To show or hide columns in the table, choose one of the following:

Option	Description
Display the column	The column is always displayed.
Hide the column if it is empty	The column is hidden if its cells on the current report page are all empty. With this option, a sparsely populated column might appear on one page and be hidden on the next page.
Never display the column	The column is always hidden.

Note

These options might not always be available. The underlying report definition controls whether users can show or hide a column.

4. To sort the table based on the values in one or more columns:

   a. Drag the columns to use for sorting to the **Sorted Columns** list.

      Drag a column into the sorted columns box, not the white space below it.

   b. For each sorted column, select **Ascending** or **Descending**.

   c. Drag to rearrange the sorted columns according to the sort order needed.

5. Click one of the following:

Button	Description
Apply	Apply changes on the report until it expires
Save and Apply	Apply changes and save permanently (until you save other changes)
Revert to default report	Cancel changes and revert to the report as defined in Edit mode
Revert to saved customization	Return to values saved with **Save and Apply**

Working with graphical reports

Users can customize graphical reports while still in Browse Mode.

Toggling values in graphs

When metrics appear in the legend, you can toggle their display on the graph.

Procedure

1. Click the metric in the legend that you do not want displayed.
2. Click **Apply** to display the remaining metrics.

Setting upper and lower bounds to graphs

You can change the displayed range of values for a graph.

Procedure

1. In the **Lower Bound** field, enter the lowest value to display.
2. In the **Upper Bound** field, enter the highest value to display.
3. Click **Apply**.

Reverting to the original bounds of a graph

If you made changes to the bounds of a graph, use this procedure to revert to the original bounds.

Procedure

1. In the **Lower Bound** field, delete the value.
2. In the **Upper Bound** field, delete the value.
3. Click **Apply**.

Changing the appearance of graphs

You can customize the curve, width, marker, and color of graph metrics.

Procedure

1. Display a graph.
2. Click the **Graph Customization** icon.
3. Change the curve, width, marker, and color for the metric.
4. Click **Ok**.

Working with topology reports

Topology reports show relationships between components in the infrastructure. You can drill down from a topology map to detailed reports about the components.

Finding and filtering nodes on topology reports

You can find and filter specific nodes on a topology report.

Procedure

1. On a storage system mixed report, hover the cursor over the **Topology Map** title.

   A text box and several buttons appear.

2. To find a node on the topology report, type the beginning of the node name in the text box and click **Find a node** (magnifying glass).

3. To restrict the map to show one node only, type the beginning of the node name in the text box and click **Filter nodes** (funnel).

Customizing User Settings

User settings that you can customize include your user account information, such as the password and associated email address, general UI display preferences, and individual table report display preferences.

To access the Settings dialog, click **Settings** in the banner area of the User Interface.

Set the navigation style

You can change the navigation style for your user account.

The administrator sets a global default navigation style under **Administration** › **Portal** › **Default Display**. Your user account settings can override the global setting.

Procedure

1. In the banner at the top of the User Interface, click **Settings** .

2. Click **User Preferences**.

3. In **Navigation Style**, make a selection.

Option	Description
default	The administrator's global setting
tree	Hierarchical tree
icon	Thin icon column

4. Click **Save**.

Modifying your user data

You can change the user data that was created by a global administrator. You can modify your password, title, name, and email address used to send report notifications.

Procedure

1. Click **Settings** .

2. On the **User Data** tab, make the changes as needed.

3. Click **Save**.

Setting your reporting preferences

You can set the behavior for displaying reports for your user account. The choices you make here override the default settings made by an administrator for the portal or in the user profiles.

Procedure

1. Click **Settings** .

2. Click the **Preferences** tab.

3. Select the **Language** to use.

4. Select the **Navigation Style** to use.

Option	Description
default	The administrator's setting for the portal
tree	Hierarchical tree
icon	Thin icon column

5. In **Report Auto Refresh Rate,** leave blank to turn off auto refresh, or type the interval between redisplays. The default setting comes from the **Administration** › **Profile** configuration.

6. In **Background Reports**, select one of the following:

Option	Description
Show the Question	When a report takes a long time to generate, a question appears asking if you want to wait until the report finishes or if you want to finish the report in the background and then save it. **Note** For any user session, only one background report can run at a time. If you answer yes when another report is still running, the running report is aborted and will not be generated.
No Background Reports	No question appears because generating a report in the background is not an option.

7. In **Stored Reports,** select whether you want a confirmation email sent to you after a report is saved.

8. Click **Save**.

Configuring an SMTP server

Configure an SMTP server to enable the email features in the product.

Procedure

1. Click **Administration** › **Modules** › **Alerting**.

2. In the banner, click **Global Settings**.

3. Configure the SMTP fields.

4. Click **Save**.

You have successfully set the SMTP variables on the Backend (alerting) server. In a 1-server setup, these settings also apply to the Frontend server.

5. In a setup with more than one server, set the SMTP variables on each Frontend server.

Note

This step is required in a 4-VM vApp, or if the installation includes more than one Frontend.

a. On the Backend server, copy the SMTP variables in `/opt/APG/bin/apg.properties`.

b. On each Frontend server, paste the variables into `/opt/APG/bin/apg.properties`.

6. Restart the Tomcat server.

a. Go to **Administration** › **Centralized Management** › **Logical Overview** › **Miscellaneous** › **Web Servers**.

b. Click a Tomcat server.

c. Click **Restart**.

Managing Users

An administrator can add, edit, and delete users. A user can override the settings provided by the administrator.

To change a password or email setting assigned by the administrator, a user can click **Settings** in the banner area of the report window.

Adding a user

When you add a user, you set the login credentials and email address in which to send notifications about reports.

Procedure

1. Click **Administration** .

2. Under **User Management**, click **Users**.

3. Click **New User**.

4. On the **User Data** tab, type the **User Login**.

This value is case sensitive.

5. For the password, do one of the following based on the type of authentication:

Option	Description
Internal authentication	Type the user login password.
External authentication	If using an external authentication mechanism, such as LDAP, do not type the user login password since it is not needed.

6. Select the **Title** of the user.

7. Type the **First Name** and the **Last Name** of the user.

8. Type the **Email Address**.

   This address receives notifications about reports, such as when a certain report is generated.

9. Click **Save**.

   A user can override these settings on the **User Settings** page.

Copying users

You can copy the settings of an existing user to create a new user.

Procedure

1. Click **Administration** ⚙.

2. Under **User Management**, click **Users**.

3. Select the user and click **Copy**.

4. Type the settings for this new user.

5. Click **Save**.

Editing users

You can modify the settings of existing users.

Procedure

1. Click **Administration** ⚙.

2. Under **User Management**, click **Users**.

3. Select the user and click **Edit**.

4. Make the edits.

5. Click **Save**.

Deleting users

When you delete a user, all the user properties are removed.

Procedure

1. Click **Administration** ⚙.

2. Under **User Management**, click **Users**.

3. Select the user and click **Delete**.

4. Click **Ok** when the warning message appears.

Centralized Management

Centralized Management provides access to the system servers, log and diagnostic files, monitored devices, remote support configuration, and system updates.

Centralized Management is a node in the Administration interface.

Procedure

1. In the banner area of the User Interface, click **Administration**.

2. In the navigation tree, click **Centralized Management**.

   A new browser tab opens for Centralized Management.

Physical overview

The Physical overview provides an overview of system server health, system services management commands, and access to licensing information.

Viewing system server metrics

The Physical overview shows system server hostnames, availability, and recent server health trends.

The Physical overview shows the following metrics for the servers:

- CPU utilization percentage and load
- Memory utilization percentage and swap space
- File system space used

Procedure

1. Go to **Administration** › **Centralized Management**.
2. Hover your cursor over the lines in the graphs to see more details about each metric.
3. Click the server name to go to more details about the system services running on the server.

Starting and stopping system services

You can start , restart, or stop system services from the Administration interface.

Procedure

1. Go to **Administration** › **Centralized Management** › *server_name*.
2. On the **Services** tab, right-click a service name.
3. Select an action from the menu.

   Actions include **Stop**, **Start**, or **Restart**, as appropriate.
4. Click the **Refresh** icon above the upper right corner of the table to see the results of your action.

Configuring system services

You can reconfigure system services from the Administration interface.

Before you begin

Procedure

1. Go to **Administration** › **Centralized Management** › *server_name*.

2. On the **Services** tab, right-click a service name.

3. Select **Configure service** from the menu.

4. Make needed changes on the dialog and click **Save**.

   The service is restarted using the new settings.

Obtain licensing information

You can view the current system license and list of licensed services.

Procedure

1. Go to **Administration** › **Centralized Management** › *server_name*

2. Click the **Licenses** tab.

Logs and diagnostics

The system modules write to log files that are accessible from the Console. The Diagnostic files are a collection of configuration and log files that can help analyze problems.

For information about log entries or the contents of configuration files, see the *EMC M&R Backend Administration Guide*.

Accessing log files

You can download or view the log files generated by the system modules. You can watch the end of any log file.

Procedure

1. Go to **Administration** › **Centralized Management** › **Logs and Diagnostics** › **Log Files**.

   The table shows all of the available log files, when they were last modified, and their size.

2. To view the end of any file, click the **Tail** icon in the **Filename** column.

   A window opens showing the last set of entries in the file.

3. To watch as new entries are added, click the **Tail** icon, and then scroll to the end of the window.

   As new entries are written to the log, they are visible at the end of the list and the display rolls up.

4. To view the entire contents of a file that is less than 1 MB, click the **View File** icon in the **Filename** column.

5. To download files, click the checkboxes to select the rows, and click **Download**.

Generating and downloading diagnostic files

Diagnostic files are a collection of system configuration files and log files that can help in researching problems.

Procedure

1. Go to **Administration** › **Centralized Management** › **Logs and Diagnostics** › **Diagnostic Files**.

2. Click **Generate diagnostic files**.

   This action generates a zip file of XML, CSV, properties, script, and java files that define your current configuration and implementations. Some log files are also included.

When generation is completed, a **Download** button appears.

3. Click **Download** to access the `.zip` file.

Devices Management

Devices Management provides a central location to view and manage all devices that are being monitored. You can add new devices to be monitored, change device connection credentials and parameters, and test connectivity to devices.

There are several ways to add new devices:

- Add a single device manually
- Add devices in bulk by importing a CSV file

Viewing all known devices and testing connectivity

You can view a list of the devices that are known to the system. You can verify the connection parameters and availability for a device.

Procedure

1. Navigate to **Centralized Management** › **Devices Management**.

   The Devices Management table lists all of the device types that are being monitored and the number of devices in each type.

2. Click the device type of the device you want to test.

   The **Collected Devices** tab lists all of the devices currently being monitored.

3. Select a device to test connectivity to it.

4. Click **Test** to verify that the device can be reached.

Changing device configuration

You can change the connection parameters and other configurations for a device.

Procedure

1. Navigate to **Centralized Management** › **Devices Management**.

2. Click the device type of the device you want to test.

3. On the **Collected Devices** tab, click the row of the device to test.

   The configuration dialog for that device appears.

4. Change the parameters as needed.

   See the product SolutionPack documentation for information.

5. Navigate to **Centralized Management** › **Devices Management**.

6. Click **Test** to verify connectivity.

7. Click **OK** to save the changes and exit the dialog.

   The device row now appears blue and in italics, indicating that the changes must be distributed to the collector servers.

8. Click **Save,** and then **OK** to confirm the save.

9. Click **OK.**

Adding a new device manually

Using **Discovery Center** you can manually add a new device to be monitored.

Procedure

1. Navigate to **Centralized Management** › **Devices Management** › *device_type*.

2. On the **Collected Devices** tab, click **Add new device**.

3. In the device configuration dialog, enter the parameters for the new device.

   The configuration dialog is device-specific. See the product SolutionPack documentation for information about each field.

4. Click **Validate and add**.

   The validation tests connectivity to the device using the provided information. If an error indicator appears, correct the information and click **Test** to try again.

5. Click **OK** to confirm the add.

   The new device appears in the Collected Devices table in blue and italicized, indicating that it is not yet saved in the system.

6. Click **Save**.

7. Click **Ok** to confirm the save.

8. Click **Ok**.

   If the connectivity status is a green check, the new device is now being monitored.

Adding devices using CSV files

You can import a properly formatted CSV file to add devices.

Each device type provides a template that describes the required format of the CSV file for the device type. You can also export existing devices into a CSV file.

Importing a CSV file

You can import a CSV file containing information about new devices to be monitored.

Before you begin

To import new devices, you must already have a SolutionPack installed that supports the device type to be imported.

To get a template of the CSV file for a specific device type, use the **Export Template** button.

Procedure

1. Navigate to **Centralized Management** › **Devices Management**.

2. Click the device type you would like to add.

3. Click **Import**.

   The **Import new devices** popup appears.

4. For **Merge the devices to the existing ones?**

Option	Description
Do not check the option	Overwrite the current list of devices with the devices from the CSV file

Option	Description
Check the option	Keeps the current list of devices and add (merge) devices contained in the CSV file to the current list

5. Click **Choose File**.

6. Navigate to your CSV file.

7. Click **Ok**.

8. Click **Continue**.

   The new devices appear in the Collected Devices table in blue and italicized.

9. Click **Save**.

   The **Save Devices** popup is displayed.

10. Click **Ok** to overwrite or merge the devices.

11. Click **Ok**.

Exporting devices

You can export the list of devices currently being monitored.

Procedure

1. Navigate to **Centralized Management** › **Devices Management**.

2. Click the device type of the devices that you want to export.

3. Click **Export**.

   Follow your browser's prompts to save the file.

Exporting a CSV file template

A template shows the expected format of the CSV file for the bulk import of devices. The template includes headers.

Before you begin

To export a CSV template file, there must already be one device of that device type available.

Procedure

1. Navigate to **Centralized Management** › **Devices Management** › *device_type*.

2. Click **Export Template**.

3. Follow your browser's prompts to save the file.

CONFIGURATION menu

The Centralized Management CONFIGURATION menu provides access to downloading and troubleshooting services from EMC.

Configure ESRS

EMC Secure Remote Support (ESRS) sends information to EMC that helps with troubleshooting.

ESRS is optional.

Procedure

1. Click **Administration** ⚙.

2. Click **Centralized Management**.

3. In the top right corner of the Centralized Management window, click **CONFIGURATION** ›
   REMOTE SUPPORT.

4. If you have a valid license for this service, configure the server and login credentials.

Online Update overview

Online Update automatically downloads the latest versions of the SolutionPacks and
EMC M&R components from the EMC Update server to the Module Repository on the
Centralized Management (CM) server.

In a multi-server environment, the downloaded modules are distributed to all of the
remote servers managed by the CM server.

Configuring server settings for online updates

Procedure

1. Click **Administration** ⚙.

2. Click **Centralized Management**.

3. Click **Configuration** › **Online Update** .

4. Ensure that you are on the **Settings** tab.

5. By default, online update uses the EMC Online Support username and password
   specified under **Configuration** › **EMC Support**. If you want to use different credentials,
   click **Override Support Credentials**. These credentials are used only for online update.

6. Click the 🔌 icon to test connectivity to the update server.

   The ✅ icon indicates that connectivity to the server has been established.

   The 📉 icon indicates that connectivity to the server failed.

7. Click **Save**.

Enabling the online update task

Enable the Online Update task to download the latest updates from the EMC Update
server automatically.

Procedure

1. Click **Administration** ⚙.

2. Click **Centralized Management**.

3. On the **Physical Overview** page, click the *‹host_name›* - **Front End** where the Online
   Update task needs to run.

4. Click **Tasks**.

5. Type `OnlineUpdate` in the **Search** bar.

6. Click the **OnlineUpdate** scheduled task.

7. Click **Enable**.

Note

By default, this task is set to run once everyday at 12AM. You can customize the task schedule by editing the configuration file.

Running the online update task manually

At any time, you can run the Online Update task manually to access the available updates.

Procedure

1. Click **Administration** ⚙.

2. Click **Centralized Management**.

3. On the **Physical Overview** page, click the *<host_name>* - **Front End** where the Online Update task needs to run.

4. Click **Tasks**.

5. Type `OnlineUpdate` in the **Search** bar.

6. Click the **OnlineUpdate** scheduled task.

7. Click **Run Now**.
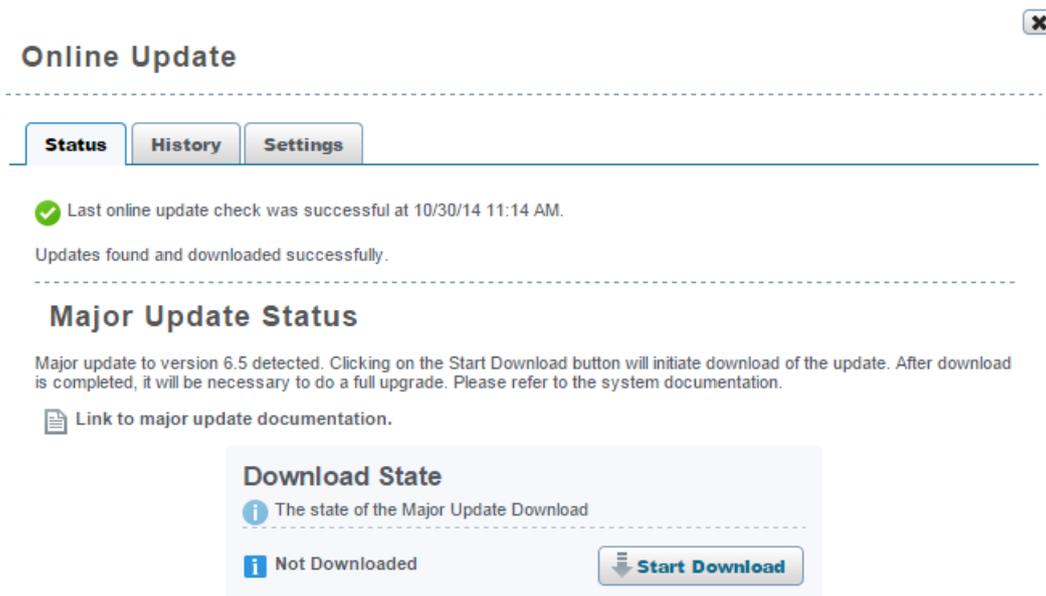
Online Update Status

The Online Update Status tab indicates whether or not the last online update check was successful, provides the date and time of the last successful check, and lists any updates that are available for download.

Figure 1 Online Update Status

> ## Online Update
>
> | **Status** | **History** | **Settings** |
>
> ✅ Last online update check was successful at 11/3/14 12:00 AM.
>
> No updates available for download.
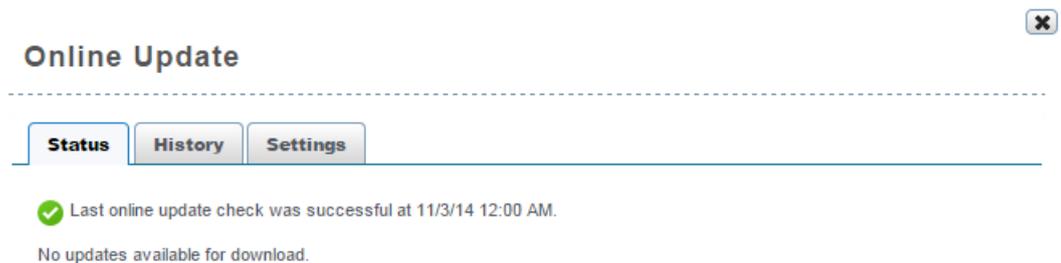
If a major update of the EMC M&R platform is detected, the Status tab includes a Major Update Status section that describes the version that is available, provides a link to the upgrade documentation, and includes a Start Download button.

Figure 2 Online Update Status with a major version update detected

Downloading a major update

You can use Online Update to download a major version of the EMC M&R platform. You should only download a major version if you intend to immediately complete the full upgrade process.

Procedure

1. Click **Administration** ⚙.

2. Click **Centralized Management**.

3. Click **Configuration › Online Update**.

4. Click the **Status** tab.

5. Click **Start Download**. When the download is finished, the Download State will change from "Not Downloaded" to "Complete."

6. Complete the upgrade process as described in the upgrade documentation.

Online Update History

The Online Update History tab provides a download history with the names of the components, the version numbers, and the date and time of the downloads.

The History tab also allows you to search the download history for a particular component name or version number.

Disabling the online update task

You can disable the Online Update task if you prefer to manually download the updates from the EMC Update server.

Procedure

1. Click **Administration** ⚙.

2. Click **Centralized Management**.

3. On the **Physical Overview** page, click the *‹host_name›* - **Front End** where the Online Update task needs to run.

4. Click **Tasks**.

5. Type `OnlineUpdate` in the **Search** bar.

6. Click the **OnlineUpdate** scheduled task.

7. Click **Disable**.

Alerting

The Alerting module provides access to alerting administration features.

Administrators use **Modules › Alerting › Alert Definitions** to:

- Enable or disable alert definitions. These actions control which alerts are generated.

- Configure parameters in alert definitions. Example parameters are threshold settings in comparator statements and email addresses for alert notifications.

- Add and configure a new context to an alert definition. The same alert definition could be configured with different parameter settings for different situations.

- Edit alert definitions. For example, you might add actions or change filters.

Users access the alerting reports on the User Interface, in Browse mode.

Change the refresh rate on alerting reports

Alerting reports are installed with preconfigured automatic refresh interval set to 60 seconds. You can change that value. To disable automatic refresh, change the setting to 0.

For a small number of alerts, you can reduce the refresh interval to as low as 15 seconds.

For larger events databases (with a total number of active alerts more than a few thousand), it may take a while for the alerting reports to load. In addition, if those reports have the automatic refresh interval set too low, the alerting reports become unusable. You can increase the refresh interval or disable automatic refresh.

If automatic refresh is disabled, you can always refresh manually with the browser's refresh feature to update the report as needed.

Procedure

1. Go to the report whose refresh rate you want to change, and click **EDIT MODE**.

2. Click the **Report Details: Table** tab.

3. Scroll to the bottom, and expand **Display Options**.

4. Change the value in **Refresh interval (secs)**.

   To disable automatic refresh, enter 0.

5. Click **Save**.

6. Click **BROWSE MODE** to return to the report display.

Alert definitions

An alert definition defines the actions that should occur when an event meets defined conditions.

For an event to result in an action, such as an email notification or getting added to the database, it must match a valid and ENABLED alert definition.

SolutionPacks install predefined alert definitions appropriate to their function and devices. You can create custom alert definitions.

An alert definition contains the following components:

- An entry point filter defines which events are handled by this alert definition. The filter operates on the fields (properties) in the event data. The filter identifies events by matching values in data fields, such as a MIB name and field, or a collector name and metric, or an event name and device type.

- Operations and conditions are optional components in an alert definition. Operations provide a way to manipulate the metric data in an event. Conditions test the data and provide alternate outcomes for different actions.

- Actions define what should occur as a result of the event, such as an email, logging file entry, SNMP trap to an Events database, or traps to other applications. Only events that are written to the Events database appear in the alerting reports.

Access alert definitions

You can configure and enable or disable alert definitions.

Procedure

1. Click **Administration** › **Modules** › **Alerting** › **Local Manager** › **Alert definitions**.

2. Expand the alert definition folders until the alert definition name appears.

   In the right pane, the **Type** column indicates whether the entries are folders or alert definition names.

	Alert definition folder
	Contextualized alert definition
	Non-contextualized alert definition

3. In the table in the right pane, right-click an alert definition, and choose one of the following actions.

Configure	Provides access to the configuration dialogs for each component in the alert definition. Use this option to change the configuration of a component, such as email recipients on Mail actions or threshold values in comparators.
Enable/ Disable	Activates or inactivates the alert definition.

Enable/disable alert definitions

Many alert definitions are installed in the disabled state. You need to enable them if you want the events defined by their filters to generate alerts.

Procedure

1. Go to **Administration** › **Modules** › **Local Manager** › **Alert definitions**.

2. Expand the folders to find the alert definitions you want to enable or disable.

3. In the right pane, use the **State** column to determine the status of alert definitions.

State column	Description
empty	This is a folder. Click it to show its contents.
✅	The alert definition is enabled.
🚫	The alert definition is disabled.
⚙	The alert definition requires some configuration before you can enable it. Right-click the row and choose **Configure**.

4. To enable or disable an alert definition, right-click the row and choose **Enable** or **Disable**.

Contextualized and non-contextualized alert definitions

Contextualized alert definitions allow for more than one set of configuration values. Different named contexts can be configured differently.

Contextualized alert definitions provide the following advantages:

- If future SolutionPack upgrades change the alert definition, your customized parameter settings are not affected because the contexts are saved separately from the alert definition.

- You can define several contexts, or sets of values, for the same parameter set, and enable/disable the contexts separately. For example, you might have different settings for production and testing, or you might preserve the installed values in the default context and create a new context for your customized values.

When you configure a contextualized alert definition, you select the context that you are providing values for. You can create and name new contexts.

Non-contextualized alert definitions can have only one set of configuration values.

Configuring an alert definition

You can change the configurable settings in an alert definition.

Procedure

1. Click **Administration** › **Modules** › **Alerting** › **Alert Definitions**.

2. In the table of alert definitions, expand the folders to find the alert definition to configure.

3. Right-click the alert definition and choose **Configure**.

   The configurable parameters are displayed.

   - If the alert is contextualized, you see one or more named contexts, with the configurable parameter names and the values for each context. Out of the box, you see one context named **Default**.

   - If the alert is not contextualized, you see the configurable parameters and the current settings.

4. For a contextualized alert, you can either:

   - Change the values in an existing context.

   - Create a new context:

    a. Click **Add**.

    b. Name the new context, and click **OK**.

    c. Type values in the new context.

    d. For each context, choose **Enable** or **Disable**. If multiple contexts are enabled, the incoming events are processed multiple times, once for each enabled context.

5. For a non-contextualized alert, change the values in one or more fields.

6. Click **Save**.

Accessing reports from outside of the Console

You might want to bookmark a report, include the report or its URL in another document or email, or have a third-party application access and display the most current version of a report.

The following methods for accessing a report from outside of the Console are supported:

- Copy the URL of a displayed report in the Console, and save it for use elsewhere
- Use the Frontend Report Lookup tool to access a report using unique IDs and report paths
- Construct a URL using supported parameters

Getting the complete URL for a report

With the complete URL of a report you can email the link to a report or bookmark the report in your browser.

Procedure

1. Click **Tools › Show Report URL**.

   The URL for the report appears in a popup.

2. Copy the URL.

Frontend report lookup tool

The Frontend report lookup tool finds a report using report names and unique identifers (UIDs), rather than the URL syntax.

You can use the lookup tool in a web browser URL field. A third-party application can use the lookup tool to request a report and display the report in its own context.

Syntax

```
http://server:port/APG/lookup/{uid}/report_name/report_name/.../*
```

where:

server
> Is the Frontend server name.
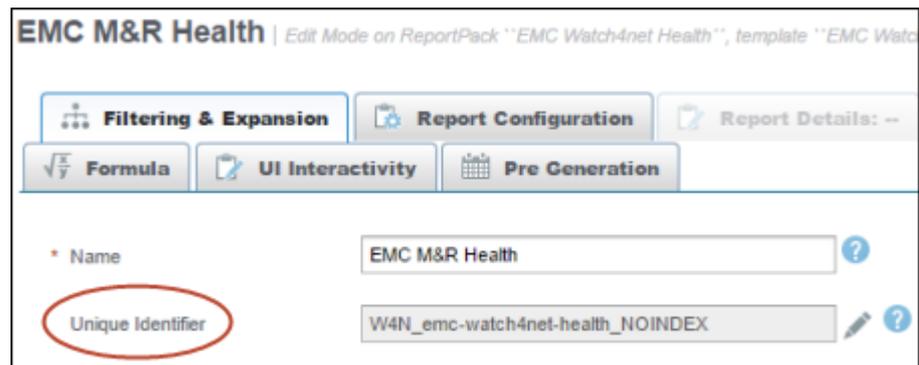
port
> Is the Frontend port access; default is 58080.

uid
> Is the unique identifier assigned to a top-level branch in the reporting tree.

To find a UID:

1. Navigate to the report.
2. Click **EDIT MODE**.
3. If a message appears stating that the report is linked, click the link in the **Linked to** field.
4. On the **Filtering and Expansion** tab, look for the **Unique Identifier** field.
5. If the **Unique Identifier** field does not exist, try a report that is higher in the reporting structure.

The following image shows the UID for the EMC M&R Health SolutionPack reports in the Report Library.

report_name

Is the portion of the report path after the report represented by the *uid*. The report path is a combination of the breadcrumb at the top of the report and tab names if they exist.

For example, consider the following report path:

The lookup path for the Arbiter Load Balancer report is:

```
myserver.emc.com:58080/APG/lookup/{W4N_emc-watch4net-
health_NOINDEX}/Collecting Level Performance/Arbiter Load
Balancer/*
```

* (as last component of report_names)

The asterisk is required if there are more reports under the requested report. In most cases, it is required because drill down reports are children of a report. In the previous example, the asterisk is required because of drill downs to individual load balancer reports.

Examples

To use the following examples, replace the *server_name:port*.

Example

Report Path:

Explore › **All Devices** › **List of Devices** › › *device_name*, and *tab_name*

Lookup string:

```
http://myserver.emc.com:58080/APG/lookup/{W4N-EXPLORE-ANY-
DEVICE_NOINDEX}/000195701185/Capacity/*
```

Example

Report Path:

Report Library › **EMC M&R Health** › **Collecting Level Performance** › **Arbiter Load Balancer**

Lookup string:

```
http://myserver.emc.com:58080/APG/lookup/{W4N_emc-watch4net-
health_NOINDEX}/Collecting Level Performance/Arbiter Load
Balancer/*
```

Report URL syntax

The reports in the interface are available to third-party client tools that use the URL syntax and the auto-login functionality.

URLs

The base URL is: **http://[APGserverIP:port#]/APG/?param=value&param=value**

The URL to display reports on a full page is: **http://[APGserverIP:port#]/APG/report.jsp?param=value&param=value**

The URL to display reports in jpg, png, pdf, svg, xls, and csv formats is: **http://[APGserverIP:port#]/APG/report.*format*?param=value&param=value**

You must replace *format* in the above URL with the desired format. For example: **http://[APGserverIP:port#]/APG/report.csv?param=value&param=value**

Tree management

Syntax	Description
select=*<nodeid>*	Displays the report of the specified node.
expand=*<nodeid>*	Expands the selected node and then the parent nodes.
collapase=*<nodeid>*	Collapses the selected node and any child nodes.
collapaseALL	Collapses the whole tree.

Report settings

Syntax	Description
display=*<code>*	The code numbers for the display modes: • 0=normal display mode • 1=summary display mode with one graph per line • 2=summary display mode with two graphs per line

	• 3=summary display mode with three graphs per line
mode=*<code>*	The codes for the report modes: • srt=table report mode • lrt=leaf table report mode • frg=graph report mode • srg=children report mode • nrx=node report mode • vrx=baseline report mode • stk=stacked chart report mode • hb=horizontal bar chart report mode • pie=pie chart report mode • gg=gauge chart report mode • ico=icon report mode • mix=basic mixed report mode • dmx=mixed default preferences report mode
period=*<seconds>*	The period, in seconds, of the selected aggregate. Zero indicates real time. This period must exist in the database.
type=*<code>*	Not applicable when the period is zero. The code numbers for the aggregate types are: • 3=average • 4=minimum • 5=maximum • 6=sum • 7=last value • 8=number of aggregated values • 9=timestamp of the last aggregated value
var_idx=*<id>*_*<id>*_*<id>*...	A list of indexes separated by underscores that restricts the displayed variables.

Graph display preferences

Syntax	Description
width=*<pixels>*	The graph width in pixels.
lower=*<value>*	The lowest value displayed on graphs.
upper=*<value>*	The highest value displayed on graphs.

Time management

Syntax	Description
`durationType=<code>`	The code to use as the default for the report time range description: • n=not applicable because duration is based on something else such as a timestamp • p=previous duration • l=last duration • c=current duration
`duration=<code>`	The code to use as the default for the report time range: • a=custom code that is a combination of numbers and units • s=seconds • m=minutes • h=hour • d=day • w=week • M=month • y=year You can use as many duration codes as needed for the report time range but you cannot duplicate a code. You can also use calendar in the duration code followed by `start` and `end` or `start_ts` and `end_ts`, as explained in the following rows.
`start=<date>end=<date>`	The time range of the requested report. The *‹date›* field has the YYYY-MM_DD HH:MM format. **Note** URL encoding may transform spaces into plus signs and colons and periods into %3A.
`start_ts=<timestamp>end_ts=<timestamp>`	The time range using timestamps of the requested

| | report. These are UNIX timestamps. |

Advanced time management

Syntax	Description
itz=*<timezone code>*	The time zone for the report, which uses standard zone names such as America/Montreal.
tf=*<time filter.expression>*	The maintenance period for the report. The ‹time filter.expression› field consists of *‹dom›*;*‹dow›*;*‹hod›* to represent the following: • dom=comma-separated list of days in a month between 1 and 31. For example, 1, 2, 10 represent the first, second, and tenth day of the month. • dow=comma-separated list of days in a week between 1 and 7, with 1 starting on Sunday. For example, 1 and 2 represent Sunday and Monday. • hod=comma-separated list of hours in a day between 0 and 23. For example, 12 and 13 represent 12pm and 1pm.

Query and variable selection

When using this syntax, always check that the URL encoding did not change spaces into plus signs.

Syntax	Description
search-base=*<base>*	The node from which the search begins. The *‹base›* field can contain the root node, which is the default, or another node combined with a parameter.
q=*<search string>*	The query string for the standard or quick search mode. It is a space-separated list of tokens.
qsp=*<search properties>*	The space-separated list of properties in which to search.
qsg=*<grouping properties>*	The space-separated list of node expansion to group query results.
qf=*<search filter>*	The variable selection filter.
qg=*<grouping properties>*	The space-separated list of node expansion to group query results.

Auto-login

Syntax	Description
autologin=*<user>*:*<pass>*	Bypasses the **Login** page by supplying user credentials to the URL. Since the colon is part of the auto-login syntax, the username and password cannot contain a colon.