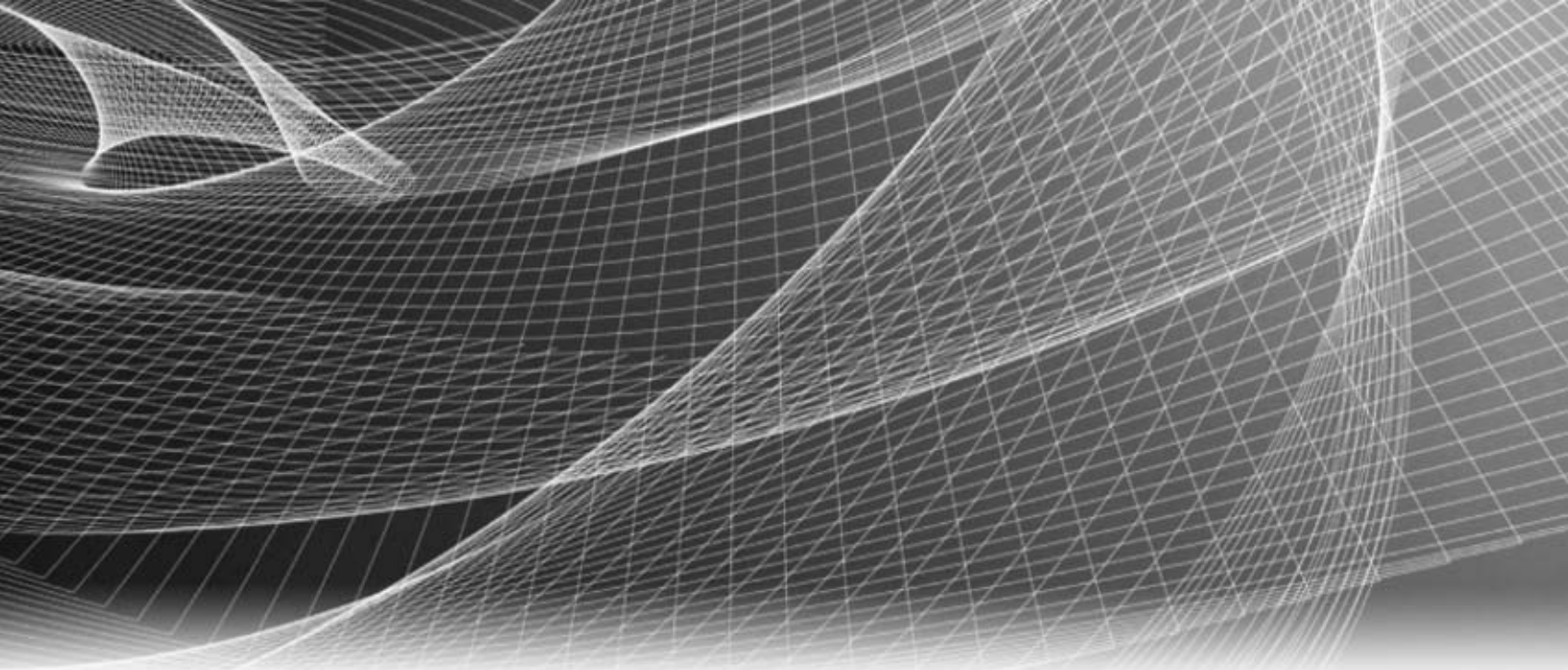




EMC[®] Watch4net[®]

Version 6.2

Web Portal Guide

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Getting started

This guide is for anyone who uses APG to create and view reports including people who:

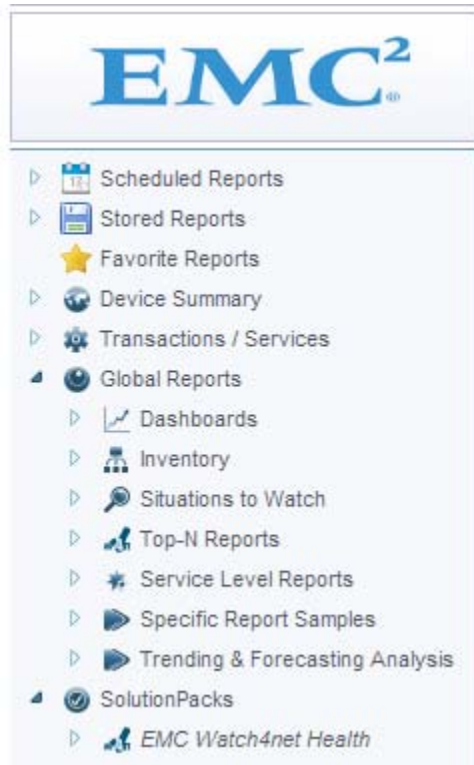
- read, search for and store reports,
- set up, edit and schedule reports,
- have limited administrative access to some management features.

Topics

- [Welcome to APG - Watch4net](#)
 - [Supported browsers](#)
 - [About the APG Web Portal](#)
 - [Key APG concepts](#)
 - [Log onto APG](#)
 - [Where to get help](#)
-

Welcome to APG - Watch4net

The APG software suite is a versatile tool for monitoring and reporting performance data for all aspects of your infrastructure. APG has modules that collect, aggregate and insert data into one or more databases that the APG Web Portal uses to display reports.

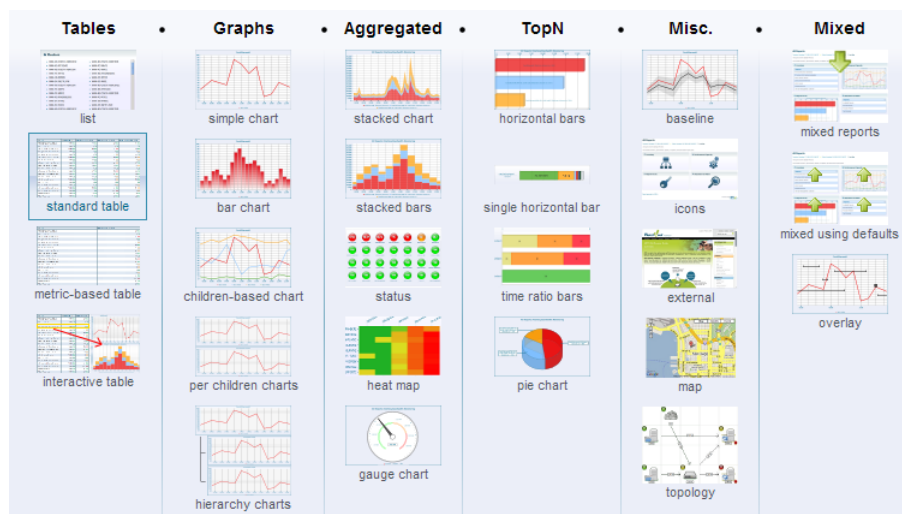


The APG Web Portal offers a variety of reports that cover all aspects of your performance data and infrastructure.

You can also create your own reports or customize pre-defined reports to suit your needs.

APG comes with pre-defined reports but you can add report sets called SolutionPacks. SolutionPacks are groups of individual reports that offer greater detail and insight into specific technologies/vendors or address a common reporting theme.

APG offers a wide variety of report types, including standard tables, graphs, and specialized reports such as map, topology, and mixed reports, which combine several reports on one page.



Report editors can choose from many report types.

The APG Web Portal gives you a robust suite of user management tools. From its **Administration** area, you can control users, profiles, roles and set who has permission to browse and edit reports and access parts of the software, including its configuration modules.

Administration

APG Frontend Management

APG Portal

-  Scheduled Reports
-  Stored Reports
-  User Sessions
-  Running Reports

ReportPacks

 List / Import ReportPacks

ReportPacks are pre-defined reports dedicated to a specific technology or vendor, including built-in metrics, formulas and analytics.

User Management

-  Users
-  Profiles
-  Roles

A user contains personal information (login, password, email), is part of one profile (which defines their global properties), and can have zero or more roles (which defines their rights and report accesses).

Modules

Frontend

-  Formula Editor
-  Outage Editor
-  Real Time Grapher
-  Management of Database Metrics
-  Topology Management

Collecting

-  MIB Browser
-  SNMP Collector
-  Device Discovery
-  Transaction Collector

Miscellaneous

-  Alerting
-  IP SLA Configuration

Centralized Management

-  Physical View
-  Logical View
-  Packages
-  Licenses
-  Audit Logs
-  Central Configuration Repository
-  SolutionPacks
-  Data Enrichment
-  Scheduled Tasks

Supported browsers

This guide assumes that you have the APG web application installed, configured and that you're using any of these web browsers to access the portal:

Internet Explorer	6 and 7	Windows	Browse-mode only
Internet Explorer	8, 9 and 10	Windows	Full support
Mozilla Firefox	Latest	Windows, Linux	Full support
Google Chrome	Latest	Windows, Linux	Full support
Apple Safari	Latest	Mac OS X and iOS	Full support
Apple iPhone & iPad	Latest	iOS	Available App

About the APG Web Portal

The main page of the Web Portal displays a report tree, where reports are organized into parent and child relationships in a nested node hierarchy. In **Browse** mode you can click a node to display its report. In **Edit** mode you can click a node to display the report configuration.

A Mixed report in Browse mode



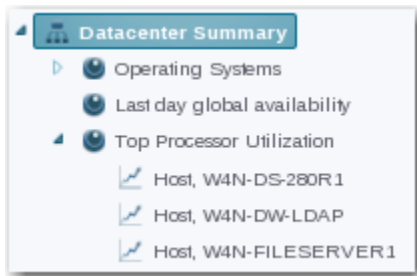
Key APG concepts

Nodes and reports

Nodes appear in the Report Navigation Pane on the left side of the screen. Reports appear on the right side when you selected a node. You click a node to generate and see a report.

Parent-child relationships

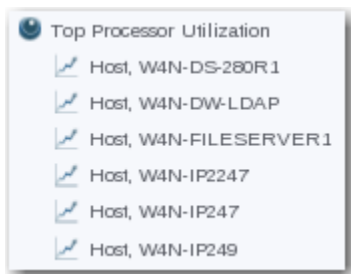
Parent-Child relationships create a hierarchal report structure in which a parent node report is affected by the expansion of the children nodes below it.



Data from child nodes can be shown in parent node reports

Expansion

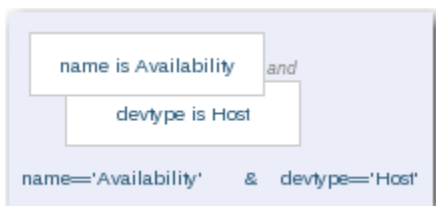
Expansions dynamically create nodes whose values depend on the expanded property. For example, a node that expands on device type (*devtype*) dynamically creates as many nodes as there are device types in the collected data. A node that expands on device type and device name (*device*) dynamically creates as many nodes as there are unique combinations of device types and device names. In this example, although there is only one device type, there are several device names resulting in multiple nodes.



In this example there is only one device type: Host.

Filtering

Filters enable report editors to select the data that will populate the reports. Report browsers can also use filters to search for reports. A typical use case is an expansion on device type. Although multiple device types may exist, you can use the filter to limit the values in the report to one or two such as *devtype is Host* or *devtype is Router* or *devtype is not Switch*.



With filters you structure the query used to produce a report.

Log onto APG

Log onto the APG Web Portal from a web browser with access to the web server running APG. Verify your login credentials with your APG administrator.

To log onto APG

- 1 Point your web browser to: *http://[serverIP:port]/APG*. The URL is case sensitive.
A typical default URL for logging into APG from the same system it is installed on is *http://localhost:58080/APG*. Other APG modules are accessible through the browser's address bar, or from the APG Administration area.
- 2 On the login screen, enter your user name and password and click **Sign In**.



Your login environment contains the settings configured for you by an APG administrator.

To access your settings, log onto APG and click the Settings link on the top menu.

APG automatically logs you off after four hours.

Where to get help

EMC support, product, and licensing information can be obtained as follows:

Product information

For documentation, release notes, software updates, or information about EMC products, go to EMC Online Support at:

<https://support.emc.com>

Technical support

Go to EMC Online Support and click Service Center. You will see several options for contacting EMC Technical Support. Note that to open a service request, you must have a valid support agreement. Contact your EMC sales representative for details about obtaining a valid support agreement or with questions about your account.

About APG reports

Topics

- [Overview of APG Reports](#)
 - [About the report types](#)
 - [About Table reports](#)
 - [About Graph reports](#)
 - [About Aggregated reports](#)
 - [About TopN reports](#)
 - [About Baseline reports](#)
 - [About Icon reports](#)
 - [About External reports](#)
 - [About Map reports](#)
 - [About Topology reports](#)
 - [About Mixed reports](#)
 - [About Overlay Reports](#)
 - [About report compatibility](#)
 - [Search for reports](#)
 - [Use Advanced search](#)
-

Overview of APG Reports

Reports are built from nodes which contain filters and formulas that define the metrics to display.

The report metrics that are displayed depend on the report type. Some reports show one line per metric, some aggregate the value of multiple metrics on the y-axis to produce a single series per node and others aggregate the values on the x-axis to produce a single value for the metric.

APG gives you powerful flexibility in how you display reports. You can sort columns, change the maximum and minimum values on the y-axis, the types of lines and colors to use for plotted variables or toggle the visibility of metrics for a graph. You can arrange the placement of multiple reports on a page. Graphs can use two separate y-axis in a report to visualize two sets of variables that use different scales.

You can mark reports as favorites, store them for quick retrieval, schedule them for regular generation and distribution, export them to a variety of formats or move them to My View, which gives you a one page view of several reports.

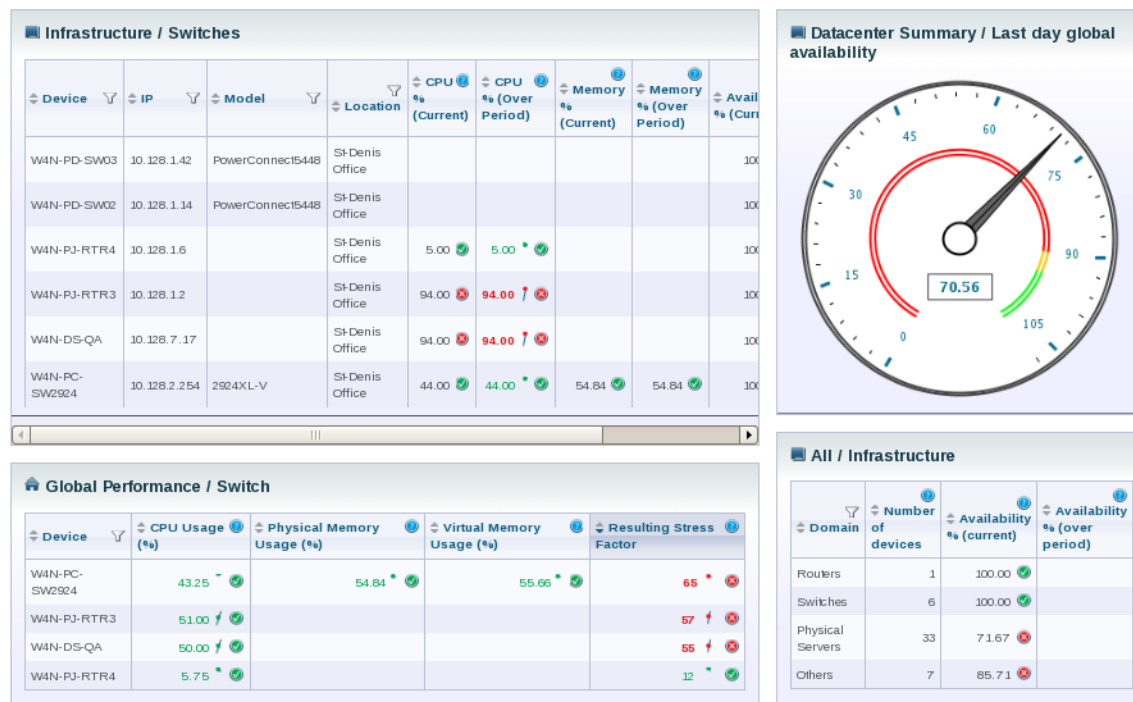
[All](#) >> [My Reports](#) >> [My View](#)

My Reports / My View

Saturday, December 25, 2010 2:21:26 AM EST >> Saturday, December 25, 2010 2:36:26 AM EST | **Last 15 Minutes**

This is the *My View* report.

This node has been created automatically the first time you have selected a report element to be displayed in *My View*. As long as you don't move or rename this node, each time you select a new report to be displayed into *My View*, it will be added to this page.



About the report types



Tables are lists with columns that are fully customizable.

A report list is the simplest table you can define. Lists display child node names and allow you to drill down to more specific reports. The report list is the default report type.

A standard table also displays one row per child node. For example, if your child node expands on device, your table will have one row for each unique device name in your network. A metric-based table is like a standard table except it displays the metrics available for the current node.

An interactive table allows you to control the display of an adjacent report.

See [About Table reports](#).



Graphs are reports that display the selected variables or values computed through formulas over time.

A simple chart gathers variables from the currently selected node. This report draws a single graph that contains all the variables over time.

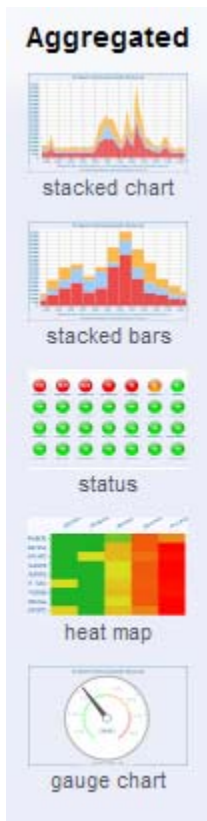
A bar chart is like a simple chart except that it displays values as bars instead of points. This report is compatible with the simple chart and baseline reports.

A children-based chart is like a simple chart except that data is taken from child nodes instead of the current node. It displays a single graph with one metric per child node. This report is compatible with the stacked chart and stacked bars.

A per children chart combines simple chart reports for each child into a single report. This chart gathers variables from each child node and assembles them into one graph per child. It produces as many graphs as there are children and each graph displays all the child variables.

A hierarchy chart contains one simple chart report for each node of the tree. The graphs are organized in a hierarchical way that follows the organization of the tree.

See [About Graph reports](#).



Aggregated reports are graphs that display data in an aggregated view.

A stacked chart displays one series per child on a stacked area chart, aggregating metrics from the same child node. This report is compatible with the children-based chart and stacked bars. A common use case for this type of graph is stacking egress and ingress data to show the total amount of traffic. Another use is to stack the total traffic for each router to show the total traffic for a network, stacked by interface.

A stacked bars graph is the same as a stacked chart except that it displays values in bars instead of connected points. This report is compatible with the children-based chart and stacked chart.

A status report aggregates data for each child using the specified aggregation function over the selected period. Each child node is displayed as a large colored symbol with the aggregated value and the name of the node displayed. Color thresholds can be defined.

A heat map report displays metrics in a two dimensional grid. Colors are used to represent metric values. Any metric property can be used to determine the x and y axis of the grid.

A gauge chart displays a single value at a time, which is the aggregation of the selected children using an aggregation function over the selected period.

See [About Aggregated reports](#).



TopN reports are used to rank results or to present the information so that you can easily compare metrics.

A horizontal bars graph aggregates data for each child using the specified aggregation function over the selected period. The display is in percentage. This report is compatible with the single horizontal bar and pie chart reports.

A single horizontal bar report uses the same data as horizontal bars but displays the proportion of each child with regards to all children in a single line.

A time ratio bars graph is similar to horizontal bars but with bars decomposed into stacked pieces. Each piece represents the percentage of time values lie in given intervals. For example, metric A was between values 0 and 40 90% of the time and above 40 10% of the time.

A pie chart is like horizontal bars but displays the result in the shape of a pie. This report is compatible with horizontal bars and single horizontal bar reports.

See [About TopN reports](#).



Miscellaneous reports allow you to display information in creative ways.

A baseline reports displays two lines and a gray zone. The colored line is the average value of the selected metric. The black line is the baseline and the surrounding grayed zone represents the deviation from the minimum and maximum value of the baseline. See [About Baseline reports](#).

An icon report displays the icons associated with the children of this report. See [About Icon reports](#).

An external report displays the content of a URL such as an external web page. See [About External reports](#).

A map report displays each child node as a point on a geographical map. This report is compatible with standard table reports in the display options, but the opposite is not true: if the report is by default a standard table you cannot choose a map report for it. See [About Map reports](#).

A topology report displays a diagram that represents all or part of your network. Network topologies are pre-defined in external XML files. See [About Topology reports](#).



Mixed reports enable you to combine several reports in a single report page or apply an overlay that displays events on top of a regular graph.

A mixed report uses the report type from any child node but retains the selected time period and aggregation from the selected node. This report is compatible with the mixed defaults report.

A mixed using defaults report uses the default report settings from any child node. This report is compatible with the mixed report.

An overlay report displays events superimposed on top of a graph report and a child table report listing a superset of events plotted in the overlays.

See [About Mixed reports](#).

About Table reports

A table report displays a table based on the columns you define. This type of report helps you quickly notice problems through visual thresholds.

Transactions / Services / Transactions (Iionix ACM)

Thursday, September 15, 2011 5:19:10 o'clock PM EDT » Friday, September 16, 2011 5:19:10 o'clock PM EDT | **Last 1 Day**

This report shows a list of items sorted by application names.

49 elements found, displaying 1 to 25.

Server	Application	IP	Port	Avg RT (ms)	Max RT (ms)	Availability % (current)	Availability % (over period)
W4N-PW-BKP2	ssh	10.128.7.20	22	0	8	100.00	100.00
W4N-PV-ESX1	ssh	10.128.1.18	22	0	15	100.00	100.00
W4N-PL-MX1	smtp	192.168.101.2	25	27	237	100.00	100.00
W4N-PL-MX1	ssh	192.168.101.2	22	26	209	100.00	100.00
W4N-PW-BKP2	microsoft-ds	10.128.7.20	445	1	8	100.00	100.00
W4N-PL-WEB2	ssh	76.74.129.156	22	49	222	100.00	100.00
W4N-PL-SVN1	ssh	10.128.7.7	22	2	131	100.00	100.00
W4N-PL-WEB2	http	76.74.129.156	80	51	220	100.00	100.00
W4N-SUNVM2	ftp	10.128.10.4	21	0	24	100.00	100.00
W4N-PV-ESX4	ssh	10.128.1.50	22	0	25	100.00	100.00
10.128.2.54	microsoft-ds	10.128.2.54	445	0	5		100.00
W4N-PW-BKP2	ldap	10.128.7.20	389	1	14	100.00	100.00
W4N-SUNVM1	smarts-broker	10.128.10.3	426	0	3	100.00	100.00
W4N-PL-SVN1	mysql	10.128.7.7	3306	2	131	100.00	100.00
10.128.9.111	ftp	10.128.9.111	21	0	4	100.00	100.00

You can define what each column displays such as availability or computed values on variables like the average response time. Each line corresponds to a child of the selected report node except for reports with no child which has one line for each variable. You can define what is displayed or hidden using the tree and column filters. Table reports with children allow you to drill down to more specific reports when you click on a line of the table.

Reports are paginated for fast display

A table can increase in size as children are added to the node. If the number reaches the paging limit, there is more than one page for the report, which enables a faster display of the table. In reports with multiple pages, sorting is performed on every value of the column, including ones that are not displayed.

Identify thresholds at a glance

You can configure major and critical thresholds for the values in each column of a table report. When a threshold is reached, the icon changes color. Green is normal, yellow signifies that a major threshold is reached, and red means the critical threshold is reached.

18 elements found, displaying all elements.

Device	CPU
w4n-pj-rtr3.int.watch4net.net	
w4n-pl-mx1.int.watch4net.net	9.71
w4n-pw-bkp2.int.watch4net.net	8.86
w4n-dl-smarts	
w4n-pc-wap1.int.watch4net.net	0.00
w4n-pv-esx2.int.watch4net.net	
w4n-pw-crm01.int.watch4net.net	2.31
w4n-tl-apgcluster2-vip.int.watch4net.net	8.37
w4n-dl-web.int.watch4net.net	17.85

w4n-pw-crm01.int.watch4net.net	2.31
w4n-tl-apgcluster2-vip.int.watch4net.net	8.37
w4n-dl-web.int.watch4net.net	17.85

Using other value formatters you can control the background color of the cells.

Filtering gives you only the values you want to see

Server	Avg response time (ms)
W4N-PL-DEMO	
W4N-PL-DEMO	

Click the filters icon to add filters to columns.

You can visually see the filtered by information above your table.

filters applied

filtered by: device=='W4N-PL-WAP1' (cancel)

1:59:55 AM EDT | Last Day

Avg response time (ms)	Max response time (ms)	Last Day
1	22	

Click cancel to remove the filters

At any time you can revert to the original report by clicking *cancel* to remove the filters.

Popup graphs give quick access to problem events

If a problem is detected, you can click the value to display a graph that shows the value over the selected time-range. The graph highlights the time and duration of the problem. Popup graphs are available for each value in the table.

My Reports / Table

May 2012, Tuesday 1 » Wednesday 2, 2:34 PM EDT | Last 1 Day



Lists

List reports are the simplest form of tables. There is no special setting for this type of report which simply displays the name of the children nodes. You can drill down to a specific report if you click on the corresponding name in the report list.

My Reports / List

Wednesday, February 22, 2012 10:36:11 AM EST

- ReportsRequested
- Sessions
- QueryCacheHitRatio
- PropertyCount
- CurrentDeviceRatio
- ScheduledReportsExecutionTime
- ReportsExecuted
- DeviceCount
- TotalSize

Interactive table

Interactive tables are used to control the display of adjacent reports. This report type allows you to navigate from one report to another while maintaining the list of available reports on the same page. The report, or reports, displayed next to the interactive table correspond to the child or children of the interactive table.

Interactive table reports have these characteristics:

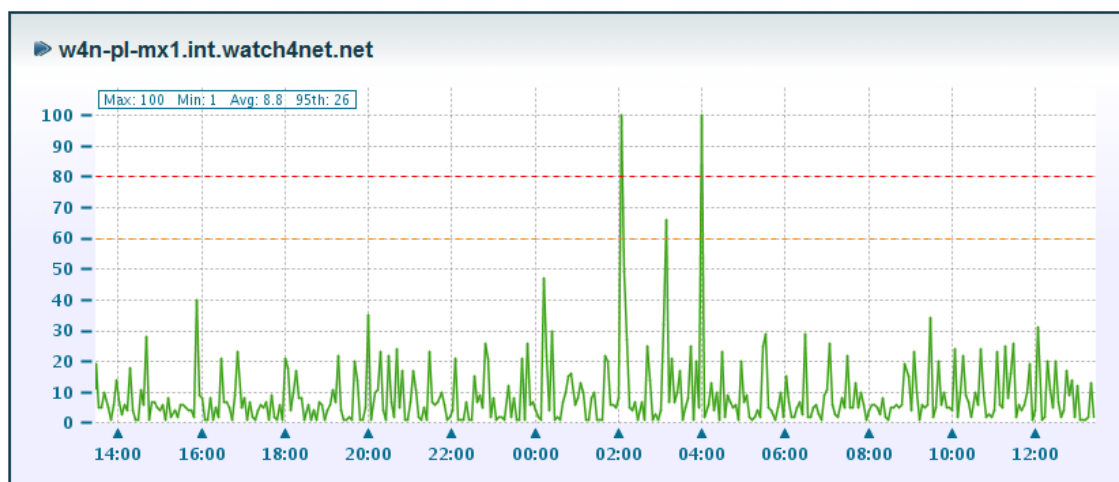
- The interactive table report node must be the parent of the reports to be controlled,
- The adjacent reports are what you would normally see with the drill down functionality of standard tables. These can be constant nodes or nodes which are the result of an expansion,
- Interactive tables can be located in mix reports.

Interactive tables and controlled reports appear on the screen with a distinctive light gray border. The border turns to black when you move the mouse inside the driving table.

iMix

9 elements found, displaying all elements.

Device	IP	Model	Location	Availability (%)	Current Availability (%)
w4n-pl-mx1.int.watch4net.net	192.168.101.2	Net-SNMP Agent 5.1	St-Denis Office		
w4n-pw-bkp2.int.watch4net.net	10.128.7.20		St-Denis Office		
w4n-pw-exh2.int.watch4net.net	10.128.7.89		St-Denis Office		
w4n-pc-wap1.int.watch4net.net	10.128.1.10	AP1130	St-Denis Office		
w4n-pw-crm01.int.watch4net.net	10.128.7.242		St-Denis Office		
w4n-pl-websupport1.int.watch4net.net	192.168.101.3	Net-SNMP Agent 5.1	St-Denis Office		
w4n-tl-apgcluster2-vip.int.watch4net.net	10.128.1.254	C1900	Montreal Datacenter		
w4n-dl-web.int.watch4net.net	10.128.7.8	Net-SNMP Agent 5.1	St-Denis Office		
w4n-pl-demo.int.watch4net.net	10.128.10.42	Net-SNMP Agent 5.1	St-Denis Office		



About Graph reports

Graph reports plot variables along the x (time) and y (value) axes. Depending on the graph type, metrics can be from the current node or children nodes. You can use timeseries graphs that display multiple metrics related to a data selection or events that show only one series of values per event series.

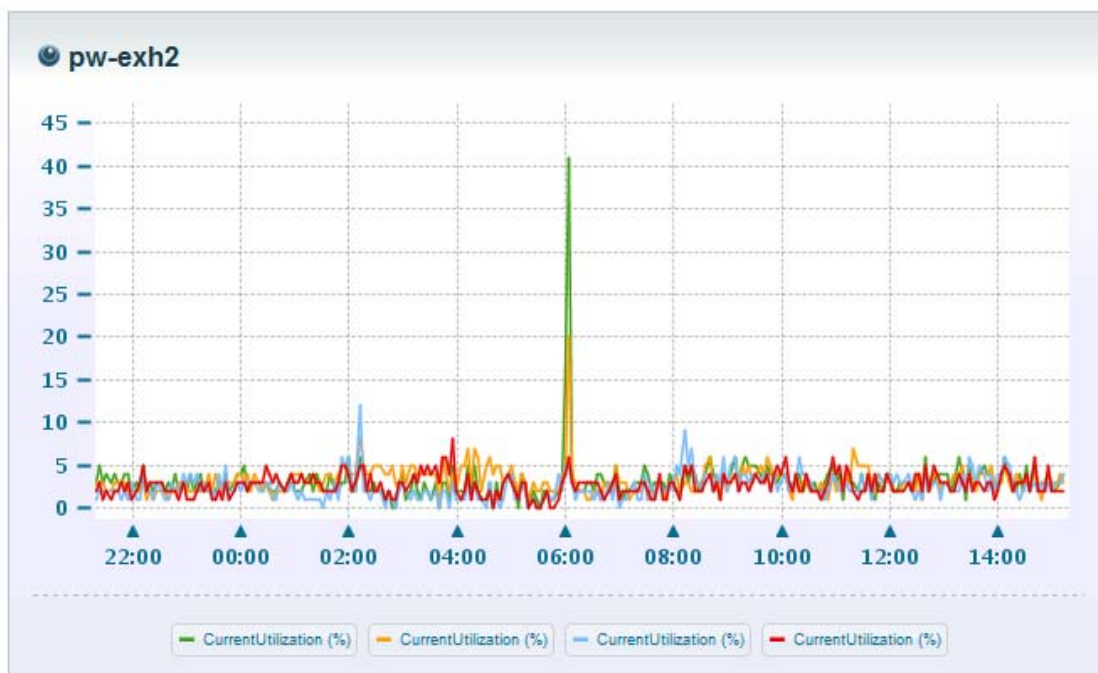
Graph reports can also have two y-axes, with two different sets of metrics plotted against them.

Value and Baseline graphs

There are two kinds of graph reports: value and baseline. Both are available at any time on every node of the tree, although baseline graphs require more than one week of data. Value graph reports are generated using the properties of a selected node including its filter.

There are different ways to present these reports. A value graph report plots the values of the variables from the selected node. The variables can be displayed in the legend with their colors and properties.

The display parameters for graphs use the hierarchy of the tree. Children reports use the children of a node and create a node report for each child. Reports are displayed in the same order as they appear in the report tree. A graph report explores the tree as deeply as possible to find every end point. These end points are used to draw a node report. The entire hierarchy of the tree is kept for the presentation.



Toggling values in graphs

Where values appear in the legend, you can toggle their display on the graph instead of showing all of them.

Using upper and lower bounds

You can modify the displayed range of values of your graph by changing the values for the upper and lower bounds.

This is useful if values deviate only slightly and cannot be read because they're within a narrow spectrum of the value range on the y-axis. By applying bounds that limit the graph to the value range of the plotted variables, deviations are resized to the full size of the graph and are easier to see. Upper and lower bounds are applied only to the main y-axis if there are two y-axis.

Graph types

Graphs can be line graphs - simple chart - or bar graphs. If you choose to display a single metric using a bar graph and specify threshold values, threshold colors will be used to draw individual bars. In the following example, bars are drawn for each hour of data and thresholds are set to 0.5MB and 1.0MB.



About Aggregated reports

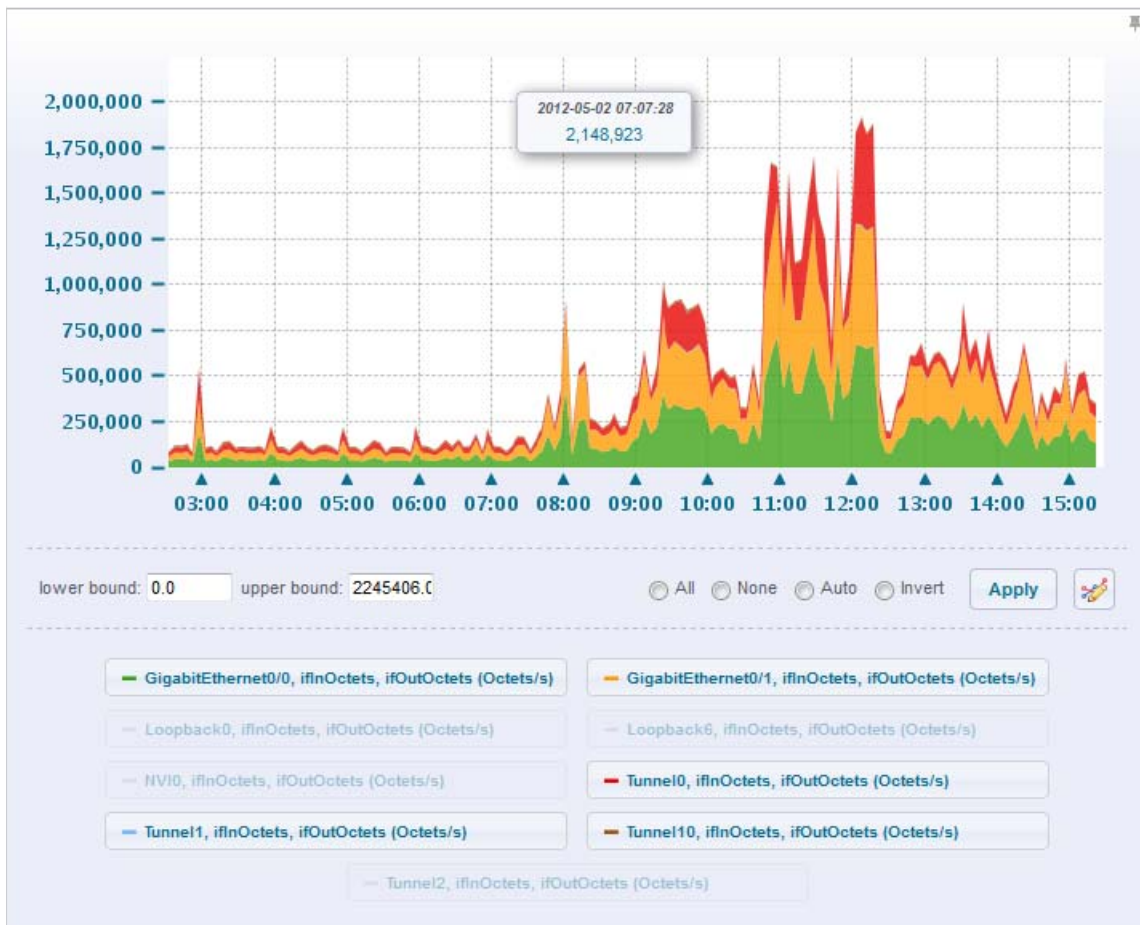
Aggregated reports give you an aggregated view of underlying data. This type of graph is useful for comparing indicators such as the bandwidth utilization for each interface of a router over a period of time. APG provides aggregated report types that range from detailed to more aggregated.

Aggregated graphs use the children of a node to generate their series and display each one on the report. An aggregated graph generated on a node whose children are s1, s2 and s3 will have three series: one for indicators selected by s1, one for indicators selected by s2 and one for indicators selected by s3. If the node does not have any children, the graph generates one series for each indicator selected by the node.

Because aggregated reports require data from regular time intervals, data aggregates of 5 minutes will be calculated on the fly when reports are selected to be displayed using real-time values.

Stacked charts

The most detailed aggregated report is the Stacked chart. It displays an area for each child of a node, and the areas are stacked on top of each other in the resulting graph. To enhance clarity, small areas are grouped and aggregated in a section called Other, displayed in light gray. The legend lists the grayed variables so you can enable them if you want to. Each area of a stacked chart is the result of the aggregation set in the report options for the specified period, as many times as the period can fit into the time range.



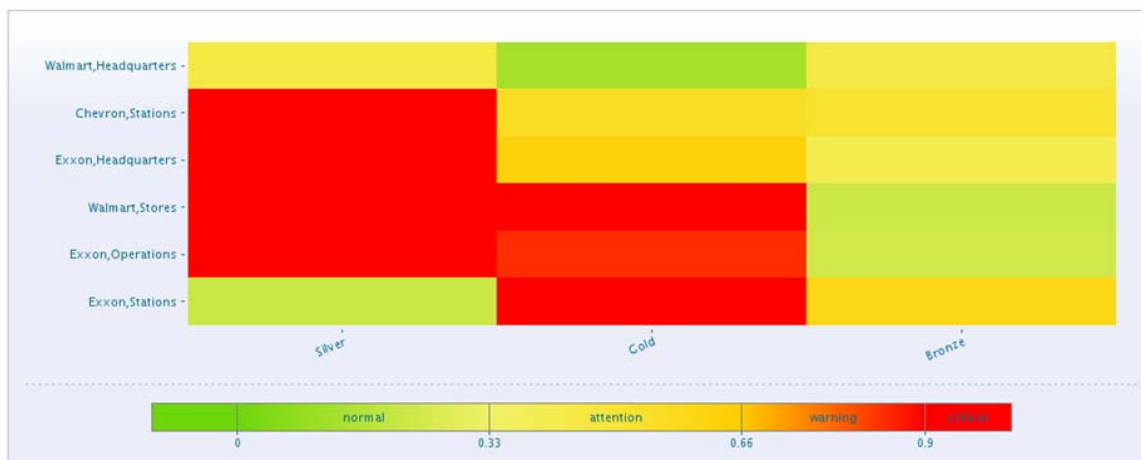
Status reports

A status report aggregates data for each child using the specified aggregation function over the selected period. Each child node is displayed as a large colored symbol with the aggregated value and the name of the node displayed. Color thresholds can be defined. Different symbols (squares, triangles, ...) can be configured.



Heat maps

A heat map is a grid in which metrics that have similar values are grouped together in order to create "hot" and "cold" areas. These values will be coloured according to the thresholds defined for them in the report details section. Any combination of metric properties may be used to define the axes of this grid.



Gauge charts

A Gauge chart provides you with a snapshot of the health of an indicator. Gauge charts display the absolute aggregated value of a single indicator.



This chart uses threshold settings to color code the range of values.

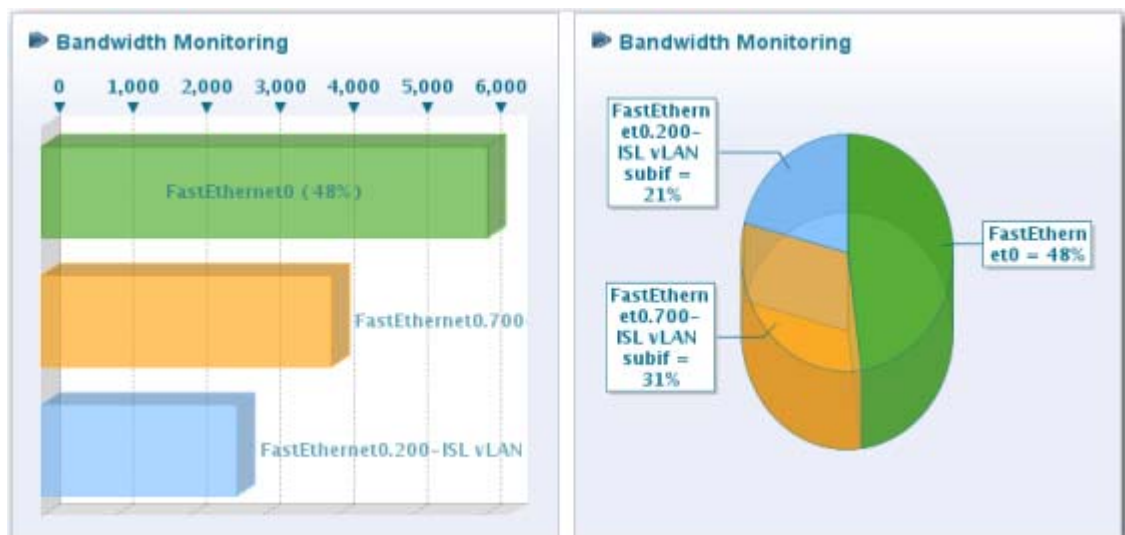
About TopN reports

TopN reports rank results or present the information so that you can compare global statistics.

Horizontal bar and Pie charts

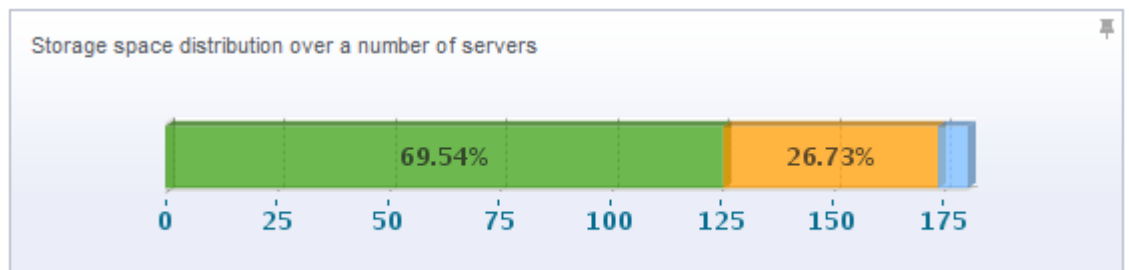
These charts are like Stacked charts, but also aggregate data over a time range. The charts retrieve the same data, but instead of plotting a time series, they aggregate each series into a single value. Values that are too small are grouped into an Other section displayed in light gray.

The resulting graph shows the relative proportions for each value as a percentage, along with the absolute value over the computed total. On Horizontal bar charts, you can see the absolute value for each bar by mousing over it. If the selected node has children, you can access them by clicking a series.



Single horizontal bar graphs

A single horizontal bar report uses the same data as the horizontal bar and pie chart reports but displays the proportion of each child with regards to all children in a single line.



Time Ratio Bar charts

These charts are similar to Horizontal bar charts, where time series are represented by horizontal bars. With Time Ratio Bars however, bars are decomposed into stacked pieces, each one representing a certain interval of value. The lengths of pieces are given by the ratio of time the series lies in the corresponding intervals, over the whole time range.

On the resulting graph, ratios are given as percentages, typically stacking to 100%. Like Horizontal bar charts, further information about each ratio are displayed when mousing over it and clicking on a bar drills-down to the corresponding child node if available. By default a limit over the number of bars is applied, only the first series are displayed.

Like other aggregated reports, time ratio graphs require data from regular time intervals. Data aggregates of 5 minutes will be calculated on the fly when reports are selected to be displayed using real-time values.



About Baseline reports

A Baseline report displays one variable at a time, which you choose from the legend. You cannot choose raw values as they do not contain enough information, such as the minimum or maximum values over a period.

Baseline reports use colored lines to display different kinds of information. The yellow line shown here represents the average values for the collected dates. The black line is the baseline, computed from the average values of the four previous weeks, which means that you cannot generate a Baseline report before one week of use. The gray areas around the baseline represent the deviation of the minimum and maximum values from the values used to compute the baseline. This gives you a way to identify abnormal usage.



About Icon reports

Icon reports display the icons of children nodes as the content of the report. This can be useful to simplify a parent report where you just want to know what type of information child nodes contain.

My Reports / Icons

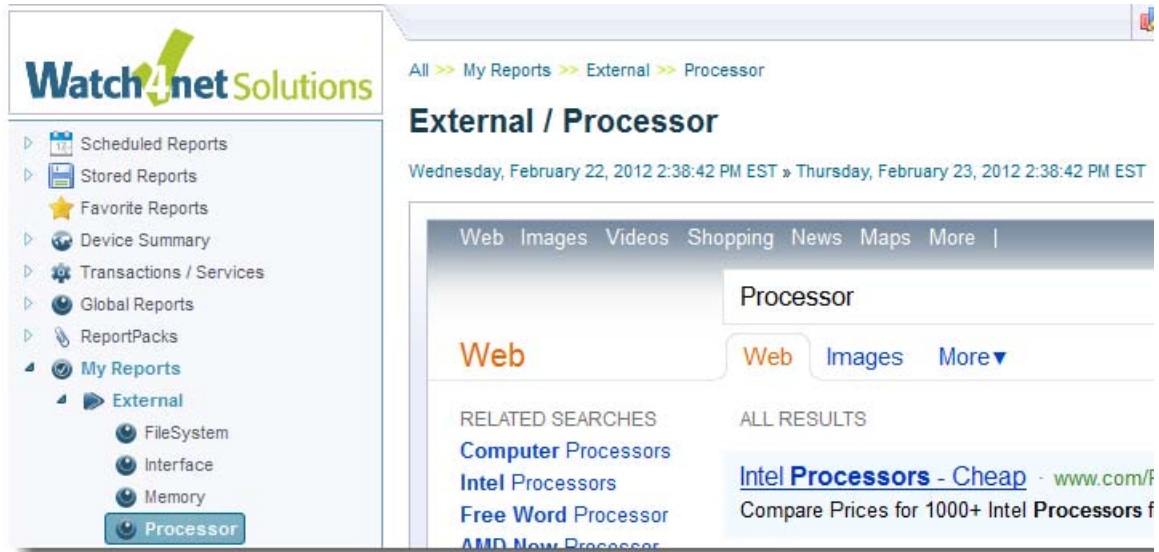
Thursday, March 15, 2012 3:38:30 PM EDT » Friday, March 16, 2012 3:38:30 PM EDT | Last 1 Day



About External reports

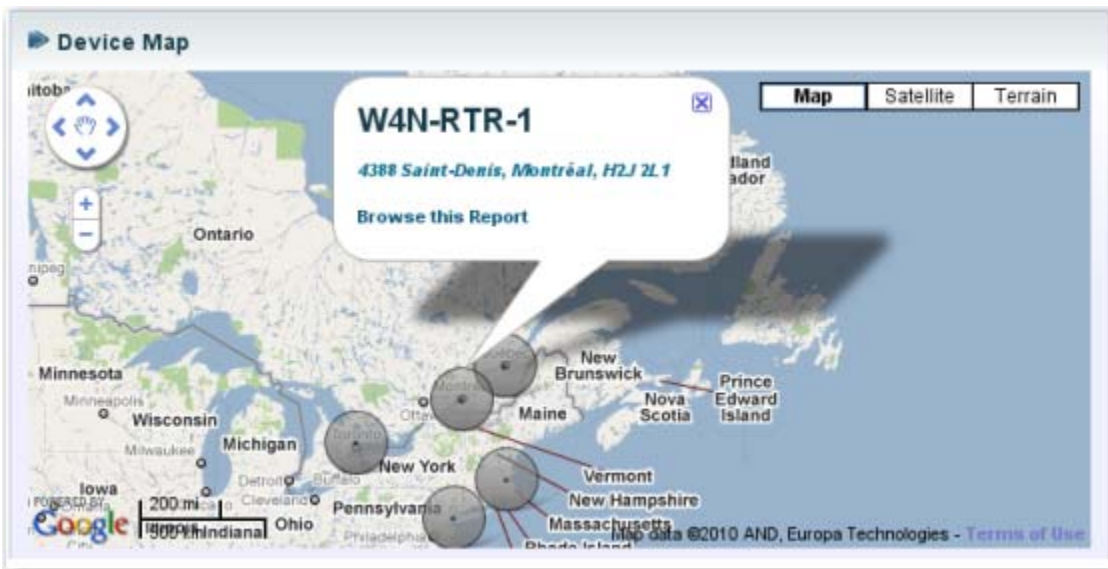
An External report displays the content found at the URL you specify. You can use `${property}` to inject property values into the URL, for example, `http://www.mysearchengine.com/search?q=${device}`.

External reports give you a way to include something external from APG in a report, such as another system's dashboard or a fault management system. For security, your browser requests the web page configured in the External report, so the request comes from your computer and not the APG server.



About Map reports

A Map report displays child nodes in a geographical map. Each child node must contain positioning information in order to be mapped. This can be achieved through a property value or a manually entered location.



About Topology reports

A Topology report is a graphical representation of the devices on your network and how they are linked together. APG gives you many ways to represent the topology of your network in reports complemented by aggregated information such as performance metrics and event data. The topological characteristics of your network can be gathered dynamically by collectors so that changes to hosts are automatically reflected when the report is generated.

Topology report concepts

Displaying topology reports in APG involves using a dedicated database.

Topology database

A topology database contains the information used to represent the topology of your network, such as:

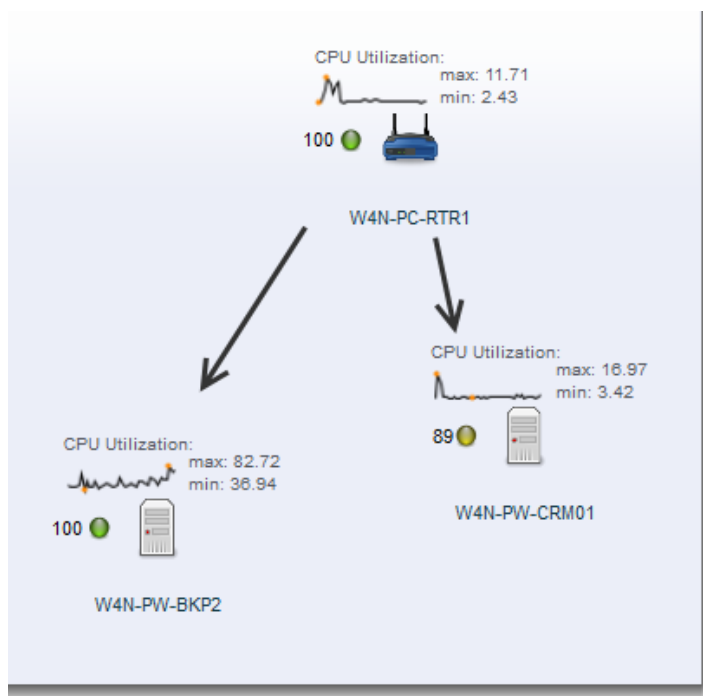
- relationships between key devices like routers and switches,
- what comprises a host, such as processors, memory, and interfaces,
- what topology groups devices are part of. For example, routers can be a part of Core Networking.

For information about the configuration necessary to use the information from the topology database, see the *APG-Topology-CLI.pdf* Guide.

Topology report look and feel

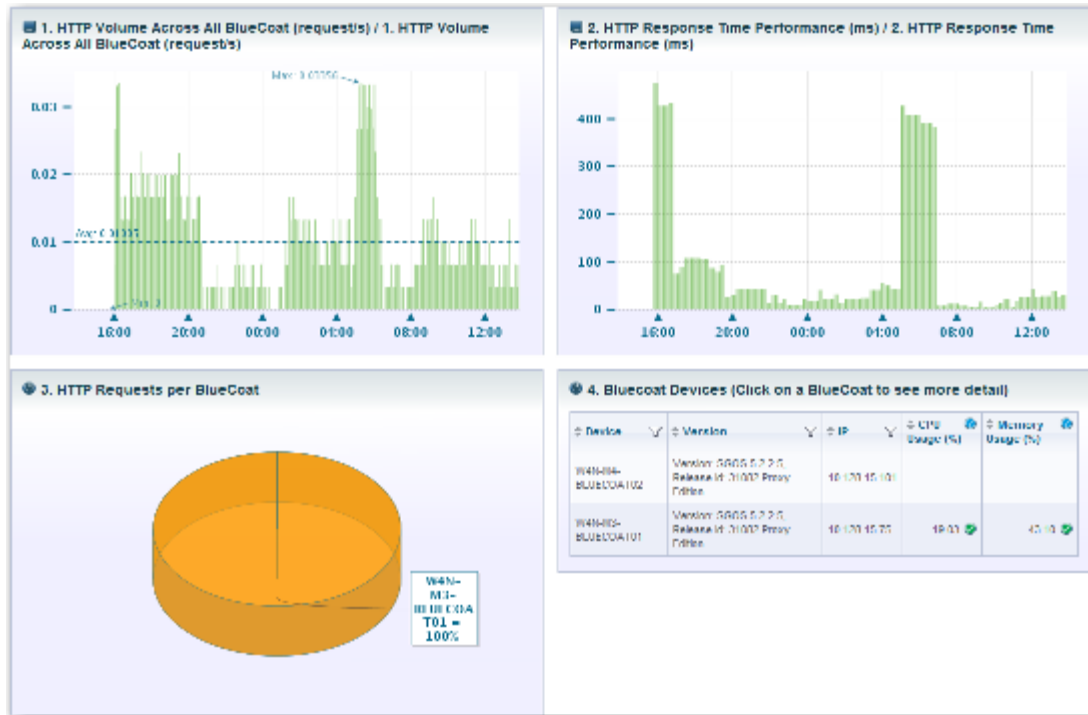
All topology reports have a common look and feel. They can have a background image, icons to represent the devices, referred to as nodes and visual attributes on the links, referred to as edges, about connecting devices.

Nodes are the elements of a topology that represent a network section. Edges define the relationships between nodes. A node can have none, one or multiple edges linking it to other nodes. Edges have arrows from one node to another, which represent the flow. The elements in the report are plotted on a canvas, which is composed of tiles called cells. A node can be on only one cell and a cell can have only one node.



About Mixed reports

Mixed reports display several reports on one page. With Mixed reports you can combine the report types of children nodes into a single report page.



Types of Mixed reports

There are three kinds of Mixed reports, depending on how you want to use the information from the child nodes:

Mixed report	generates a report using temporal information from the selected node (the parent) and the default report type from each child.
Mixed report using defaults	uses the default settings including the temporal settings and bounds of each child.
Overlay report	generates a mixed report that shows timeseries and events. Event data is applied on top of a graph report in an overlay. This gives you a report where the timeseries metrics are plotted on x and y axes or dual y-axes, and events are shown on the same graph in prescribed zones.

About Overlay Reports

Overlay reports are used to graphically display event based information on top of time-series. Events that occur at discrete moments in time are represented as points. Events that have duration are represented as lines or areas.

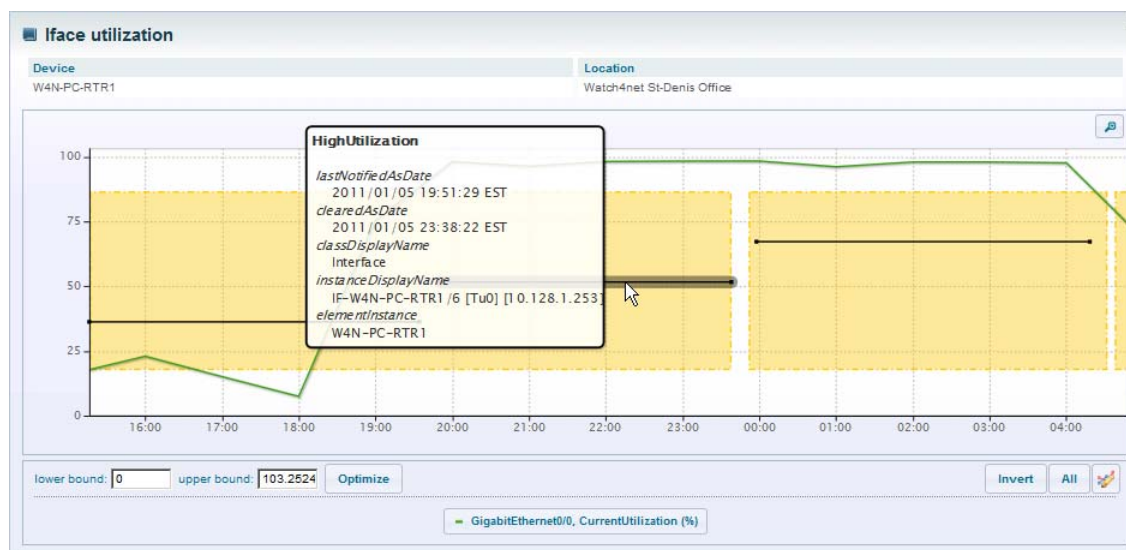
Event report overlays have these characteristics:

- The event overlay report node must be a direct parent of a graph report and a table report,
- The graph report can be any graph or aggregated report that shows all the results in a single graph.

When you select an event overlay report in the tree, both the child graph and table reports are displayed on the page. You can mouseover an event to see its details. When you mouseover an event in the graph it is also highlighted in the table report, and vice-versa.

You can filter the table to show fewer events, to correspond to the events you want to work within the graph. The overlay report can have multiple overlays, each defining a different set of events to display. These appear in the graph in user defined zones.

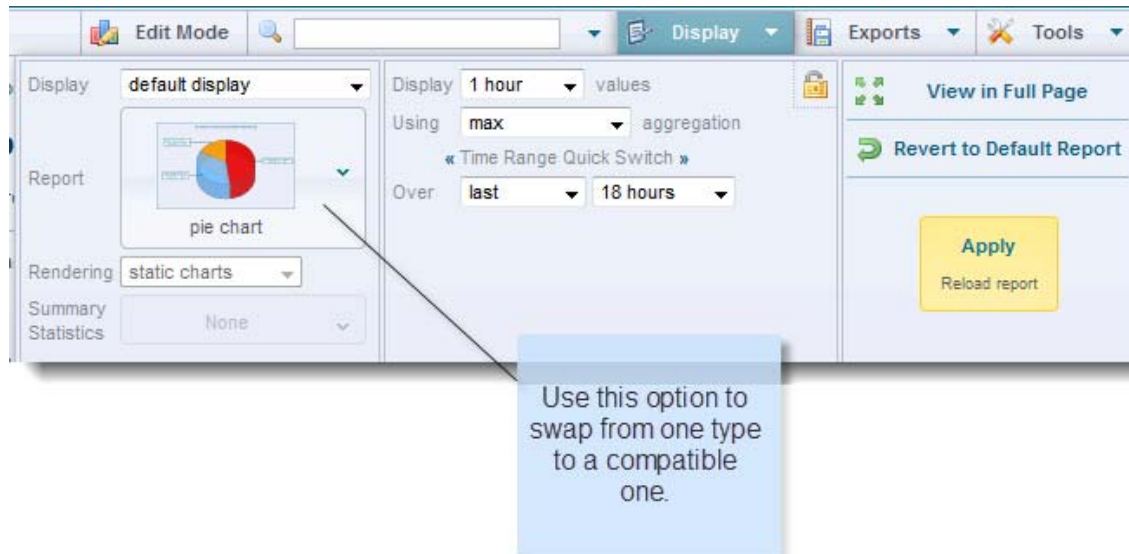
Zones are areas that span the x-axis with defined lower and upper bounds along the y-axis. For example, a zone at the top of a graph can show one series of events, and another zone in the lower part of the graph can show another series of events. This way, several series of events can be displayed and compared on the same graph, along with their timeseries metrics.



events						
Class	Instance	Event	Description	OpenedAt	ClosedAt	
Interface	IF-W4N-PC-RTR1/6 [Tu0] [10.128.1.253]	HighUtilization	Indicates that the current utilization is greater than UtilizationThreshold	2011/01/05 00:10:16 EST	2011/01/05 19:34:09 EST	
Interface	IF-W4N-PC-RTR1/1 [Gi0/0] [207.115.98.251, ...]	HighUtilization	Indicates that the current utilization is greater than UtilizationThreshold	2011/01/05 00:10:16 EST	2011/01/05 23:38:22 EST	
Interface	IF-W4N-PC-RTR1/6 [Tu0] [10.128.1.253]	HighUtilization	Indicates that the current utilization is greater than UtilizationThreshold	2011/01/05 19:51:29 EST	2011/01/05 23:38:22 EST	
Interface	IF-W4N-PC-RTR1/1 [Gi0/0] [207.115.98.251, ...]	HighUtilization	Indicates that the current utilization is greater than UtilizationThreshold	2011/01/05 23:51:30 EST	2011/01/06 04:32:05 EST	
Interface	IF-W4N-PC-RTR1/6 [Tu0] [10.128.1.253]	HighUtilization	Indicates that the current utilization is greater than UtilizationThreshold	2011/01/05 23:57:44 EST	2011/01/06 04:18:24 EST	
Interface	IF-W4N-PC-RTR1/1 [Gi0/0] [207.115.98.251, ...]	HighUtilization	Indicates that the current utilization is greater than UtilizationThreshold	2011/01/06 04:37:45 EST	2011/01/06 05:12:05 EST	
Interface	IF-W4N-PC-RTR1/6 [Tu0] [10.128.1.253]	HighUtilization	Indicates that the current utilization is greater than UtilizationThreshold	2011/01/06 04:51:32 EST	2011/01/06 05:12:05 EST	

About report compatibility

Some report types are compatible with each other so that if you configure a report to display one of the types, you can easily change for one of the others in the Report Type section of the Display options.



For how to choose report options see [Choose report display options](#). Compatible families are:

- Simple chart - Bar chart - Baseline
- Children-based chart - Stacked chart - Stacked bars
- Horizontal bars - Single Horizontal bar - Pie chart
- Standard table - Interactive table
- Map - Standard table¹
- Mixed reports - Mixed using defaults

1. The Standard table is an option only when a report's default mode is Map. If the default mode is Standard table, Map is not available.

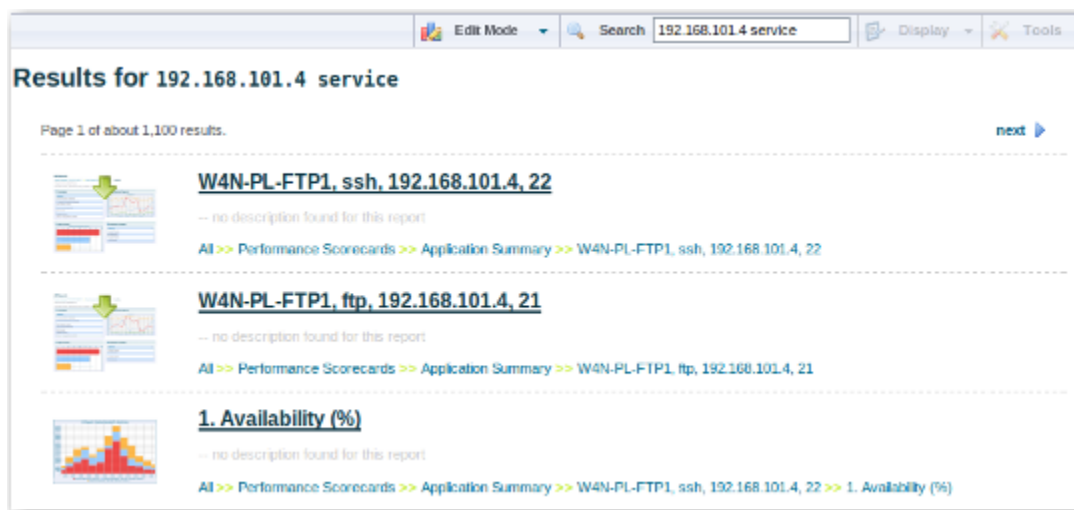
Search for reports

You can use Search to quickly access a report without browsing the report tree. The Search box is at the top of the UI as long as it is enabled for your role.



To search for reports

- 1 In the **Search** box, type the keywords for the report and press **Enter**.
For example, if a server whose IP is 192.168.101.4 is having a problem, and you want to see whether its services are impacted, in the Search box type 192.168.101.4 service, and press **Enter**. Each result is displayed on a line. You can use Boolean search operators such as AND, OR and NOT to refine your results.
- 2 To access a report click its title.



Use Advanced search

An advanced search creates a node with the search results. This is like creating and editing a new report node, so it's recommended only for users who are familiar with report editing.

To perform an advanced search

- 1 Click the node in the report tree under which you want the search to be applied. If you want it to be applied from the root, this is not necessary. You will not be able to save the resulting search results node or adjust its settings if it is applied from the root.
- 2 Click the arrow next to the **Search** box to display the Advanced Search option.



- 3 Add a **Filter** to specify what you want in the search results. See [About the Filter Configuration Wizard](#).
- 4 In the **Expansion** box you can optionally enter properties to define how the node is expanded into multiple nodes. For example, if you enter device, under the search results node there will be several expanded nodes, each corresponding to a device. You can use the Property Selection Helper to choose properties. See [About the Property Selection Helper](#).
- 5 From the **Search Base** list, select where you want the search to be applied and results to appear. The search results node is subject to filters on nodes higher up in the hierarchy. Choose one of these options:
 - Select **search from root** to add the search results node at the root.
 - Select **search from the selected node** to add the search results under the currently selected node.

A search results node is created as configured with the results from the filter, and optionally expanded as configured.

NOTE	If the search result node is not at the root, you can save it by entering Edit mode, selecting the search results node, and clicking the Save button below the edit settings. If you don't save the search results node is not available in subsequent sessions. You can also edit its settings like other nodes. If it was applied at the root, its settings are locked and cannot be edited.
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Browsing reports

Topics

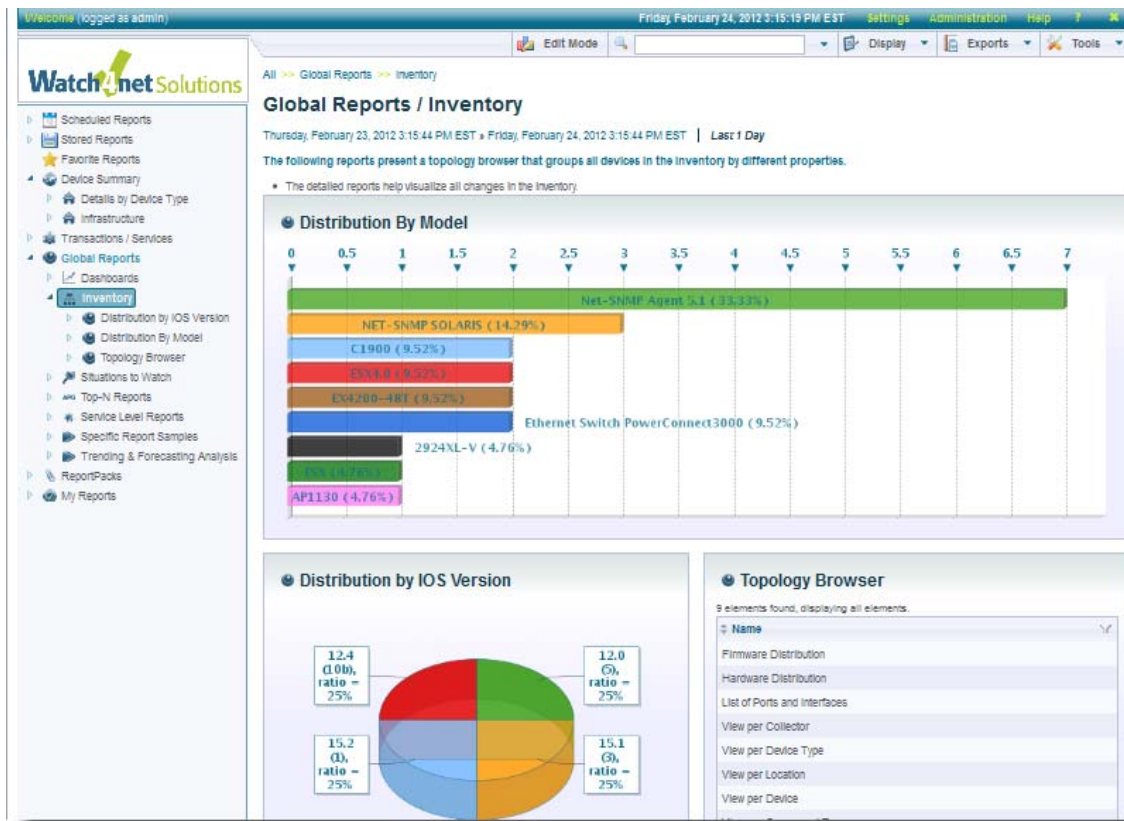
- [About Browse mode](#)
 - [About the Report tree in Browse mode](#)
 - [Use Dynamic graphs](#)
 - [Customize graph metric](#)
 - [Choose report display options](#)
 - [Use report tools](#)
 - [Schedule reports](#)
 - [Manage scheduled reports](#)
 - [View stored reports](#)
 - [Save your favorite reports](#)
 - [Add reports to My View](#)
-

About Browse mode

You can use Browse mode for on the fly report generation. The parameters and options used to generate reports are set up in Edit mode.

You can use the report tree to browse the tree architecture to see the reports you are interested in. Reports displayed on the right usually allow you to drill down to more specific information. Individual bars, pie pieces and table lines all allow the drill down operation. Many display options are available for each type of report. Any options you modify are applied to the current report and saved for the session. You can revert to the default settings at any time.

Browse mode is the default when you log on to the APG Web Portal. If you have access to the Edit mode and are currently editing, click the Browse Mode button to enter Browse mode again



About the Report tree in Browse mode



The report tree on the left of the page is a dynamic hierarchical tree you use to navigate nodes.

You can browse the tree by clicking each entry, the node icon, or the node name, which displays its report in the page area.

To expand or collapse nodes to view or hide their children, click the arrow for the entry or double-click the node icon or name.

You can resize the report tree panel by dragging its border.

Double-click the right edge of border to minimize or restore the panel to its default size.

Report tree areas

Scheduled reports	Reports that are automatically generated at a specified times. See Schedule reports and Manage scheduled reports .
Stored reports	A collection of saved binary versions of generated reports. Unlike reports generated on the fly with data accessed each time from the database, these are fully formed-in-time snapshots of a report and its data. See View stored reports .
Favorite reports	Links to other reports in the template section of the report tree. You can add favorites as you browse the tree. See Save your favorite reports .
Templates	Preconfigured templates accessed by all users. The reports a user has read or read-write access to appear in the template area. Each of these reports is common to all users who access them, so any change made to a report in Edit mode is reflected everywhere.
My Reports	Displays reports that are exclusively for the user. My Reports appears only if you have read-write and custom report privileges, and a report has been added to the My Reports area in Edit mode. See About My Reports .

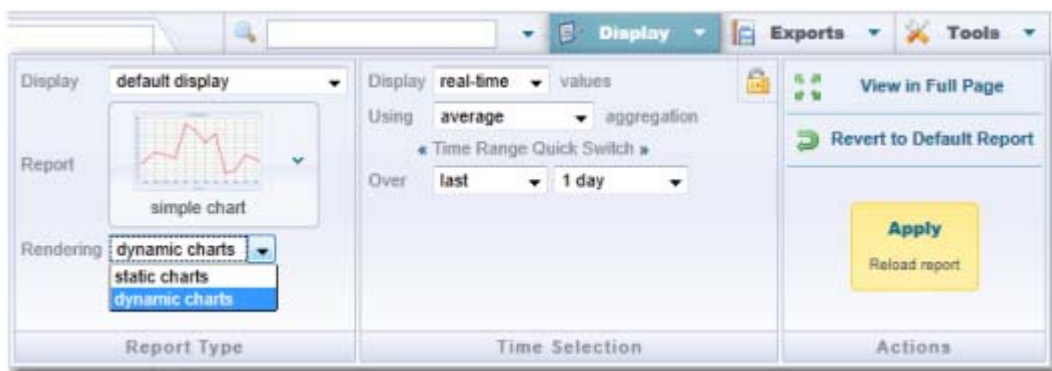
Use Dynamic graphs

Dynamic graphs give you a way of interacting with reports to display detailed data. With Dynamic graphs you can mouse over a graph metric and a popup appears with the time and value of the selected point. Dynamic Graphs are enabled on a per-graph basis.



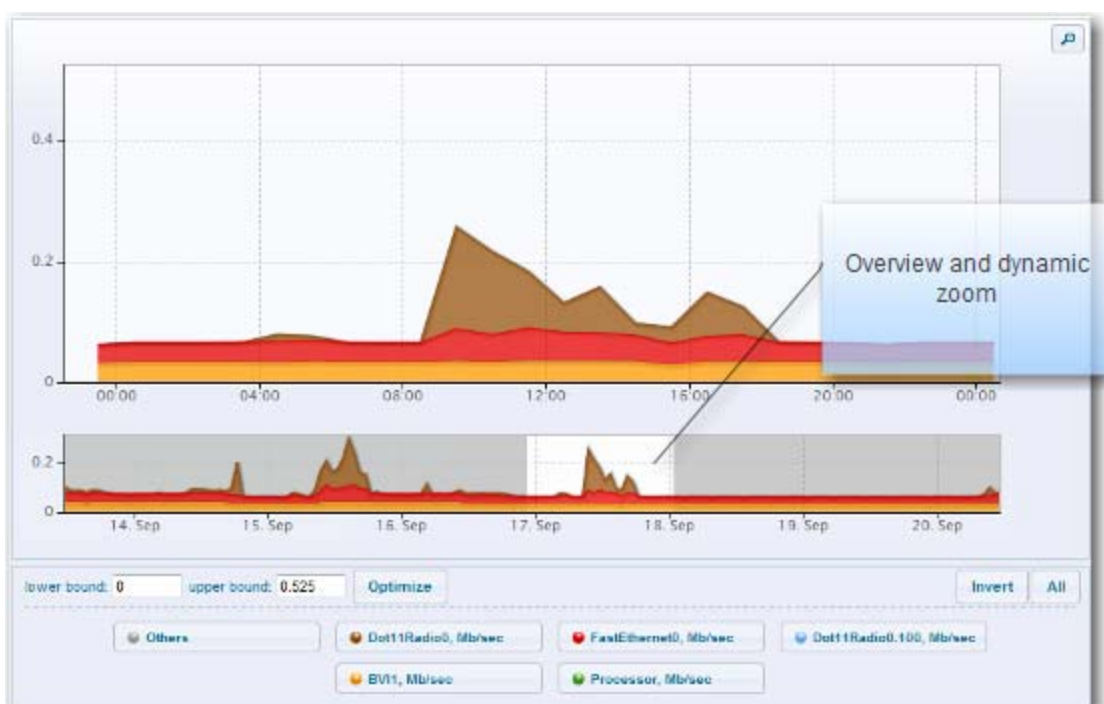
To display a Dynamic graph

- 1 In **Browse** mode on the top menu click **Display** and from **Rendering** select **dynamic charts**.



Dynamic graph actions

Zoom in on the graph	Click an area with the mouse and the graph zooms to the area you select. Click Reset Zoom to return the graph to its default zoom level.
Display only selected metrics in the graph	Double-click a metric in the legend to enable it. This makes the other metrics in the legend unavailable.
See a dynamic zoom and overview	This displays an overview of the graph, and zooms on a selected focus of the graph. 1 Click the Zoom button at the top right of the graph. 2 From the overview at the bottom of the graph, select the portion of the graph to zoom, and it is displayed on the top graph. The metrics are displayed in the overview. If they are toggled on/off in the legend this only affects the focused graph on the top. 3 To turn off the display of the overview, click the Zoom button again. Note: This feature is not available in Pie or Horizontal Bar charts, or when you view multiple reports at the same time in the page area.



Customize graph metric

You can select metrics to be displayed in line graphs using options available from the browse mode. If you are viewing a server generated graph (or static graph), click the metric label at the bottom to toggle its selection and hit the apply button. Dedicated radio buttons allow you to select all or invert the current selection.



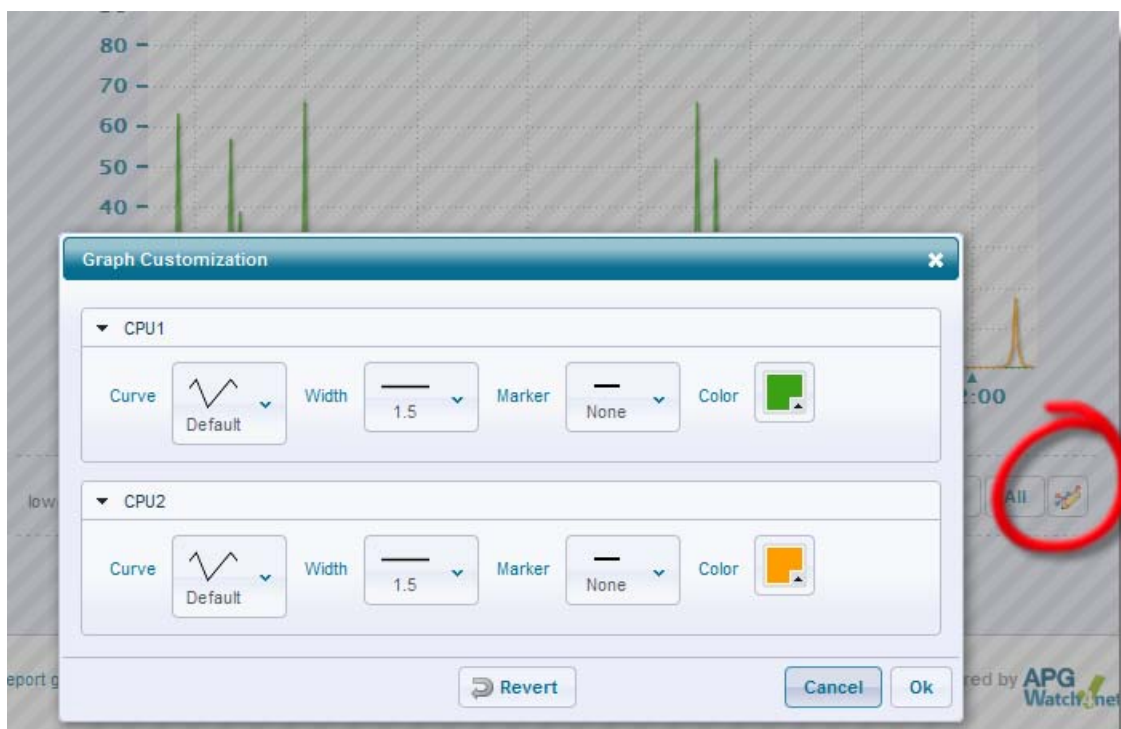
If you are viewing a dynamic graph, there is no apply button as the action is instantaneous.



Browse mode also allows you to customize the look and feel of the displayed metrics.

To customize graph metrics

- 1 Display the report whose styles or colors you want to edit. You must access the report either on its own page, or through the default view of a mixed report.
- 2 Click the **Graph Customization button** on the lower-right corner of the report.
- 3 Find the metric you want to change and modify its settings:
 - From the **Width** list, select a line width.
 - If the width is too thick, markers may not be clearly visible.
 - From the **Curve** list, select the regular line graph (default) or the spline option.
 - From the **Marker** list, select a marker type. Markers appear along the line where values have been measured for the metric.
- 4 Click the rectangle to the right of the **Color** label.
- 5 Using the **Color Picker** select a color. Colors are updated live to the Chart Metric Customization.
- 6 To close the dialog, click anywhere outside the Color Picker, or click the color wheel at the bottom-right corner.
- 7 Click the **OK** button to save your changes. Your color changes are applied to the metrics in the report.



Choose report display options

In Browse mode, you can adjust the display options of a report for the current session. This is unlike Edit mode where the display changes are saved and become the report defaults.

Display options include:

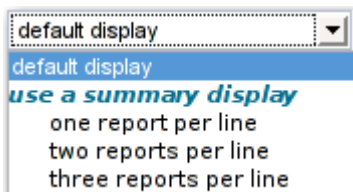
- report type
 - the type of report to display
 - how multiple reports are arranged on the page
 - whether a chart is static or dynamic
- time selection
 - the type of aggregation the report uses
 - the time range

To change the report display options

- 1 In **Browse** mode select a report node from the tree.
- 2 Click **Display**.
The values that appear in the Display menu are the defaults for the selected node.



- 3 From the **Report Type** area choose how you want to display reports.
Default display stacks one report on top of another, or you can choose to have multiple reports stacked in rows or columns.
Note: If you select an option below the **use a summary display**, a little icon will be available on the top right portion of the graph allowing you to show or hide the graph's legend.



- 4 Choose the type of report you want to generate.
 - Only the report types that are compatible with the default report are displayed.
You cannot choose another report type if no other is compatible. Reports that you can choose will use the configuration settings of the report node for the new report type. For a description of what reports are compatible, see [About report compatibility](#).
 - For descriptions of the types of reports see [About the report types](#).
- 5 From the **Rendering** list select whether you want to display static or dynamic charts. What you are able to select here depends on what your administrator has enabled. For information about Dynamic charts see [Use Dynamic graphs](#).

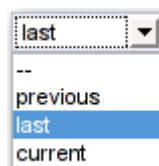
- 6 From the **Time Selection** area choose the type of aggregation the report uses and the time range it covers.



- 7 From the **Display** ____ **values** list choose an aggregate time period. Real-time values are aggregated as they are collected. Other aggregation time periods are available. The defaults can be changed by your administrator. The defaults are:
- real-time: the real collected values
 - 10 mins: 10 minute aggregates
 - 1 hour: 1 hour aggregates
 - 1 day: 1 day aggregates
 - 1 week: 1 week aggregates
- 8 Aligned aggregates can also be available, which time-shift data from different time zones into the same time frame, so that data occurring at 9:00 in one time zone is aligned with data at 9:00 in another. This helps you compare data according to its effect on users in each time zone. Without using aligned aggregates, data from different time zones is expressed in relation to the time zone of the report. For aligned daily and weekly aggregates, days and weeks are delineated according to a 24 hour and 7 day period where all the time zones are aligned. Without using aligned aggregates, days and weeks are delineated according to UTC time. The aligned time zone aggregates are:
- real-time (aligned tz): the real collected values with aligned time zones
 - 10 mins (aligned tz): 10 minute aggregates with aligned time zones
 - 1 hour (aligned tz): 1 hour aggregates with aligned time zones
 - 1 day (aligned tz): 1 day aggregates with aligned time zones
 - 1 week (aligned tz): 1 week aggregates with aligned time zones
- 9 From the **Using** ____ **Aggregation** list choose the type of aggregation you want to use.

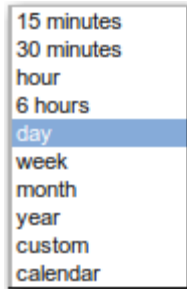


- 10 From the **Time Range** lists select the time period the report will cover. You can use the Time Range Quick Switch arrows to choose the previous or next periods.



11 Choose a value from the **Over** field if you're using a custom range.

- **previous**: selects the entire previous range. For example, the previous day is from midnight to the midnight the day before, and the previous one month includes the entire month's time, so if it is now September 10th the period would include all of August.
- **last**: selects one range back from now. For example, the last day extends from the current time back 24 hours, and the last month extends from the current day back a period of one month.
- **current**: selects the current range. For example, the current day extends from the last midnight through to the current time and forward to the next midnight, and the current month extends from the first of the current month to the last day of the month.



12 From the second field select a time range. You can choose a pre-defined value or period. For greater accuracy, you can select **custom** or **calendar**.

- for **calendar** specify the start and end times of the report.
- for **custom** specify a duration using numbers and units. There's no limit to the number of units, but each unit can be present only once. For example, 1h45m is translated as 1 hour and 45 minutes.

13 To lock the time frame, click the lock icon. If you lock the time frame, the time selection parameters that you chose are applied to every report you view during the current session. This is useful to have a snapshot in time for comparing equivalent graphs for a device, for example.

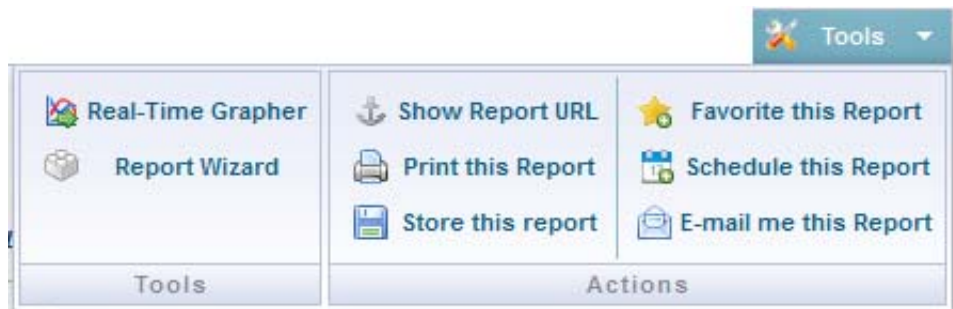
14 From the **Actions** area choose the actions you want to take. Be sure to click **Apply Changes** or your changes will not take effect.



- Choose **View in Full Page** to display only the contents of the reports currently in the page area in a new browser tab or window, depending on the browser. Other user interface elements, including the report menu, do not appear.
- Choose **Revert to Default** to revert the report to its default settings.

Use report tools

The Tools menu gives you access to the Report Wizard and Real-Time Grapher, and has tools for printing, scheduling, emailing, storing reports and adding them to your Favorites.



To access report tools

- 1 In **Browse** mode select a report node from the tree.
- 2 On the **Report** menu click **Tools**.

Report tools

Real-Time Grapher	Opens the Real-Time Grapher, which gives you real-time performance data from any SNMP-capable device. See the <i>Real-Time Grapher Guide</i> for how to use this tool.
Report Wizard	Opens the Report Wizard that you can create a new report from. See Create a report with the Report Wizard .
Show Report URL	Replaces the current URL with the complete report URL. This enables you to create a bookmark for this page or send the link to it.
Print this Report	Generates a print friendly report.
Store this report	Exports the report in a proprietary binary format and puts it in your stored reports.
Add to Favorite Reports	Adds the current report to the Favorite reports. These reports are listed on the top of the tree for quick access. See Save your favorite reports .
Schedule this Report	Displays a page where you can schedule the report for automatic generation and sending. You can scheduled the report, for example, to be sent every week on Monday at 8:00 AM. See Schedule reports .
E-mail me this Report	Generates the report and sends it as a PDF attachment to the email address configured in your settings. To configure your email address see Edit your user settings .

Export reports



To export a report

- 1 In **Browse** mode select the node for the report you want to export.
- 2 On the **Report** menu click **Export**.

Export formats

PDF document	Creates a PDF and opens it in a window where you can save it or print it.
CSV format	Exports the report in a CSV file. If this is a multipart report, each part is prepended with a commented line containing the title of the part. For graphs, data is exported according to the graph type.
XLS format	Exports the report in a regular Excel file. If this is a multipart report, each part is exported in a separate sheet. For graphs, data is exported according to the graph type. If your report contains multiple metrics, the regular XLS format will export each metric in its own pair of time and value columns. The XLS 1 column will export all metrics one after the other in one pair of time and value columns. This can be useful to easily generate scatter type graphs.
PNG, JPEG or SVG image	Creates an image of the report's first graph. If there is no graph on the exported report, an empty image is generated.
XML template	Exports the report as an XML file so that it can be imported by another user. The report node and its children are exported in the file. You can also import the branch at a later time.

Schedule reports

You can schedule reports to send at fixed times to a list of recipients. Because scheduled reports are created from the current report and sub-report settings configured in Edit mode, be aware of any changes to the report settings each time the report is generated. Whenever a scheduled report is generated it queries the database for the latest data.

The maximum number of reports you can save is controlled by the Stored Reports restriction in the Administration page. Do not store more reports than indicated there as the resulting reports may not be saved.

After you schedule a report, you can go to [Manage scheduled reports](#) to edit the parameters that control report generation.

To schedule a report

- 1 In **Browse** mode select the report you want to schedule.
- 2 On the **Report** menu click **Tools > Schedule this Report**.
- 3 Enter a name and use the graphic controls to select the schedule to be used for generation.

- 4 Click **Save**.

For more information on the available options, see [Scheduled report properties](#).

Manage scheduled reports

After you schedule a report, you can edit the parameters that control report generation. To schedule a report go to [Schedule reports](#).

To manage scheduled reports

- To manage scheduled reports, either:
 - At the top of the report tree click **Scheduled Reports**.
 - Add a new scheduled report. See [Schedule reports](#).
- The Scheduled Reports Management page lists the scheduled reports. To edit a report click it and click **Edit**.

will be generated at the given rate, and then sent by email once finished.

Click on a line to access the corresponding scheduled report information.

Name	Next Run	Last Run	Last Duration	Status
INCHARGE-AM-PM	Jun 8, 2012 12:00:00 AM	-	-	

INCHARGE-AM-PM

- Edit
- Disable
- Launch now
- Delete

- On the Editing Scheduled Report page, edit the properties.

Editing Scheduled Report

Scheduling
Storage
Email
Remote Transfer
Alert

The following section defines the scheduling itself.

Name: INCHARGE-AM-PM

Schedule: Every day at 00 : 00

Active: ☒

Scheduled report properties

Scheduling	
Name	The name of the scheduled report.
Schedule	Determines the intervals at which the report will be generated. For example Every day at 00, 03, 06, 09, 12, 15, 18, 21 means the report will be generated 8 times a day, at intervals of 3 hours.
Active	Set whether the scheduled report is active, and will be generated at the intervals indicated or not. This is useful for temporarily toggling off report generation.

Scheduled report properties

Storage	
Stored	Set to stored or not.
Confirmation email	Sends a confirmation email that the scheduled report has been generated to the email addresses listed. You can use comma-separated values, and aliases are allowed if the configured SMTP server recognizes them.
Email	
Formats	Select the format you want to email the report in. You can select multiple formats.
Recipients	Enter a list of recipients where the scheduled report will be sent. You can use comma-separated values, and aliases are allowed if the configured SMTP server recognizes them.
Subject	Enter a subject for the email. This is mandatory.
Message	Enter a message for the email.
Remote Transfer	
Remote location	If you don't have a location set up, click New Remote Location. the remote URL must be in this format: - Local: file:///somedir1/somedir2 - FTP: ftp://username:password@[serverIP:port#]/somedir1/somedir2. Make sure that the ftp URL is absolute to the server root, not relative to the provided user's home group. - CIFS: smb://username:password@[serverIP:port#]/somedir1/somedir2 - CCM: ccm://username:password@registry:port/ccm-registry?service=Host-filesystem - SFTP: ssh://username:password@[serverIP:port#]/somedir1/somedir2. The username and password will be kept in clear in the APG master database. When sent on the network, the connection type provider encrypts this information.
Confirmation email	You can optionally enter confirmation email addresses. You can use comma-separated values, and aliases are allowed if the configured SMTP server recognizes them.
Alert	
	You can select Alerting Managers to receive the scheduled report.

View stored reports

Stored reports are the binary representation of the reports in the Web Portal.

You can use stored reports for large reports that take a long time to generate. A stored report's data is encoded in binary format so it is faster to display than runtime reports that retrieve their data on the fly each time. You can use stored reports to get a snapshot of your data in time as the reports display the data that was retrieved when the report was stored.

Stored reports are not a way to archive data. The binary format used to store them is not intended to be compatible between APG versions. Upgrading your APG Web Portal is likely to invalidate your stored reports.

You can use stored reports as a scheduled report format, so you can automate their creation. This is especially useful for reports you want to generate once a day or week and that are browsed frequently. In this case, the current settings for the report node are used when the stored report is generated as a result of it being scheduled.

Stored Reports Management

The list below shows the stored reports that you have manually generated, that you have scheduled for periodic generation and the shared reports that was generated by a member of your group.

Stored reports are "snapshot" reports, generated at a certain point of time. They are specially useful for heavy reports where generation time is just to long to wait for. You can also use them to freeze reports at some points in order to avoid unnecessary report generation. Stored reports can also be used as a scheduled report format, so you can automate their creation, especially reports you want to be generated once a day, week... and that are browsed frequently.

N.B. Nothing will happens if you try to delete a report owned by a member of your group.

Dashboards / Network Summary
[fixed reports]

Saved at Sunday, December 26, 2010 2:36:37 AM EST

Owned by you?	Yes
Generated at	Sunday, December 26, 2010 2:35:53 AM EST
Saved at	Sunday, December 26, 2010 2:36:37 AM EST
Summary	This version shows data between Saturday, December 25, 2010 2:35:53 AM EST and Sunday, December 26, 2010 2:35:53 AM EST and took 2.453 secs to generate.

Standard Reports / Service Level Reports
[fixed reports]

Transactions / Applications / Transactions (Irix ACM)
[standard table]

Remove All

Save

removes all stored reports

apply modifications

To view stored reports

1 Do either of these:

- Click the report in the report tree.
- At the top of the report tree under **Scheduled Reports** click **Stored Reports**.
The Stored Reports Management page shows the reports ordered by their generation date.

Stored report actions

View a report	Click the graph icon at the right on the blue bars.
View report details	Click the report name. The date and time when the report was first saved is displayed. You can expand this information by clicking it to show who owns the report, when it was generated and saved, and the report summary.
Delete a report	Click the trash can icon.

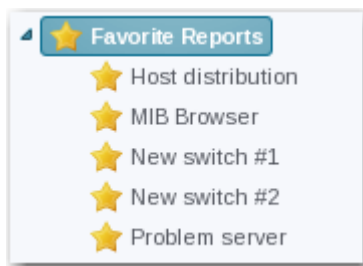
Save your favorite reports

You can have quick access to reports by making them favorites.

To add a report as a favorite

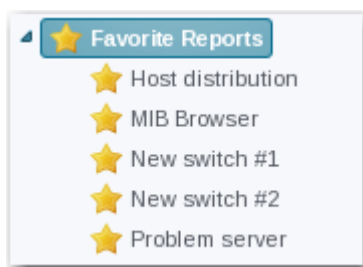
- 1 In **Browse** mode select the report you want to add.
- 2 On the **Report** menu click **Tools > Add to Favorite Reports**.

To access your favorite reports



- 1 Expand the list of favorite reports by expanding Favorite Reports or double-click Favorite Reports.
- 2 Display a favorite report by clicking it.

To manage your favorite reports



- 1 Click Favorite Reports.

Favorite report actions

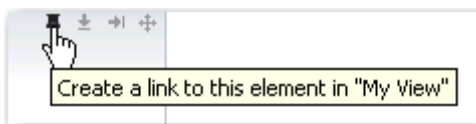
Edit the name	Edit the name in the Link Name field and click the Save button.
Edit which report is referenced	Edit which report is referenced by this link thorough the Location field. Often this field is auto-populated when you add a report to the favorites. You can enter a URL, such as to a peripheral module like the MIB Browser.
Generate and display a favorite report when you log on	Select Use as Login Report for the report you want to see at startup. Note: You can only choose only one report to display at startup so enabling this option for one favorite disables it for another.
Do not have a report display when you log on	To have no report show up by default on startup, click Clear Login Report . If you have specified a URL for the logon process, then Use as Login Report is ignored.
Go to a report	Click the graph icon to go directly to the report.
Delete a favorite report	Click the trash can icon to delete a report. Favorites are not deleted until you click the Save button. Deleting a report does not remove the node from the tree, but only the shortcut to it.

Add reports to My View

My View gives you a place to view the reports you frequently refer to. My View appears under My Reports the first time you add a report to it.

To add a report to My view

- 1 In Browse mode, while you're viewing a report, mouse over the top-right corner of a report, and click the pin. The report is added to the root of My View.



- 2 When you click **My View**, the reports under it are displayed in a Mixed report by default.



A report you move to My View is linked to its source report and retains its relationship with it.

You cannot edit a report in My View, but must edit the original source report.

You can treat the nodes under My View, including the My View node, like other nodes in the tree, and copy and paste nodes to or from My View, delete or create nodes, and edit the settings of any node. The individual reports are only links to their sources.

You can cut and paste the My View node to another location in the tree, but when you add new reports to My View, a new My View node appears under My Reports with the newly added report.

About report parameters

Topics

- [About report parameters](#)
 - [About filtering & expansion parameters](#)
 - [About the Filter Configuration Wizard](#)
 - [About expansions](#)
 - [About the Property Selection Helper](#)
 - [About complex node expansions](#)
 - [Types of complex expansions](#)
 - [About configuration parameters](#)
 - [About report detail parameters](#)
 - [About formula parameters](#)
 - [Add a formula to a node](#)
 - [Edit formula results](#)
-

About report parameters

When you select a report node in the tree in Edit mode, the page displays the parameters used to generate the report. Unlike Browse mode, where changes you make are applied only to the selected report for the current session, the changes you make in Edit mode are saved and apply to all users.

Parameters

Filtering & Expansion	Controls the basic properties of the node and what will be reported on using the filter and expansion criteria.	About filtering & expansion parameters
Report Configuration	Controls the core settings that define the report, the report type, which determines the settings in the Report Details, the time period of the report, and level of data aggregation.	About configuration parameters
Report Details	Controls the details for the report, which vary according to the report type.	About report detail parameters
Formula	Manages formulas applied to the node.	About formula parameters

About filtering & expansion parameters

Filtering & expansion affects the report node properties. You can edit the name of the report node, the filter used for variable selection and other advanced settings.

Name

Name is the name that is displayed in Browse mode, except if you use expansion. When the node is the result of an expansion, its name is replaced by the expansion evaluation.

Unique identifier

This option is hidden by default. To get access, click the anchor icon at the right of the Name setting.

You can link between reports by using the identifier. When you paste a report as a link, you can use the unique identifier if it exists. A unique identifier can be composed of letters, numbers, and the characters period (.) comma (,) dash (-), underscore (_) or spaces. Report identifiers can also be used to define report restrictions and to control branches to be skipped by the frontend search engine.

Filter

The Filter is the expression used to select the variables that make up the content of the report. Because the filter determines the report's dataset, it is a vital part of the report configuration. There are several ways to create a filter. If you know what properties and values you want to set, you can manually edit a filter, or you can use the Filter Configuration Wizard to help you define the filter. See [About the Filter Configuration Wizard](#).

Use the filter of this node for

Specifies how the filter is used. This is relevant only if an expansion and filter are configured.

Expansion only	applies the filter while expanding the node using the expansion. This means that nodes that could have been generated through this field but that do not match the filter will not be created. Selected variables are not affected by the filter.
Selection only	applies the filter after the node expansion. This means the expansion is performed without taking the filter into account and each resulting node is passed through the filter.
Expansion and selection	combines both previous options. The filter of the node is used for the node generation as well as each resulting node for the variables it selects.

Display policy

Always show the node	is the default behavior. The node is always shown in the tree.
Hide if no variable is selected	hides the node if its filter doesn't select any metric.
Hide if the node is a leaf	hides a node if it doesn't have any children. This is especially useful with expanded nodes, as they may expand into an empty list.
Hide if no variable is selected or if the node is a leaf	is a combination of the two previous functions.
Hide in Browse mode but use for report computation	is useful when defining a node that should be used for building reports above it only, but not as a report itself (for instance, when chaining formulas).
Always hide this node	never shows the node. It is useful to temporary disable a report. This also disables formulas applied to this report node.
Hide except when it's the target of a link	hides the node, except when it is the target of a link.
Show this node only in the tree and not in the report	forbids drilling-down to this node from a parent report.

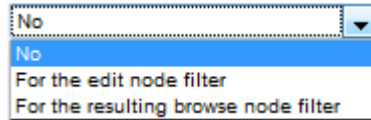
Expansion

Expansions enable you to create individual reports for each occurrence of a given property in the data that you have collected. See About Expansions for more information.

Advanced parameters

Use filter on unmatched variables

Use filter on unmatched variables creates nodes that use the variables the sibling nodes have not selected. This kind of node can act as an Others or Unmatched node if no filter is specified.



For the edit node filter	Choose this in most cases, as it selects all the variables that are not chosen by the sibling nodes with reference to the Edit mode filters. For example, if a few sibling nodes select the same IP address, the Other node selects all the other IP addresses. If there is no expansion, there is no distinction between the Edit and Browse node filters. If there is an expansion, this setting returns the unmatched results of the sibling filters as they appear in Edit mode. This differs from how the resulting node filters are expressed in Browse mode, and gives different results.
For the resulting browse node filter	Use this setting, for example, when you are using the Top-N for events property to select a reduced set of results in the expansion, or when doing complex expansions that result in a partial list of results. In these cases, the unmatched results are evaluated against the filters of the expanded nodes in Browse mode, so the result is all the variables that are not chosen by any of the expanded nodes. In both cases, the results are subject to any parent node filters. You can use filters on these other variables that the node with the unmatched option selects.

Disable report browsing

This blocks real-time report generation, which is useful for big reports that can't be generated in a timely manner and should not run on-the-fly. As an alternative, these reports can be scheduled and stored.

If report browsing is disabled, when a user clicks a report node the most recent stored report for the node is displayed. Otherwise a message appears that the report cannot be displayed.

Reports cannot be displayed if they or any of their children that are to be displayed in the parent report have this setting enabled.

Node icon

If you want APG to choose an icon automatically, use the default icon.

Child Node Ordering

The last section lets you order child nodes either by position or by name alphabetically. Simply drag and drop the children in the desired list before saving your modifications. You can rearrange items in the *Order by Position* list, while items are forced into alphabetical order in the *Order by Name* list. This section does not appear if there are not children nodes.

About the Filter Configuration Wizard

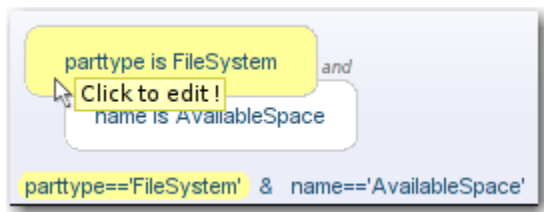
The Filter Configuration Wizard helps you design report filters to select what you want to report on.

The Filter Configuration Wizard is available wherever a filter can be applied in APG, including in the Filtering & Expansion tab of a report's edit settings, in a value column of a table report's edit settings, and when editing formula parameters.

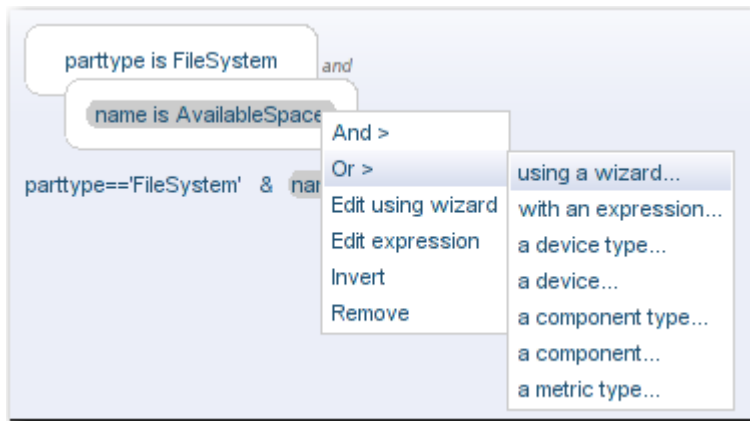
The filter editor has two parts:

- a graphical representation of the filter
- the filter expression

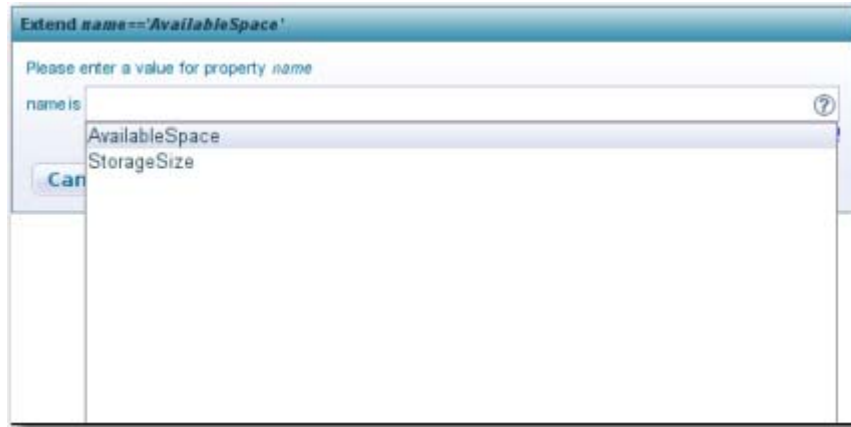
The two are linked so that you can view the location of the filter part on the corresponding representation. Mouseover a filter part on either representation and it will, along with its corresponding part, be highlighted in yellow. To edit a filter, highlight what you want to change and click it.



When you make a selection to edit, the edit menu appears. You can then refine (And), enlarge (Or) or Invert the selection. You can also remove or edit the selected part of the filter either directly or using a wizard.



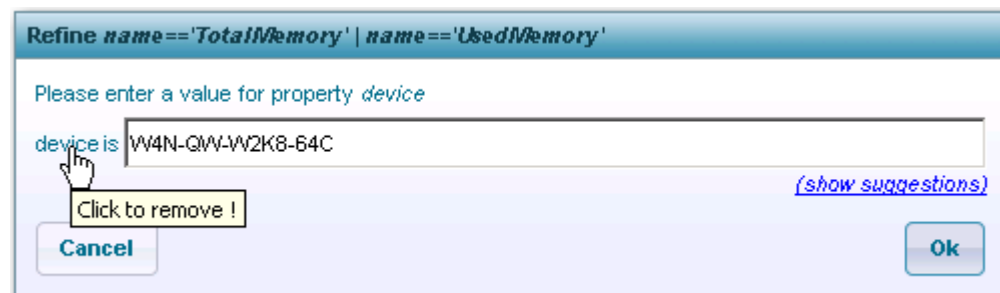
Say you want to select the available space but the total storage size also. Choose **Or** and **using a wizard** to get the Filter Wizard.



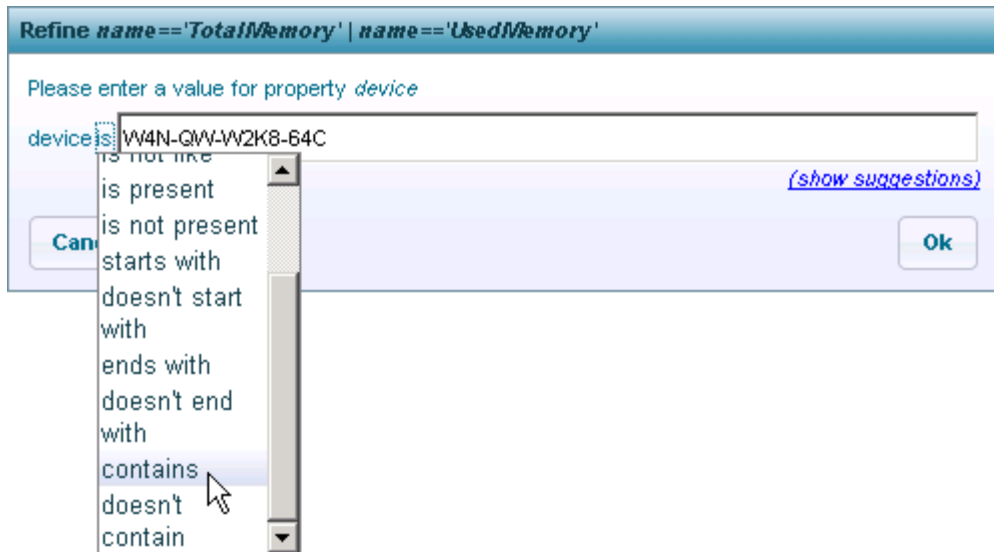
The Filter Wizard guides you with hints based on data stored in your APG database. For example, the Wizard shows only the metrics that are related to file systems: Available Space and Storage Size. Then the predicate name StorageSize is built by clicking the desired metric.



When you create a filter from scratch, the Filter Wizard first help you choose the fiirst property to filter on. You can later change it if you click on the property name.



If you do not want an exact match on values, you can click the initial **is** condition to get a drop down list of alternative choices. For example, if the value of the property you are selecting simply has to contain particular text, you can select the **contains** condition.



Experienced users can directly edit the filter or a part of the filter expression. To do this, on the **Wizard** menu choose the **Edit** expression. The Filter Editor appears with the selected expression, ready for editing.

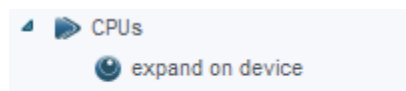


The editor checks the filter syntax while you are typing. If the filter becomes invalid, an error message shows you what is wrong and what is expected.

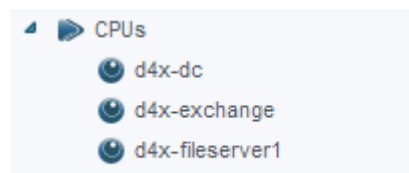
About expansions

Expansions enable you to create individual reports for each occurrence of a given property in the data that you have collected. For example, data collected from a server called *d4x-fileserver1* is normally tagged with the property-value pair *device=d4x-fileserver1*. If you have a network with three servers: *d4x-dc*, *d4x-exchange* and *d4x-fileserver1* and you create a report node that expands on the *device* property, your tree in browse mode will contain three distinct nodes.

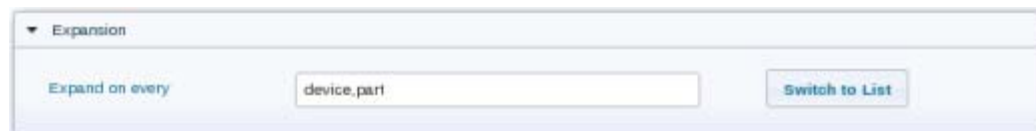
In Edit mode:



In Browse mode:



You can use more than one property for the **Expand on every** setting in which case nodes are created for unique occurrences of the property combination.



To configure an expansion you can use a combination of these:

- To add one or more properties to the expansion using the Property Selection Helper, click the **Add a Property** button. See [About the Property Selection Helper](#).
- You can edit properties by clicking the pen icon, remove them with the trash icon, or reorder by dragging them.
- To manually add or edit properties in a text field, click the **Switch to Input Field** button. The Expand on every box displays the previously selected properties, separated by commas. You can add additional properties or edit the existing ones. When you're done, click the **Switch to List** button.

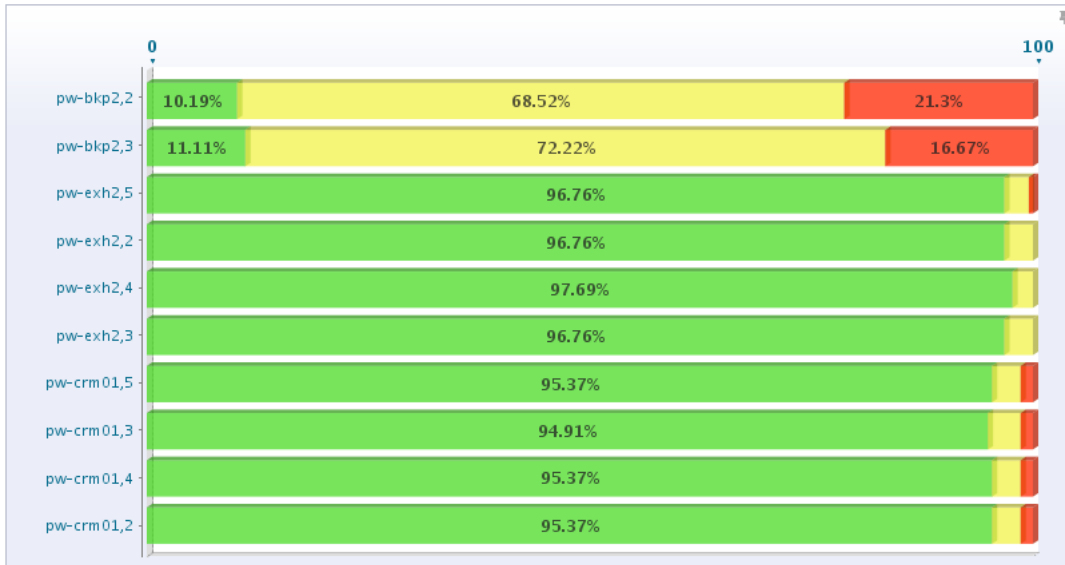


The Horizontal bars and Time ratio bars graphs can take advantage of a special notation when you use multiple properties in your expansion. When you switch to input field, you can group properties using parenthesis to group bars in two distinct levels. Using *device,part* generates one bar per unique combination of device and part while using *(device),(part)* will generate multiple part bars under distinct devices. Property grouping can be used in conjunction with complex expansions to shorten node names if required.

Here is an example of a Time ratio graph with a regular multiple expansion:

My Reports / CPU Current Utilization

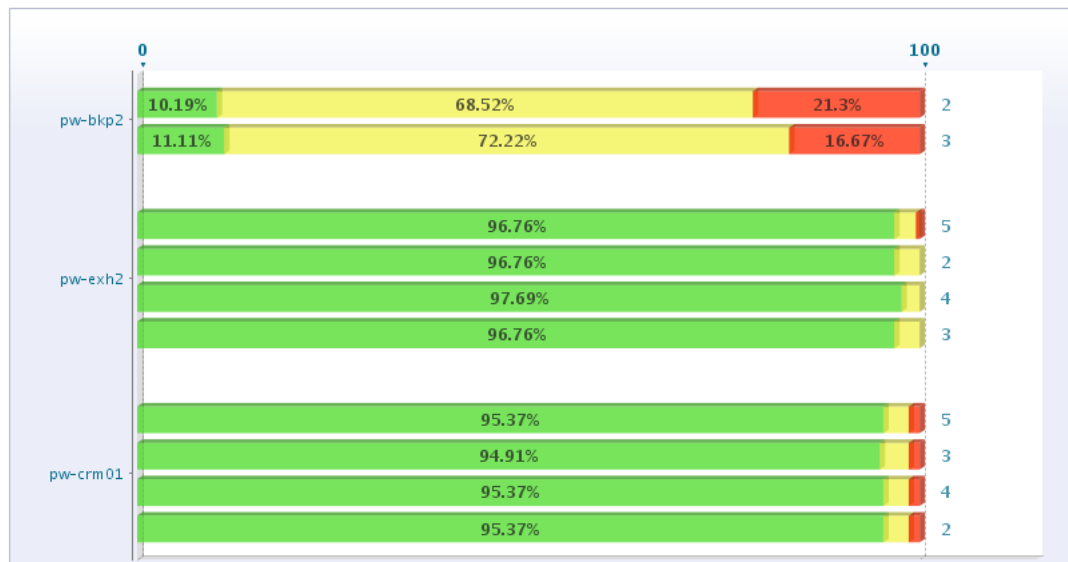
May 2012, Tuesday 1 5:09 PM » Wednesday 2 11:09 AM, EDT | Last 18 Hours: average on real-time



Here is the same example using grouped properties. Each device is clearly identified with its distinct processors:

My Reports / CPU Current Utilization

May 2012, Tuesday 1 5:08 PM » Wednesday 2 11:08 AM, EDT | Last 18 Hours: average on real-time



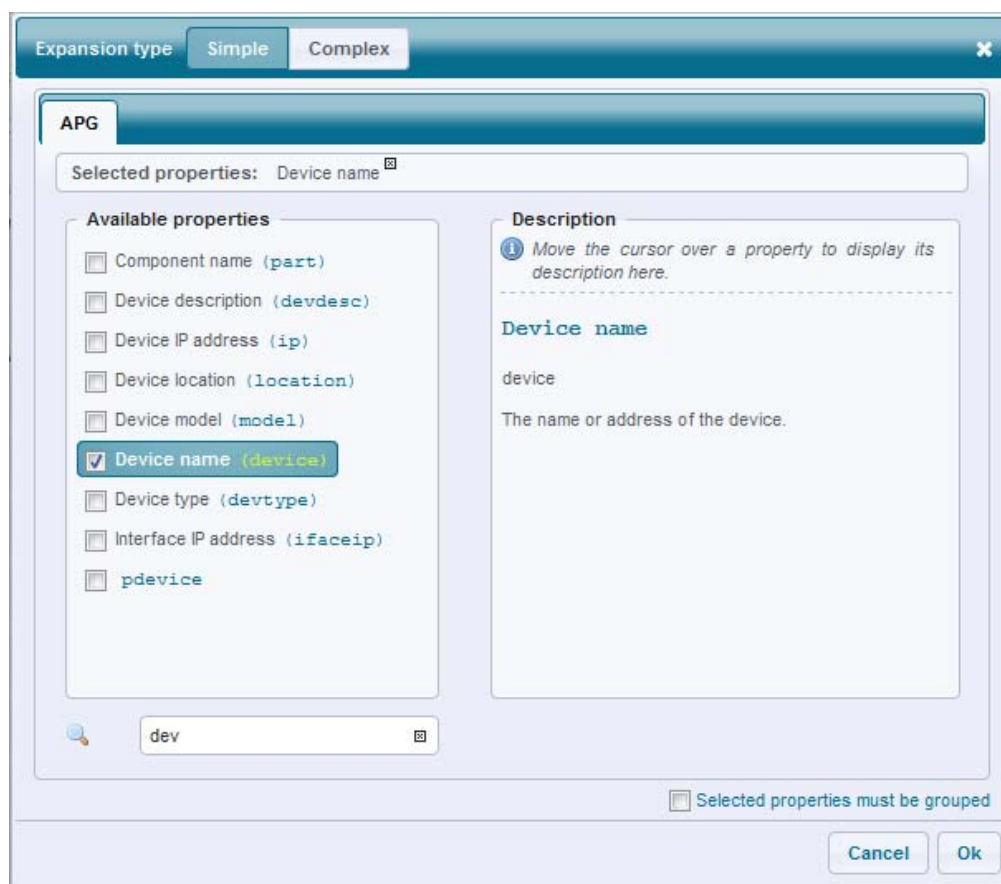
About the Property Selection Helper

Use the Property Selection Helper wherever you need to select properties from the database:

- to determine the expansion criteria of a node
- to select properties to display at the top of reports
- to select properties to display in columns of a table report
- to select properties to display in the legends of graph reports
- to select properties in formulas.

To access the Property Selection Helper click the **Add property** button or the **Show Property Selection Helper** button at the end of a Property field.

The Property Selection Helper has lists of properties that are configured by the administrator. There can be properties for events, technologies you are using in your infrastructure or other categories depending on your needs.



The **Selected Property** area displays the properties that are selected. This area is not displayed when you use the dialog in Complex mode. If multiple properties are displayed, you can:

- reorder the properties by dragging and dropping them. The order of properties determines the order they appear in the legend and the order that property names are displayed in for expanded nodes.
- remove a property by clicking the x beside the property name.

The **Available Properties** area lists the available properties for the page. From here you can:

- select one or more properties from the tabs. These properties appear in the Selected Properties area.
- mouse over a property to display its description.
- filter properties by entering a filter in the field beside the magnifying glass icon. The filter is applied to property names and descriptions.

About complex node expansions

Besides simple expansions, where you expand on one or more properties, you can perform a complex expansion that lets you perform calculations in the context of an expansion. With complex node expansions you can:

- separate properties that each can have a list of values
- group and remove nodes based on matching criteria
- remove filters applied to parent nodes.

Complex expansions are based on one of four expansion types that can be entered: dual-regex, sql, regex and split. The expansion types enable you to create groups based on a subpart of a property value. There are also complex expansion shortcuts that help you set up a complex expansion. See [Types of complex expansions](#) for examples of each complex expansion type.

Expansions are based on pattern matching and transformations. The syntax for complex expansions is:

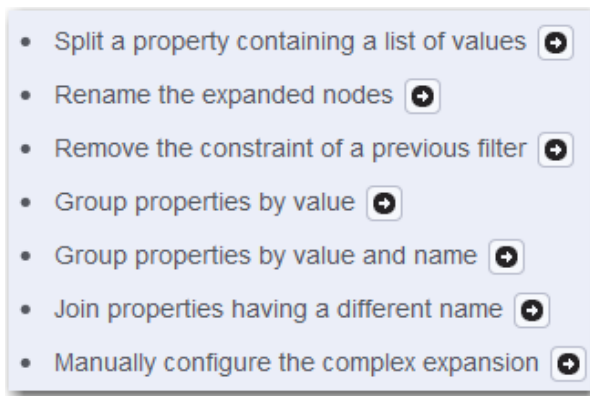
`property<type=complex expansion type;param1=value1;param2=value2;...>`

where the expansion type is a string to identify which complex expansion you want to use.

You can't use ';' or '>' characters in a parameter value; they must be escaped with '~'.

To set up a complex expansion

- 1 In **Edit** mode, select a report node in the tree where you want to apply a complex expansion.
- 2 On **Filtering & Expansion** click the **Add a Property** button.
- 3 On the **Property Selection Helper**, click the **Complex** tab.
- 4 From the Wizard, make a selection.



- 5 Follow the instructions for configuring the complex expansion. The Preview box displays the sample results for your selection with the expansion criteria applied.
- 6 If you chose to manually configure the complex expansion, select the type of expansion from the complex expansion list.
Note: After you enter a complex expansion from one of the shortcuts, if you re-enter the dialog to edit the expansion, its values populate a subset of fields of one the manually configured complex expansion types.
- 7 Click **OK**. The complex expansion criteria appear in a box in the Expansion area. You can edit it by clicking the pen icon, delete it by clicking the trash icon, or reorder the expansion criteria using other expansion selections. You can click the Switch to Input Field button to edit the syntax of the complex expansion manually.

Types of complex expansions

Dual Regex Pattern Match (type=dual-regex)

This expansion uses these parameters:

value-match	the first regular expression that property values are matched against
value-replace	the replacement string applied to the previously matched values. The result of this replacement is the group name
group-match	a regular expression that is matched against the previously generated group names
group-replace-regex	a replacement string to create a regular expression from the group name, to match property values to be included in this group

This expansion is evaluated in three phases:

- For each distinct property value, match the property value with value-match. If the value matches, replace it using the replacement string value-replace. The resulting value creates a new node in the tree.
- For each node created in the first phase, apply a transformation on its name using the regular expression group-match and replacement string group-replace-regex. This transformation creates a third regular expression.
- Rematch any property value with this regular expression (like a filter). If the value matches, it is selected by the group node.

An example of creating an expansion for groups

There are three devices in a network, so the property device is expanded in three values: dev-w4n-montreal, router-w4n-montreal, server-w4n-toronto. To use the city part of the device names and group devices by location:

- Create location groups from the device names with this expression: `^.*-w4n-(.*)$ → $1`
- To match the groups *montreal* and *toronto*, use a matching device. A matching device is a device whose name ends with the group name, which is the city name in this example. For the *montreal* group, the matching regular expression is `^.*-montreal$`.
- To match a device in a group, build the previous regular expression from the group name with this replacement: `^(.*)$ → .*-\\Q$1\\E`.
- The result is this expansion:
- `device<type=dual-regex;value-match=^.*-w4n-(.*)$;value-replace=$1;group-match=^(.*)$;group-replace-regex=.*-\\Q$1\\E>`

Combined Regex/Api Pattern Match (type=sql)

This expansion uses two regular expressions and transformations to create new groups based on an APG pattern. This is very similar to the Dual Regex Pattern Match except that the values are matched in groups using an APG filter instead of a regular expression. It is usually faster to use this expansion when possible.

This expansion uses these parameters:

value-match	the first regular expression that property values are matched against
--------------------	---

value-replace	the replacement string applied to the previously matched values. The result of this replacement is the group name
group-match	a regular expression that is matched against the previously generated group names
group-replace-sql	a replacement string to create an APG pattern (with % and _ wildcards) to match property values to be included in this group

This expansion involves two distinct phases:

- For each distinct property value, try to match the property value with value-match. If the value matches, then replace it using the replacement string value-replace. The resulting value will create a new node in the tree.
- For each node created in the first phase, apply a transformation on its name using the regular expression group-match and replacement string group-replace-sql. This transformation should create a valid APG pattern that will be applied to the created node as property='pattern'.

Back to our example of creating an expansion for groups

- Create location groups from the device names with this expression: `^.*-w4n-(.*)$ → $1`
- To match the groups *montreal* and *toronto*, use a matching device. A matching device is a device whose name ends with the group name, which is the city name in this example. For the *montreal* group, the matching filter is 'device=%-montreal'.
- The result is this expansion:
- `device<type=sql;value-match=^.*-w4n-(.*)$;value-replace=$1;group-match=^(.*)$;group-replace-sql=%-$1>`

Regex Pattern Match (type=regex)

This expansion type is a simplified version of the two previous types. Most of the time, the values used to create group names should belong to those groups, and only to those groups. This is what the Regex Pattern Match does, skipping the post matching phases of the Dual Regex Pattern Match and the Combined Regex/ Apg Pattern Match.

This expansion uses these parameters:

value-match	the first regular expression that property values are matched against
value-replace	the replacement string applied to the previously matched values. The result of this replacement is the group name

Again, our example of creating an expansion for groups

- For each distinct property value, try to match the property value with value-match. If the value matches, then replace it using the replacement string value-replace. The resulting value will create a new node in the tree. The value which name has been transformed to the group name is automatically included in the group.
- The result is this expansion:
- `device<type=regex;value-match=^.*-w4n-(.*)$;value-replace=$1>`

Split Property Expansion (type=split)

This expansion type allows you to create reports using relations between objects. A relation is typically achieved by storing one or several object names (for example a device name) in another object's property (for example, the remote system property).

This expansion uses these parameters:

value-separator	the character used to separate entries in the targeted property
property-separator	the character used to separate properties when values contain multiple entries
properties	the name of the properties whose values are extracted by the split operation. Multiple occurrences can be used if more than one property needs to be identified in the generated filter
level-up	parent nodes to be skipped in the construction of the node's filter
name-override	used to choose a specific name for the created node

First example

In this example, the collected data includes a property to identify peer interfaces called *peerifs*. It contains a list of device-part pairs expressed like this: *peerifs='device1,part1;device1,part2;device2,part1'*.

Our goal is to create a node for each distinct device-part pair and associate a filter to each node allowing us to select the proper data: *device=='device1' & part=='part1'*.

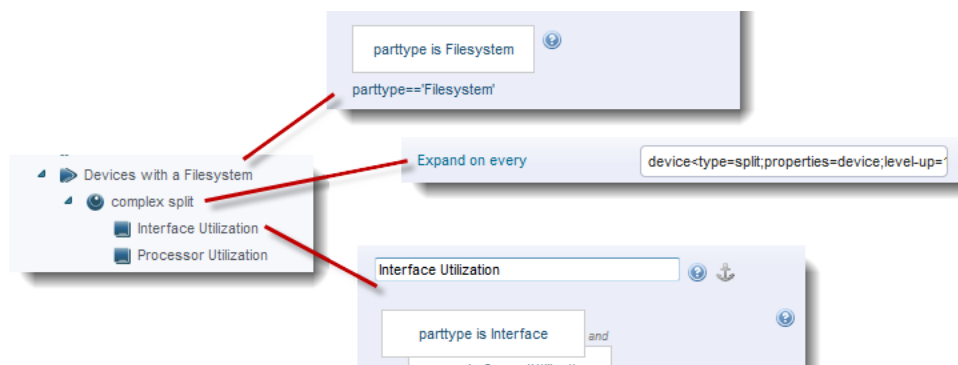
- The result is this expansion:
- `peerifs<type=split;value-separator=~;;property-separator=,;properties=device;properties=part;level-up=5>`

Note that you can use the ~ character to escape the semi-column when it is the targeted character to split values or properties. You can use the *properties* parameter several times if you want your filter to contain multiple parts. The name of the resulting node will be the name of the matched value if not overridden by the *name-override* parameter.

Second example

The split expansion can be used to void the filtering effect of parent nodes.

This is useful when the filter to make your selection is incompatible with what you want to report on. For instance, if you want to report on Interface utilization (parttype='Interface') of devices that have a Filesystem (parttype='Filesystem'). To do this, simply split on a property, create the filter using the same property and use the level-up parameter to void the effect of the selection filter: *device<type=split;properties=device;level-up=1>*.



About configuration parameters

From here you specify the report type and preferences for a node. These settings affect the way reports are displayed in Browse mode. Runtime changes made in the parent report display options are applied when propagating settings to child reports. The changed settings are applied to child nodes when you drill down from stored reports.

Filtering & Expansion
 Report Configuration
 Report Details: Table
 Formula

Display Mode

default display

?

Report Type

standard table

?

Report Rendering

static charts by default

?

Default Duration

last

1 day

?

Sampling Period

real-time

?

Sampling Type

average

?

Propagate time selection on drill-down

☐

?

Description and Properties

Report Description

```
<div>
  <p class="title">Title</p>
  <p>Details about this report</p>
</div>
```

?

Displayed Properties

Add property

?

Advanced Settings

Paging Mode

show all values

?

Paging Limit

25

?

Time Zone

Universal time from:

America/Montreal (inherited)

?

Dynamic Maintenance Periods

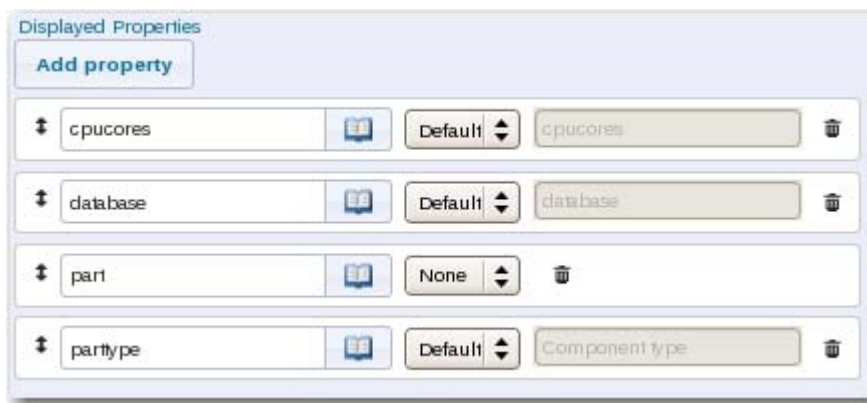
None

?

Display Mode	How multiple reports are placed on the report page. You can also rearrange reports on a page manually.
Report Type	The default reporting type to be used for this node.
Default duration	The time range to be displayed on the report. Time range is not always taken into account, for example, if in a table value column you choose to use a fixed time range instead of the report's, or for formulas where the duration is explicitly selected. You can exclude time periods from the report by clicking the calendar icon.
Sampling Period	The aggregate interval to be used when selecting this node. You can also configure the report to use aligned data for one of the aggregates.
Sampling Type	The aggregation to use. This is not taken into account for report types such as pie charts or horizontal bars.
Propagate time selection on drill-down	Enables the temporal settings of the current report to be used for all child reports when drilling down to them from the report in the page area. The settings are: • Default Duration • Sampling Period • Sampling Time

Description and properties

You can edit these to add descriptive information to the report.



Report description	The information that is displayed at the top of the report. You can use XHTML in <div> tags in the description. Report descriptions are included in many APG generic reports and ReportPacks.
--------------------	---

Displayed properties	The properties displayed on the top of the report, which include contact name and location. The default name of the property can appear in its title, displayed in the gray text box. - To display the short property name, select None or enter a custom name. - To add a new property, click Add property and use the Property Selection Helper. See About the Property Selection Helper. - To edit a property, click its Property Selection Helper. - To reorder properties, rearrange the bars using drag and drop. - To delete a property click its trash can icon. - To search for a property, start typing the name of a property in the property box. As you type, the list displays the possible matches. We recommend that you use the displayed properties when the report is for a single device, as only one value will be displayed for each added property.
----------------------	--

Advanced settings

Advanced Settings settings include the page length of reports and time zone.

▼ Advanced Settings

Paging Mode

show all values

?

Paging Limit

25

?

Time Zone

Universal time from: America/Montreal (inherited)

?

Dynamic Maintenance Periods

None

?

Paging mode	Edit the number of lines displayed in one page of a table. - Display all values: all pages will be available. - Do not show if more that N values: nothing is displayed if there are more values than what is entered for the Paging limit. - Show the first N values: displays only the number of values for the Paging limit.
Paging limit	Defines the length of a table's page according to the values for the Paging mode.
Time zone	Specifies the time zone for a report generated on this node. Inherit means that the time zone is inherited from the parent node. If there is no parent, the report uses the time zone for the profile of the current user. From the first list select whether universal time is used or whether the time period is aligned. Universal time from is the default APG behavior. Universal time means that the time period displayed is according to the time zone selected for the report in the adjacent list, and data shown in the report is relative to its time zone. For example, selecting the last hour of data displays data from the current time, which is 10:00 America/Montreal time, and as expressed along the x-axis, back to 9:00 America/Montreal time. If a device is situated in Montreal, you see data that occurred from 9:00 to 10:00. If you are also monitoring devices in Paris the data between 9:00 and 10:00 has occurred between 3:00 and 4:00 AM Europe/Paris time. The other effect of universal time is that daily and weekly aggregates are delineated on UTC time. For example, the daily aggregation period for America/Montreal is from 18:00 - 19:00 as the Montreal time zone offset is UTC - 5 hours.

Align data on UTC using tz property with the following reference	Time-shifts the data from different time zones to align them. This setting tells APG to align data so that it is time zone independent in the report. Aligned data is displayed using aligned aggregates. Using aligned time zone aggregates has two effects: • Data from different time zones is time-shifted to a universal day where data is expressed according to the local time zone where the data was recorded. For example, data at 9:00 locally is aligned with data at 9:00 at a remote time zone. Data can then be compared at each time zone in relation to how users experience it during a typical day or week. Without using aligned aggregates, data from different time zones is expressed in relation to the local time zone of the report. • For aligned daily and weekly aggregates, days and weeks are delineated according to 24 hour 7 day periods where time zones are aligned. Without using aligned aggregates, days and weeks are delineated according to UTC. When you use aligned data, the second time zone list sets the reference. This is important when choosing data from the last day. If the data is aligned, and America/Montreal is the reference point, if it is 13:00 in Montreal and you display the last day of information, the data returned is from 13:00 today to 13:00 yesterday. If you choose Europe/Paris as the reference, and it is 19:00 in Paris, the last day extends the report from 19:00 on the current day to 19:00 yesterday and there won't be information in the report for the last 6 hours in Montreal because it has not occurred yet in the day where the time zones are aligned. Reference is important if time zones occur on different days. The day the report covers is determined by the reference time zone. For this functionality to be available it must be configured in the Backend and the APG Web Portal. Whether there are daily and weekly aligned aggregates is determined in the Backend setup. For aligned aggregates of one hour or less, the Frontend computes them on the fly on a best effort basis if aligned time zones are enabled. Some aggregates are not generated: the local time of the aggregate must be a number of whole hours offset from UTC for the one hour aligned aggregate to be computed. Locations with an additional half-hour offset such as Asia/Kolkata (UTC +5:30), are not computed. For more information, see <i>Storage Group configuration</i> in the <i>APG Backend Admin Guide</i>. You are not explicitly informed whether time zone aligned aggregates are available, but in most cases, if Align data on UTC using tz property with the following reference is available in the first time zone list, aligned time zone aggregates are available for each sampling period. These constraints apply to using aligned data: • Maintenance periods configured in APG appear in graphs, but are not used for computations or in tables. If you configure a maintenance period from 8 to 9, this period is highlighted in the graph, and pertains to 8 to 9 in all time zones, as the data is aligned. • Do not use the Outage Editor with aligned data as the results will be inaccurate. • Do not plot events on the same graphs as aligned data with an Overlay, as the results will be inaccurate. Events cannot be aligned across time zones as timeseries data can.
Dynamic Maintenance Periods	Set the maintenance period to use for this node, according to one set up in the Outage Manager. See the <i>Outage Manager Administration Guide</i> for how to set up outages and maintenance periods, and how to connect to them from the Frontend. Maintenance periods are incompatible with aligned time zones.

About report detail parameters

The Report Details correlates with the report you select for Report Type in the Report Configuration. All reports of the same type, such as graphs, have the same report details to configure. If a report has no configuration settings the Report Details tab is not available.

Report details for each report type are discussed in [Creating and editing reports](#):

- [Edit Table reports](#)
- [Edit Graph reports](#)
- [Edit External reports](#)
- [Edit Map reports](#)
- [Edit Topology reports](#)
- [Edit Overlay reports](#)

About formula parameters

Formulas enable advanced computations on any number of values. You can apply formulas to any node of the tree. Formulas can perform operations independent of the context of the node they are applied to.

To create new formulas or edit existing ones, go to:

- [Add a formula to a node](#)
- [Enter or edit formula parameters](#)
- [Edit formula results](#)

math.SpatialMin → Results [min]

Computes the min of the given metrics.

This formula gets the min a group of combined parameters and/or child results.

▼ 1 Parameter to Enter

Name	Description	Definition
metric	The parameter that contains the metrics from which to get the min.	Empty Parameter

● No Setting to be Set

▼ 1 Result Returned

Name	Description	Options
min	The computed min.	☒ show in graphs ☐ default result

Where you use formulas depends on the type of report and the hierarchy of the nodes. When you apply a formula to a node, the result can be plotted on a graph, inserted into another formula, passed to a parent node, displayed in a child-based parent report, or displayed in a value column in a table on a parent node.

Some behavior occurs when applying formulas to nodes that are subject to an expansion. Depending on the formula type, input parameters can be aggregated from the child nodes in a formula applied to the parent of these, and results viewed in a parent node can be an aggregation of the results returned by the child nodes.

Formulas defined in one report can be used in another one. To copy and paste formulas, you can use the same editing tools that are available to copy and paste table columns. See [Copy and paste](#).

Add a formula to a node

When you add a formula to a node, the formula is applied to the node's parameters, settings, and the types and names of results returned. Formula results can be used in a variety of places including the current node.

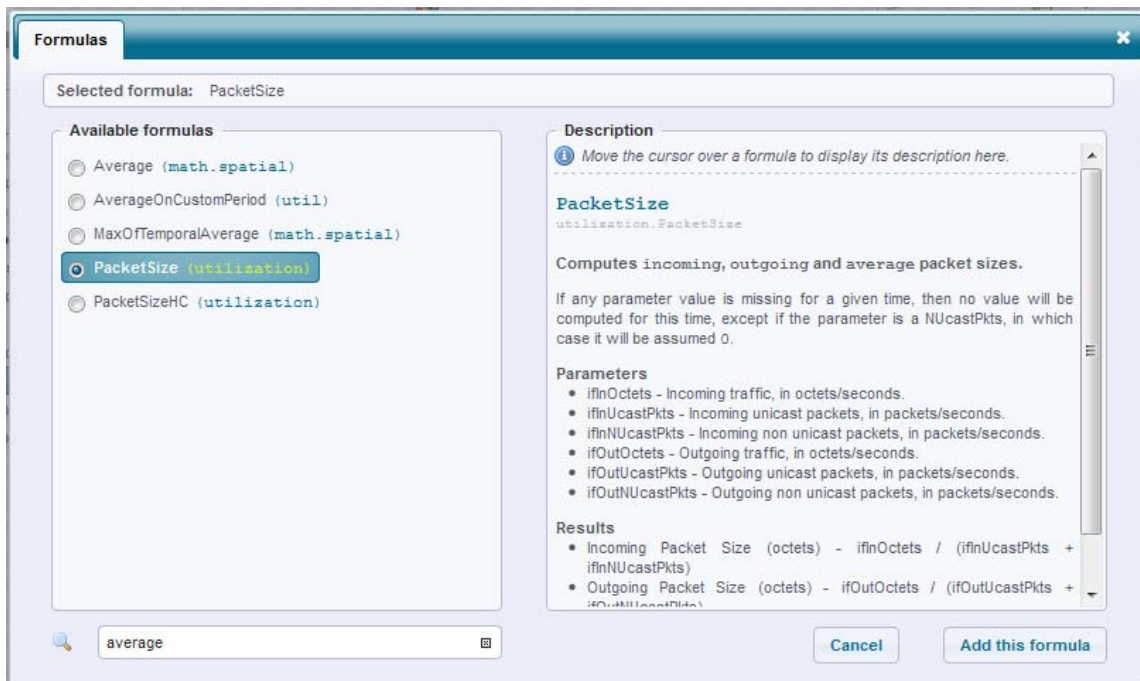
How you apply a formula depends on the results you want:

- If you want to plot the results of a formula on a simple chart or bar chart for a node, you can apply the formula to the node.
- If you want to use the results of a formula in a table report, apply the formula to a child of the parent table report node.
- You can use formula results from the current node or direct children as parameter inputs on the current node, so you can add several formulas to a node whose results are combined.
- If you want to use the results of a formula in any child-based report such as a child-based chart or stacked bars, apply the formula to a child of the node of one of these report types.
- If you want to pass the results of a child node to a parent of the current node, you can apply a formula to the current node. You can apply formulas to nodes in a hierarchy to pass the results further up until they are accessible at the node level you require.

All formulas have an least one result, and each result has additional options for whether they are displayed in different contexts. See [Edit formula results](#).

To add a formula to a node

- 1 In **Edit** mode select the node you want to apply a formula to.
- 2 Click the **Formula** tab.
The Formula edit settings appear. The formulas that are currently applied to the node appear collapsed and display their name and results. To expand a formula to view its contents, click its name.
- 3 Click **Add a Formula**.
The Formula Selector appears with the formulas listed alphabetically.



- 4 Use the filter to help find the right formula, select the formula you want to use and click **OK**.
The contents of the new formula are displayed with its name, results and a description of the formula.

math.spatial.Average* → Results [average]

Computes the spatial average of the given metrics.

This formula averages a whole bunch of combined parameters and/or child results.

▼ 1 Parameter to Enter

Name	Description	Definition
metric	The parameter that contains the metrics to average.	Empty Parameter 

▼ 1 Setting to be Set

Name	Description	Value
Filter NaN Values	If set to true, all NaN values will be removed from the result.	false

▼ 1 Result Returned

Name	Description	Options
average	The computed average.	☐ show in graphs ☒ default result

5 Enter settings for the values:

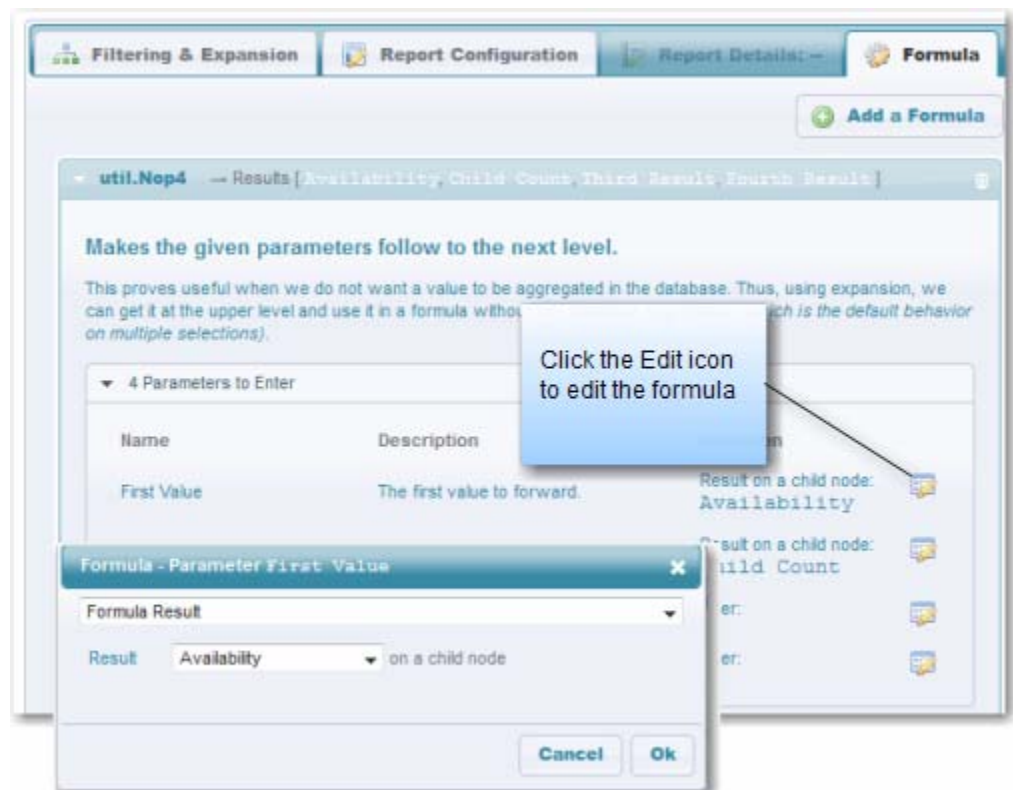
Parameter	These can be values over an interval of time defined in the formula, such as the results of a filter or a child formula. Whatever constraints the formula has to what it can compute are not automatically applied. Not all formulas have parameters to enter. See Enter or edit formula parameters .
Setting	Constant values that are used by the formula. You can change the default settings. These can determine, for example, the time range of the report, values that determine SLA objectives and settings that affect the aggregation the formula uses. Not all formulas have settings. To enter formula settings see Enter or edit formula parameters .
Result	The results returned by the formula. Each result has a default name that can be edited. The names are used for these purposes: - in the legend of graphs to identify each result if Show in Graphs is enabled for them. - to identify the result when using it as an input parameter for another formula, and when displaying it in a value column of a parent node table report. Names should be unique. If there are two results with the same name and you want to display the results in a parent table report, only one instance of the name is available and the result displayed is the aggregate of the formula results with this name. Result names are case sensitive so you can change the capitalization to differentiate results.

Enter or edit formula parameters

You can enter or edit parameters that control how a formula is computed. What you can enter is formula-specific. You can add a formula or edit one.

To enter formula parameters

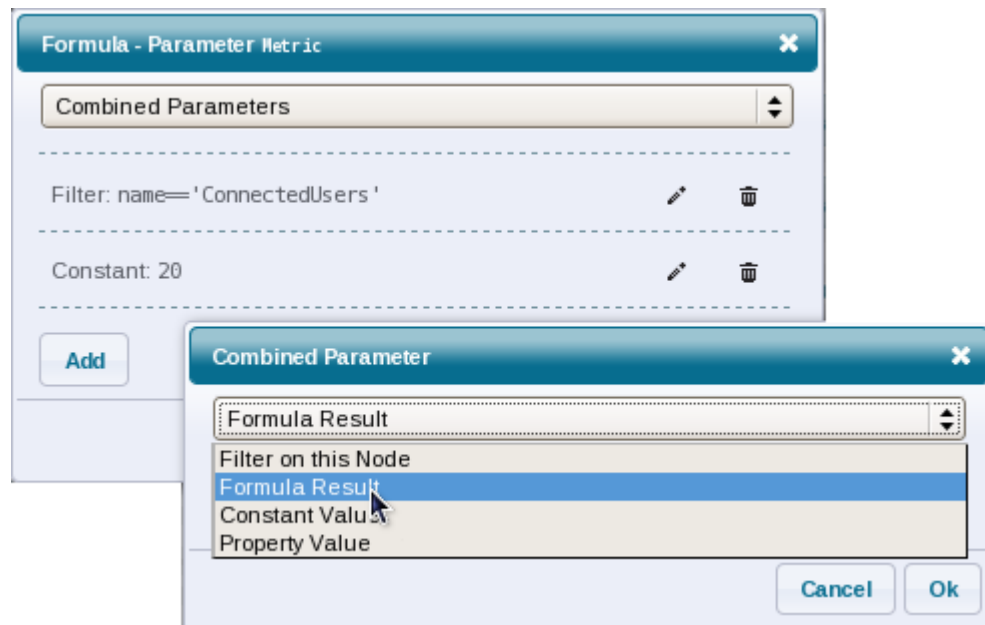
- 1 In **Edit** mode, select the report you want to work with.
- 2 Click the **Formula** tab.
The Formula edit settings appear. The formulas that are currently applied to the node appear collapsed and display their name and results. To expand a formula to view its contents, click its name.
- 3 Expand the **Parameter to Enter** and click the Edit icon at the end of the parameter.



- 4 From the list, select a formula parameter.

Filter on this Node	Use a standard APG filter to select the parameter to use. Values are subject to the filter of the current node, its parent nodes, and any other filters applied to the user or role. You can select any filter, but there can be specific values that are required.
Formula Result	Use the result from a formula as the parameter. A list appears that displays the available results you can use. See Edit formula results . • On a child node: results from formulas of nodes that are direct children of the current node. To push the results from lower-level child nodes see Pass a result. • On the current node: results from other formulas on the current node, which can be used as a parameter value for this formula. Result names are taken from the default name the formula gives the result or the name you give the result.
Constant Value	Enter a float value to use as a constant input such as 3.0.

Property Value	Click the Property Selection Helper icon and select a property whose value will be the input parameter. You can select only one property to enter. See About the Property Selection Helper . You can also type a property name in the Property field. Property values either register as a numerical value, or if not possible, do not return a value.
Combined Parameters	Enables you to combine parameter instances and types of Filter on this Node, Formula Result, Constant Value or Property Value. 1 Select Combined Parameters and click the Add button. 2 Choose a parameter type and click OK. The parameter definition appears in a list on the original Formula - Parameter page. 3 To edit the new parameter, click the pen icon. How the combined parameters are treated depends on the formula. Usually they are aggregated spatially using the inherited report duration and aggregation settings, or by the time settings defined in the formula. Some formulas treat combined parameters in other ways. Refer to the formula and parameter descriptions for more information.
Empty Parameter	The parameter has no value (null).



Edit formula results

You can enter formula results to control how results are returned and how they are named. The name is important when you reference individual results. The results available are formula-specific.

Results in the graph are applicable only for simple chart and bar chart graphs. Other graph types show other data, from their children, for example.

Show in graphs For simple chart and bar chart graphs, if you select show in graphs for a formula result, the metrics of the node that are not displayed. Only the formula results you have enabled will show.

Default results You can choose one result from the results for all of the formulas on the node to display in a direct parent report that is a child-based report. To do this, select default result for the result. If the result is applied on an expansion, the result plotted in the parent node will be an aggregation of all child results.

To edit formula results

- 1 In **Edit** mode, select the report you want to work with.
- 2 Click the **Formula** tab.
The Formula edit settings appear. The formulas that are currently applied to the node appear collapsed and display their name and results. To expand a formula to view its contents, click its name.
- 3 Expand the **Results Returned** box.
- 4 You can modify the result **Name** by clicking it and typing a new name. Names are shown in the legend, and when choosing the result in another formula, or in a value table column.
- 5 For each result, you can choose whether to display it in a graph.

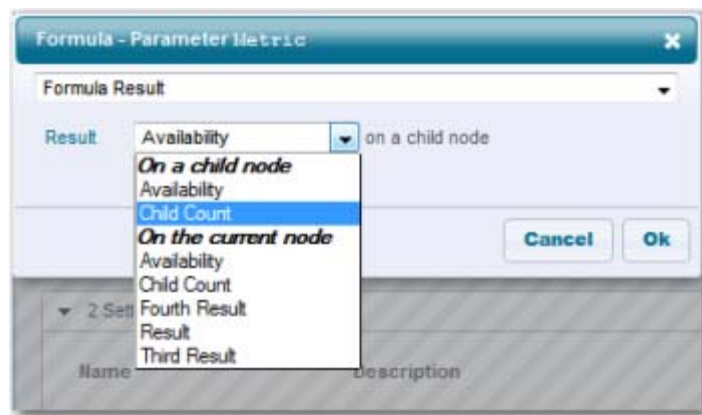
Name	Description	Options
Availability	The first forwarded value.	☐ show in graphs ☒ default result
Child Count	The second forwarded value.	☐ show in graphs ☒ default result
Third Result	The third forwarded value.	☐ show in graphs ☒ default result
Fourth Result	The fourth forwarded value.	☐ show in graphs ☒ default result

Pass a result

You can pass a node's result to other nodes higher in the hierarchy, where it can be used in other formulas. The child result of the current node is passed to the parent. You can also pass a result to another formula on the same node.

To pass a result

- 1 In **Edit** mode, select a node with a child formula result you want to pass up to the node's parent.
- 2 Click the **Formula** tab > **Add a Formula**.
- 3 Locate the new formula and click the **Edit** icon.



- 4 On **Formula Parameter** select **Formula Result**, and from the **Result** list select the formula result to pass and click **OK**.

- 5 Adjust the **Result Returned** values if you want to and click **Save**.

Creating and editing reports

Topics

- [About Edit mode](#)
 - [Accessing Edit mode](#)
 - [About the Edit mode interface](#)
 - [Report tree tools](#)
 - [About My Reports](#)
 - [Edit Table reports](#)
 - [Add an attribute](#)
 - [Add a property](#)
 - [Add a value](#)
 - [About time thresholds](#)
 - [Copy and paste](#)
 - [Edit Graph reports](#)
 - [Edit External reports](#)
 - [Edit Map reports](#)
 - [Edit Topology reports](#)
 - [Edit Overlay reports](#)
 - [Create a report with the Report Wizard](#)
 - [Arrange reports](#)
-

About Edit mode

In Edit mode you can customize your report tree and set the properties for reports and their display options. Unlike Browse mode where your changes are temporary and apply only to the current session, Edit mode saves your changes. Changes you make to templates when you're in Edit mode apply to all users.

About working in Edit mode

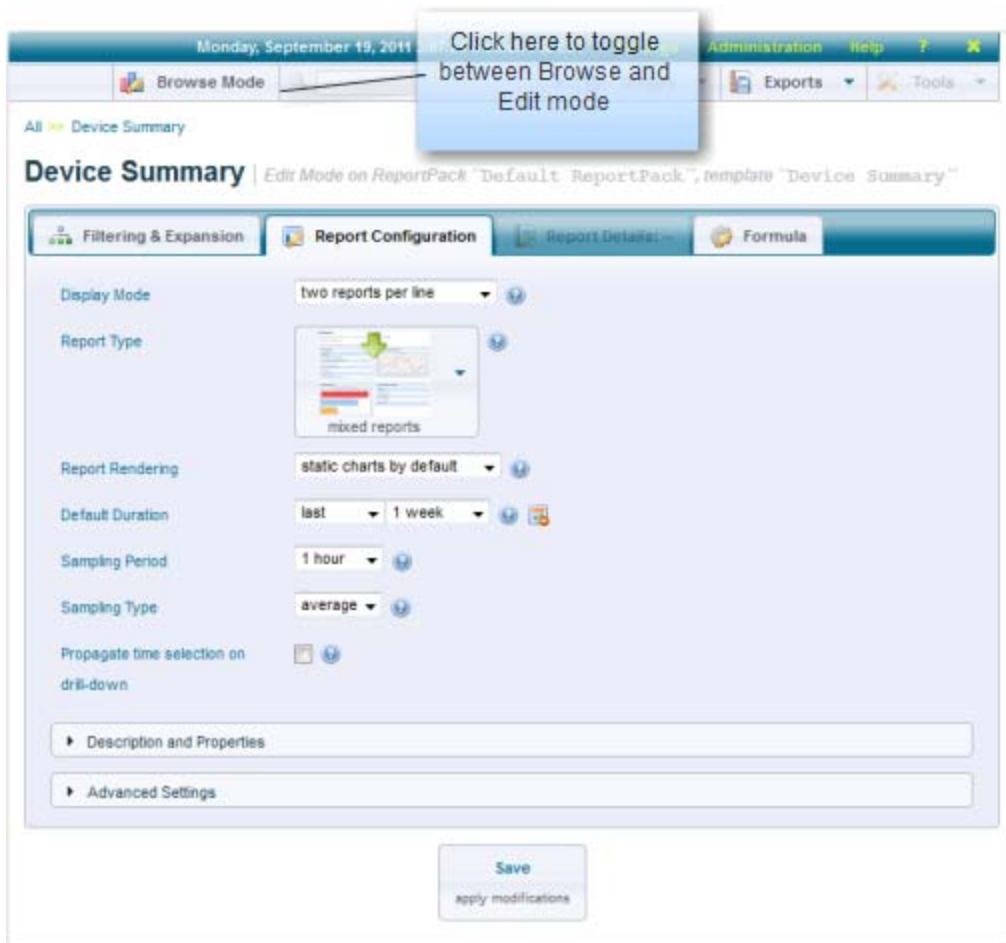
Before you edit a report, we recommend that you copy the report you want to work on to the My Reports area, make your changes, and then copy the report to the body of the tree. Working in My Reports gives you a workspace where you can edit reports and test your changes before deploying them to the system.

We recommend you make a backup of your report tree before making major changes. You can make a backup from the Settings page. See [Edit your user settings](#).

Accessing Edit mode

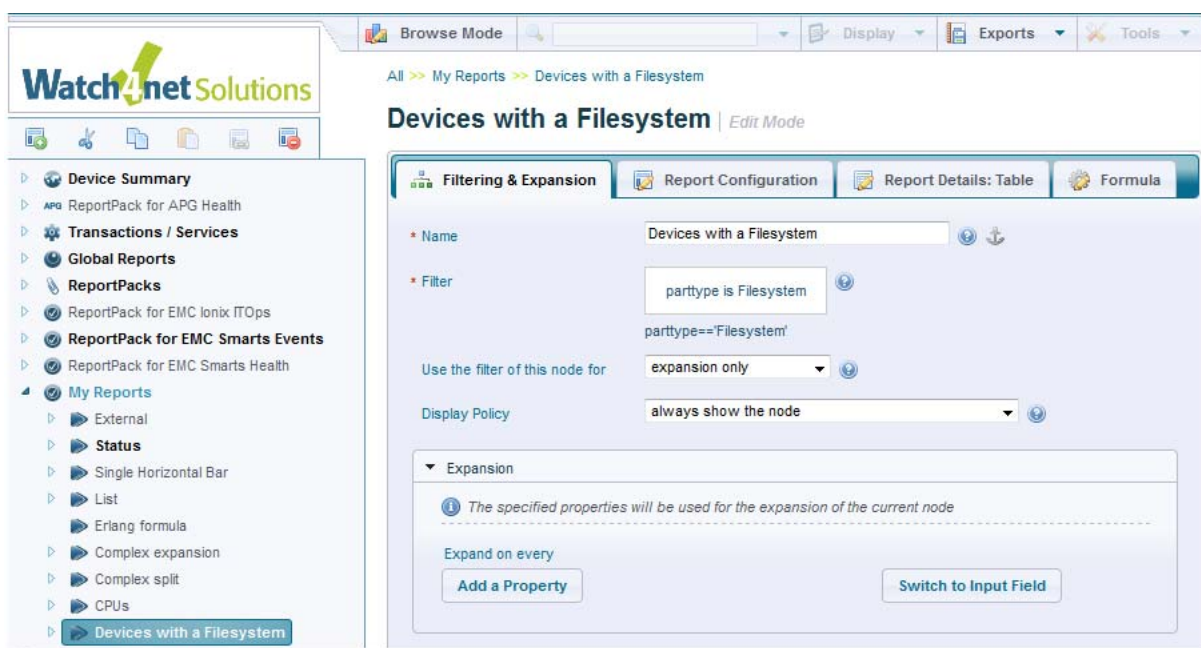
To access Edit mode, on the top menu click **Edit Mode**. You can go back to Browse mode at any time by clicking Browse Mode.

If your tree is locked you are not able to modify it in Edit mode.



About the Edit mode interface

- Report tree** In Edit mode, the nodes in the report tree are not expanded, as they are in Browse mode.
- Report tree tools** Use these to add, delete, cut, copy, paste, and link report nodes.
- Reports** Reports that are displayed in the page area of the user interface in Browse mode are replaced by report editing pages.
- Toolbar** On the Report toolbar, the Search, Display, and Tools menus are unavailable. The only options available are to return to Browse mode or export the report.



Report tree tools

In **Edit** mode the Report Tree Tools appear above the report tree.

	Creates a new report node as a child of the selected one. The node is called New Report and can be customized.
	Deletes the selected report node and all its children. This action can't be reverted.
	Cuts a report node to be pasted elsewhere in the tree. After you paste it, the report node is deleted from its original location.
	Copies a report node and its children to be pasted elsewhere in the tree. Although the report node and its children appear in its original and new location, copied report nodes are not linked in any way. Modifications made to a copy are not reflected in the original report. Use the Link tool to create shortcuts.
	Pastes a copied or cut report node.
	Creates a link to a previously copied report node. A linked node is not a copy of the original report node, but a reference to it. Any modifications made to the original report node are applied to the link node. Be careful because the link will be broken if you remove, move or alter the tree structure around the linked node. A broken link has a warning icon.

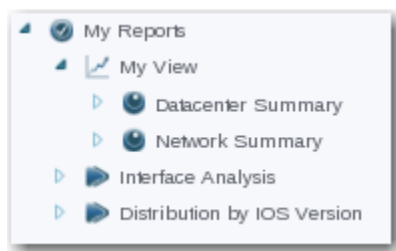
About My Reports

My Reports gives you a centralized area to manage the reports that most interest you and a place where you can edit reports from, view them and make other changes before adding them to report tree. While you are working on a report in My Reports, no other user is able to access or modify it.

We recommend that, before you edit a report, you copy the report you want to work on to the My Reports area, make your changes and then copy the report to the body of the tree. Working in My Reports gives you your own workspace where you can edit reports and test your changes before deploying them to the system.

My Reports appears at the bottom of the report tree if you have write and custom report privileges. My Reports also appears if you add a report to My View.

If you don't see the My Reports node, contact an administrator to enable Custom Reports for you.



My Reports has two elements:

- My View, which is optional, creates a single view combining a selection of your favorite individual reports. See [Add reports to My View](#).
- Report nodes, which are similar to other report nodes from the tree except that they are private. You can work on and view these reports without other users having access to them.

By default, clicking My Reports displays the reports under it in a table report. To copy and paste reports to or from My Reports, to create new reports or to delete reports from there, use the tree modification tools in [Report tree tools](#).

A report copied to the My Reports area maintains no relation to the report it was copied from, and is edited independently. You can also paste links to other reports in the tree to My Reports to keep track of reports from there.

Edit Table reports

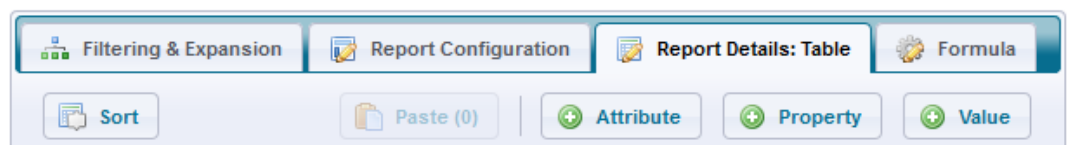
Table reports will include one line for each sub-node of the tree where the table report is defined. Sub nodes can be created one by one or be the result of an expansion. See [About expansions](#).

You can add details to tables by adding columns for the kind of information you want to add. Once you have columns defined, you can change the order in which they appear using the Sort button.

You can add columns to display:

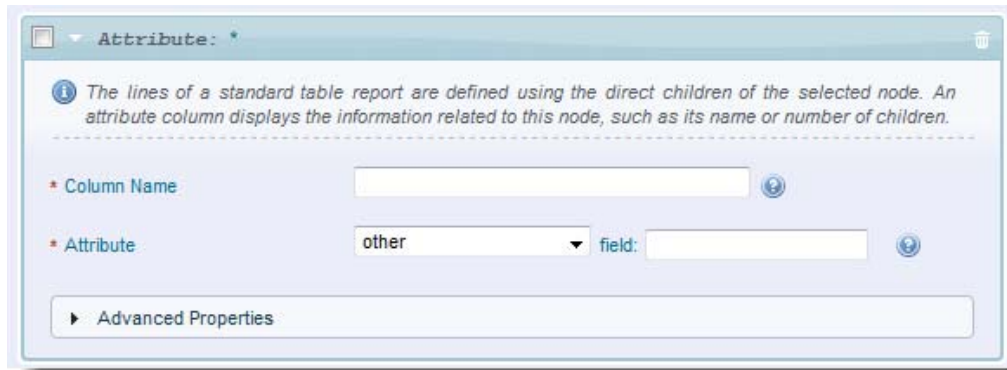
- [Add an attribute](#) adds an attribute of a child node. An attribute can be the name of the child node, when it's expanded, for example.
- [Add a property](#) adds the value of a property from the ones that are collected by APG.
- [Add a value](#) adds a value to display with its own aggregation definition.

For a report category all of the report details are the same. This means that you can change the report type to another one of the same category and the report settings remain applicable. After you save the settings, the report details are saved from session to session, even if you switch to another report type.



Add an attribute

The lines of a standard table report are defined using the direct children of the selected node. An attribute column displays the information related to the current parent node, such as its name or number of children.



To add an attribute

- 1 To access Edit mode, on the top menu click **Edit Mode**.
- 2 Click the type of table report you want to add an attribute to and copy the report to the **My Reports** area.
- 3 On the **Dashboard** click **Report Details: Table > Add an Attribute**.
- 4 In the **Column Name** box type a descriptive unique name for the column.
- 5 From the **Property** list select a property.

Other	displays the name for the property you type in the field box.
Node ID	displays the node short ID, relative to its parent
Global ID	displays the complete node ID, starting from the root of the tree
Node name	displays the name of the node
Global name	displays the complete name of the node, starting from the root of the tree
Expansion names array	choose this only if a multi-expansion is applied to the node that will appear in the table. In the field box type the index of this zero-based array that contains each part of the multi-expansion.
Node filter	displays the node short filter, relative to its parent
Global filter	displays the complete node filter, starting from the root of the tree
Child count	displays the number of children of that node

- 6 Click **Configure column sorting** and use drag and drop to configure the order the columns will be displayed in.
- 7 You can optionally click **Advanced Properties** and enter a display condition. Select *show* (default) to display the column, *hide* to hide it or enter a regular expression that the current node's name must match for the entire column to be displayed.

Add a property

A property column displays a property about the selected variables of the child. This can be any collected property, such as a part, for example http, https or ssh, or the device, which could be the name of the server.

Property: *

A property column displays a property about the selected variables of the child. This can be any collected property, such as a part, for example http, https or ssh, or the device, which could be the name of the server.

* Column Name

* Property  

 Advanced Properties

To add a property column

- 1 To access Edit mode, on the top menu click **Edit Mode**.
- 2 Click the type of table report you want to add an property to and copy the report to the **My Reports** area.
- 3 On the **Dashboard** click **Report Details: Table > Add a Property**.
- 4 In the **Column Name** box type a descriptive unique name for the column.
- 5 In the **Property** box type the name of a property, or click the Property Selection Helper icon and select one or more properties.
- 6 Click **Configure column sorting** and use drag and drop to configure the order the columns will be displayed in.
- 7 You can optionally click **Advanced Properties** and enter a display condition. Select *show* (default) to display the column, *hide* to hide it or enter a regular expression that the current node's name must match for the entire column to be displayed.

Add a value

A value column fetches a value from the database. You specify the value with a filter, such as your CPU utilization and can express the value in the format you choose, such as percentage or bits per second.

Value: *

A value column fetches a value from the database. You can specify the value with a filter, or as a formula result, such as the amount of your CPU utilization, and can express the value in the format you choose, such as percentage or bits per second.

* **Column Name**

Selected Value use the filter below ▼

Filter to Apply Everything

Time Management

Value settings

Advanced Properties

To add a value column

- 1 To access Edit mode, on the top menu click **Edit Mode**.
- 2 Click the type of table report you want to add a value to and copy the report to the **My Reports** area.
- 3 On the **Dashboard** click **Report Details: Table > Add a Value**.
- 4 In the **Column Name** box type a descriptive unique name for the column.
- 5 From the **Selected Value** list select one where the value is retrieved from:
 - Select **use the filter below** and from the **Filter to Apply box** select or configure a filter.
For how to use the filter wizard see [After you make your changes click Save](#).
 - Select where the value should be retrieved from: availability, child count, third result or fourth result.

- 6 Click **Time Management** and set up the time management options. The Time Management section controls the time and aggregation of the selected values.

Time Management

The Time Management section controls the aggregation and time periods of the selected values. If more than one time period is defined, the values will be represented by several columns in Browse mode.

Sampling Period: real-time

Sampling Type: average

Column Time Range(s): inherit report time range

Recover...: the last value only

* Time Threshold: 600 seconds

- 7 From the **Sampling Period** list choose from the computed aggregates in the database. Adjusting this option can significantly reduce the report generation time. For example, if you're reporting on a month or a year, selecting a day or week aggregate instead of real-time will dramatically increase the report generation speed. This is important because with such long ranges, a fine level of detail is generally not necessary.
- 8 From the **Sampling Type** list choose one of the available aggregated values stored in the database. You can choose average, min, max, sum, last (the last value), count (the number of received values) or last timestamp (the timestamp of the last received value) on the previously selected aggregate period.
- 9 **Column Time Range(s)** selects whether to use the report time range or to use a fixed time range, which you can then enter. You can also create several value columns according to given time slices. Simply select **generate a column on the** and choose previous 6 hours for each 1 hour for example to automatically create six columns.
- 10 **Recover ...** allows you to select the raw values that will be considered to display the result in the table. This field is normally **the last value only**. You can optionally select **all values in the time range** when the value is the result of a formula that requires a range of values in input. When you select **all values in the time range**, you can refine your **Sampling Period** and allow the system to select higher periods for performance reasons or force it to the specified sampling.
- 11 If you recover **the last value only**, use the **Time Threshold** box to enter an interval of time relative to the report time value. This acts like a tolerance interval for data retrieval. See [About time thresholds](#) for details about how thresholds work. **Note:** If you set 0 for a time threshold while recovering only the last value, you may not get a result (the table cell will be empty) using a real-time sampling period. It is recommended in this case, to set a meaningful threshold. The meaning of the time threshold differs according to the sampling period. If you select real-time, the threshold is in seconds. If you select an aggregate sampling type, the time threshold is a number of periods.
- 12 If you recover **all values in the time range**, use the **Temporal Aggregation** box to apply a temporal aggregation to the data other than the one used to extract it from the database. You can, for instance, recover averages (sampling type) from hourly aggregates and display the maximum (temporal aggregation) of those values.

- 13 Click **Value settings** and set up the format for displaying values. Values may not automatically display themselves the way you want and have too many decimal numbers or not be in the desired unit. Some formatters like status, value, value with background, rely on the definition of thresholds to function.

Value settings

Sets up the format for displaying values and the specific thresholds for the column. Values may not automatically display themselves the way you want, have too many decimal numbers, not be in the desired unit or visual alerts must be triggered.

Use Rounding ☒ 2 decimals

Scaling Mode none

Critical Level

Major Level

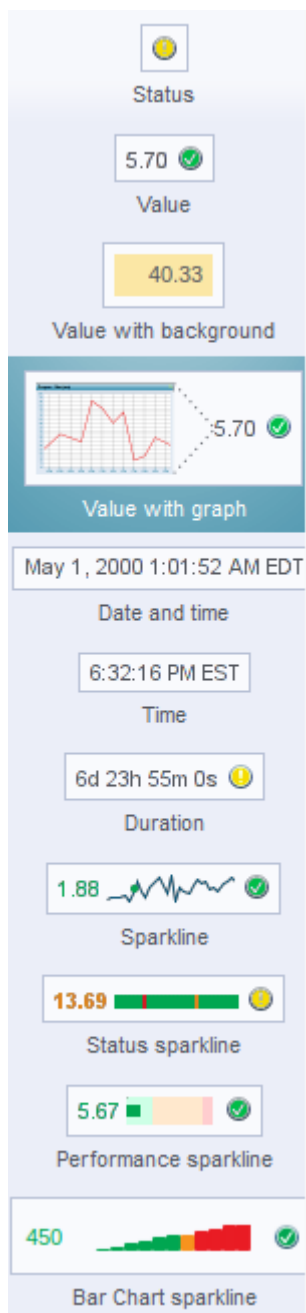
Value Display display all values

Is criticality ascending? ☒

Value Formatter Value with graph

- 14 As values may be floats, you can specify how many figures to have after the decimal point by selecting the **Use Rounding** check box. In the **Rounding Number** box enter how many decimal places you want to show in the value. For example, if you enter 2 in the field, a value of 3.14159 is displayed as 3.14.
- 15 If the unit of the values does not correspond to what you would like to display, select *multiply* or *divide* from the **Scaling Mode** list and enter the appropriate factor. You can also select *by unit* allowing you to select from a number of pre-defined unit conversions (bits vs bytes) and scaling factors (Kilo, Mega, Giga ...).
- 16 To enable thresholds, set a value in one or both of the **Critical Level** and **Major Level** boxes. If you have chosen a *by unit* scaling mode, the expected unit for threshold values will be displayed next to the input boxes.
- 17 You can hide lines whose values are below a threshold by making a selection from the **Value Display** list. You can choose to display all values, only major and critical values, or just critical values. Limiting the displayed values enables you to generate exception reports that present only relevant data.
- 18 If the Critical Level or Major Level box is empty or both have the same value, select or clear the **Is criticality ascending** box depending on your requirements. This option indicates whether the criticality is ascending, meaning a higher number means it is more critical, or is descending where lower values are more critical. If a number is given for both levels the direction of criticality is obvious and you do not have to select or clear this option.

- 19 From the **Value Formatter** list, select how you want to display the values of this column.



Status: Displays the status icon for the value according to the threshold levels that are set.

Value: Display the value in numeric form and the status icon.

Value with background: Display the value with the background color matching the defined thresholds.

Value with graph: Displays the value and status icon, and is clickable so you can display an inline graph popup plotting the value over the time period.

Date and time: Displays the date and time when the value was collected, converted from the UNIX timestamp, along with the status icon.

Time: Displays the time when the value was collected, converted from the UNIX timestamp, along with the status icon.

Duration: Formats a number of seconds into a duration.

Sparkline: Displays the value and status icon and an inline sparkline, plotting the value over the selected time period. The dot is the position of the value on the graph, to give an idea of the scale, and the color corresponds to the threshold.

Status sparkline: Displays the value and status icon and an inline status bar showing the status value over the time period. The line shows the status of each point of a value. If the band is green, the value is OK, orange indicates a problem, and red is critical.

Performance sparkline: Displays the value and status icon and an inline performance bar showing the performance of the value relative to the other values on the page for this column, over the time period. The performance spark line is like a gauge. It shows the value and where it is located compared to its thresholds.

Bar chart sparkline: Displays the value and an inline bar graph whose number of bars depends on the selected sampling period and report time range. For this formatter, you can specify the bars' width and spacing in pixels.

Note: The time zone used can be from the report, inherited from a parent, or that configured for the user's profile role.

- 20 Click **Advanced properties** and optionally set up these properties.
- 21 In the **Display Condition** box you can optionally enter a display condition. Select *show* (default) to display the column, *hide* to hide it or enter a regular expression that the current node's name must match for the entire column to be displayed.
- 22 Select **Complement value** if you want to convert a value to its complement. Values are converted to their complements only after they have passed through all other processing.

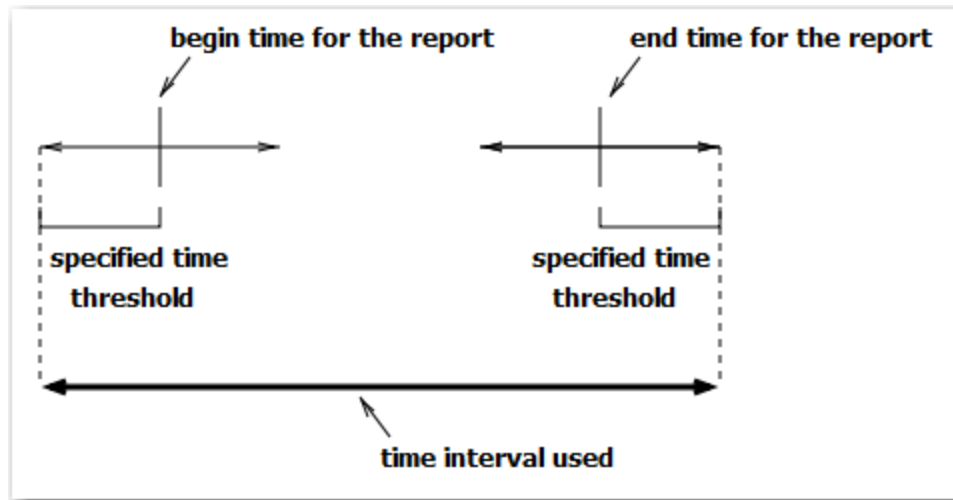
- 23 Select **Replace empty values by zero** if you want to show a 0 for values that are empty. Values are replaced by zero only after they have passed through all other processing.
- 24 Select **Use per line maintenance period** if you want to use the maintenance periods that are defined on each child node. The default is to use the maintenance period defined for the current node, but that might not reflect the real maintenance period for every child.
- 25 Select **Display Rows Matching Expression** if you want to use a JEXL boolean expression that the value must match in order to be displayed. *v* is the variable used to represent the numeric value. For example, rows are only shown if:

<code>empty(v)</code>	the value is empty
<code>(v >= 0.00 or v < 0.00) and not empty(v)</code>	the value is (greater or equal to 0.00 or less than 0.00) and not empty
<code>v > 10.00 or v < 5.00</code>	the value is greater than 10.00 or less than 5.00
<code>v != 0.00 and not empty (v)</code>	the value is not equal to 0.00 and not empty
<code>v == 0.00 && not empty(v)</code>	the value is equal to 0.00 and not empty

For more information about JEXL syntax, go to <http://commons.apache.org/jexl/reference/syntax.html>

About time thresholds

In this example a real-time aggregate is selected. The 600 set in the time threshold field means that the time interval used is from 600 seconds before to 600 seconds after the last time given in the report options.



If the 30 mins aggregate is selected, the time threshold is used as a factor of the aggregate. For example, a time threshold of 1 means that values from 1 * 30 mins before to 1 * 30 mins after the last time given in the report options is used for values.

Copy and paste

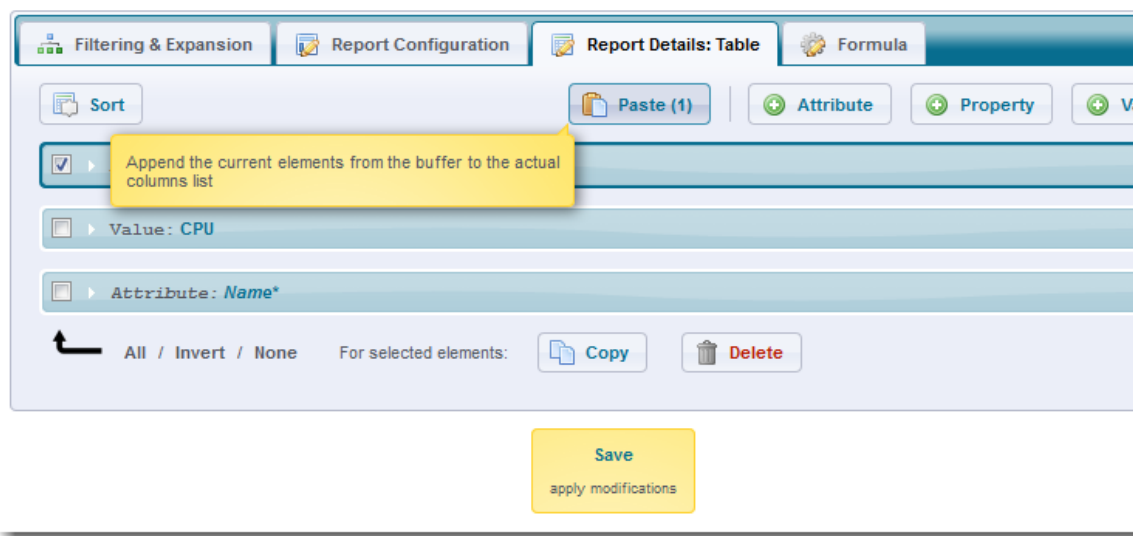
You can use column definitions that you already have defined as part of a new table report.

To copy and paste columns

- 1 Check the columns that you want to copy and click the **Copy** button. When columns are available in the clipboard to be pasted, the **Paste** button becomes available and indicates the number of items in the clipboard. You can easily select all columns using the **All** link available at the bottom of the panel. **Invert** will invert your current selection and **None** unselects all items.
- 2 To apply your selection to another report, navigate to the edition of another table report under the **Report Details: Table** tab and click **Paste**. Freshly pasted columns appear in italics and a star character next to the column's name tells you that these columns are not yet saved.
- 3 Hit the **Save** button at the bottom to include pasted columns in your new report.

[All](#) >> [My Reports](#) >> [New Report](#)

New Report | [Edit Mode](#)



Note that the items in the clipboard remain available for the duration of your entire work session or until you copy another selection. If you want to delete columns, you can use the Delete button to delete your current selection or click the little garbage icon located at the right to delete any column. The delete action is immediate but you need to save for the deletion to be applied. Navigate out and back in if you do not want to commit your deletion.

The same functionality is available for formulas used in your report definition. There is a separate clipboard for formulas.

Edit Graph reports

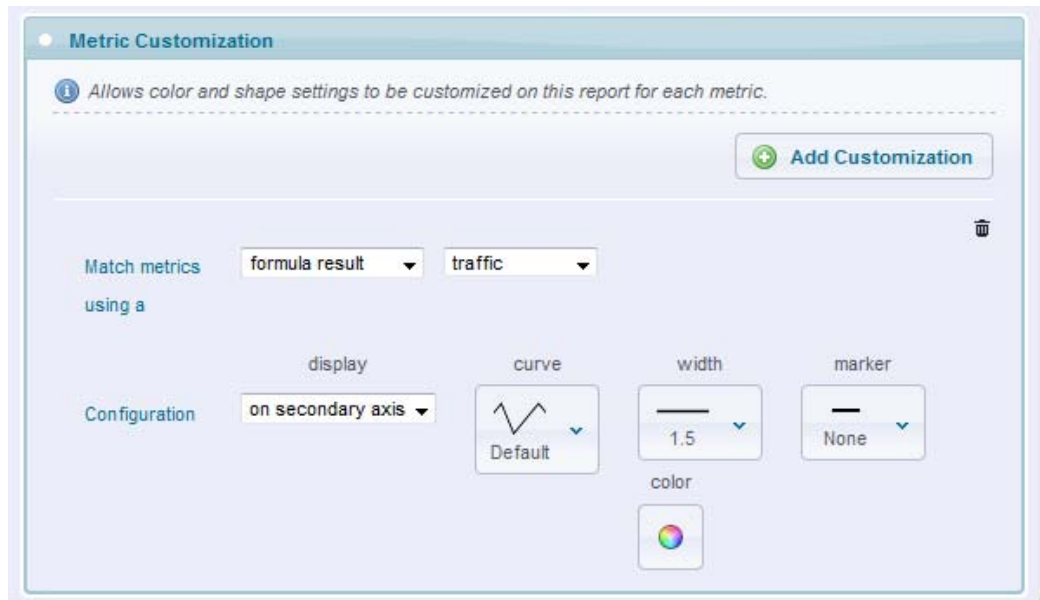
You can add more graphing information and or precision to any graph report, including regular, aggregated and Baseline reports.

To edit a graph

- 1 To access Edit mode, on the top menu click **Edit Mode**.
- 2 Click the type of graph you want to edit and copy the report to the **My Reports** area.
- 3 On the **Dashboard** click **Report Details: Graph**.

- 4 In the **Main Y-Axis Boundaries** boxes enter values if you want to make the main Y-axis of the graph display a specific range of values.
- 5 If the unit of the values does not correspond to what you would like to display, you can multiply or divide by a factor using the **Main Y-Axis Scaling Mode** drop down. You can also choose **by-unit** and select the required conversion using the offered choices. The **Binary** scale (KiB, MiB, ...) uses 1024 as the scaling factor, typically used for computer memory, while the **Decimal** scale (KB, MB, ...) uses 1000 which is typically used in storage. **Classic** was created for old interpretation of the multipliers where K = 1024.

- 6 The same settings (boundaries and scaling) are available if you define a secondary Y-Axis in Metric Customization. Using two Y-Axis allows you to better display metrics that have different ranges of values.
- 7 To customize the color or shape settings for metrics, in the **Metric Customization** area click **Add Customization** and filter on the property you want to customize. You can customize as many metrics as you like. This example shows selecting the traffic formula result but, depending on your graph settings, you can choose:
 - property value: selects all metrics having a given value for a given property
 - formula result: selects an output of a formula defined on the current node or one of its children
 - child report name: selects all metrics coming from a given child report (reports are in Browse mode)
 - child node name: selects all metrics coming from a child node (edit mode, might lead to several reports in case of expansion).
 - filter wizard: select metrics using a custom filter
 - filter manual: select metrics using a custom filter.
- 8 Use the **Match metrics using a** box to select the metric you want to customize.



Metric Customization

Allows color and shape settings to be customized on this report for each metric.

[Add Customization](#)

Match metrics using a formula result traffic

Configuration display on secondary axis curve width marker

Default 1.5 None

color

- 9 From the **Configuration** options choose whether the metric should be displayed against the main or the secondary axis, and how you want the line to be displayed.
- 10 Go to the **Legend** area to add properties to the legend and configure how they're displayed.
- 11 To add properties to the legend, click **Edit Properties** and use the Property Selection Helper to add as many properties as your need. You can use drag and drop to reorder the way properties will appear in the legend.
- 12 You can also manually add properties. Click **Switch to Input Field** and in the **Properties in Legend** box enter property names each separated by a space.



Legend

Configure which properties are displayed in the graph's legend to better identify the plotted variables.

Properties in Legend

[Edit Properties](#) [Switch to Input Field](#)

Simple: name 🗑️ ⬆️

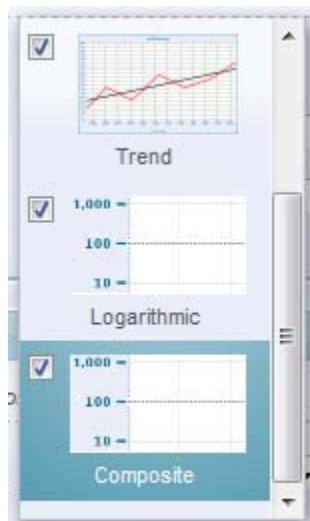
Simple: unit 🗑️ ⬆️

Legend Display automatic ?

- 13 Go to the **Thresholds** area to define thresholds. Critical and major thresholds do not appear in the graph unless you give them values. You can add as many thresholds as necessary giving them each different values and colors. If there is a second y-axis in the graph, the thresholds that you set here are applicable only to the main y-axis. Thresholds have a different meaning for Time Ratio Bar Graphs. In this mode, they defined the intervals used to compute the time ratios and the colors of the bars. For example, two thresholds actually define three intervals. The first one gathers all the values below or equal to the lowest threshold, the second one all the values above the first and below or equal to the second and the last one

all the values above the second threshold. The corresponding colors would be respectively, the default grey, the color of the lowest threshold and the color of the highest one. The unit marked next to the input box tells you how you should enter your threshold definitions.

- 14 Go to the **Settings for standard graphs** area to define how standard graphs are displayed.
- 15 From the **Legend Items** list select **display only selected items** to have only the selected indicators appear in the graph legend. For example, in a Pie Chart, the indicators in the Others section may be of no interest. As these are not selected indicators, you can hide them by selecting display only selected items.
- 16 From the **Summary Statistic** list, check the options you want to display more statistical information.



Pinpoint: Displays the minimum and maximum values.

Boxed: Displays a box in the upper left of the graph with minimum and maximum values, the average, and the 95th percentile, which is 95% of the time the value is below this amount.

Trend: Displays a superimposed trending line over the graph, which shows the prevailing direction of the metric.

Logarithmic: Plots the values on a logarithmic scale only if there is more than one metric in the graph. This applies only to simple graphs.

Composite: Displays four supplementary mini-graphs at the bottom showing the evolution of the metric over four different time periods.

The default time periods are: the last year, the last six months, the last month and the last day. These can be configured by your system administrator.

Edit External reports

The External Report Address is the URL of the page you want to be displayed in the report. You can use `${property}` to add property values to the URL.

For example, to query Bing, you can use:

`http://www.bing.com/search?q=${parttype}`

The external report uses the parameters of the report's edit settings, in this case the filter, to inject properties into the external web page.

To edit an External report

- 1 To access Edit mode, on the top menu click **Edit Mode**.
- 2 Click the report you want to edit and copy it to **My Reports**.
- 3 On the **Dashboard** click **Report Details: External report**.
- 4 Change the URL you want to display.

Edit Map reports

Map report details incorporate Table settings and Map specific setting. The **Displayed Information** area presents the same columns that are available in the Table details and defines the information that will appear on the map. See [Edit Table reports](#) for details about Table reports. When you make changes to a Map table column, your changes are reflected in Table report details, and vice-versa.

The screenshot shows the 'Report Details: Map' configuration window. It features a tabbed interface with 'Filtering & Expansion', 'Report Configuration', 'Report Details: Map', and 'Formula'. Below the tabs are buttons for 'Paste (0)', 'Attribute', 'Property', and 'Value'. The 'Map Item Configuration' section contains a table with columns: Name, Location, Color, Size, Search, and Icon. Below this table is a 'Selected Column' dropdown menu set to 'Use 'Name' column'. The 'Displayed Information' section lists three items: 'Attribute: Name', 'Property: Location', and 'Value: Code', each with a trash icon. At the bottom, there are buttons for 'All / Invert / None', 'For selected elements:', 'Copy', and 'Delete'.

When you click an icon on the map, a popup displays the information about each defined column. The selected name column is the title and the selected location column is displayed in italics. The other columns are displayed under the title. Links for browsing the report and searching for related reports are at the bottom of the popup.



To edit a map report

- 1 To access Edit mode, on the top menu click **Edit Mode**.
- 2 Click the map report you want to edit and copy the report to the **My Reports** area.
- 3 On the **Dashboard** click **Report Details: Map**.
- 4 In **Map Item Configuration**, under the **Name** tab, define the name of the node which is displayed in the popup.
 - If you want to use an attribute as the node name, choose **Create a new attribute column**, enter a column name and choose an attribute.
 - If you want to use a property as the node name, choose **Create a new property column**, enter a column name and choose a property.
 - If you want to use an existing column as the node name choose **Use 'xxx' column** where xxx is the column's name.

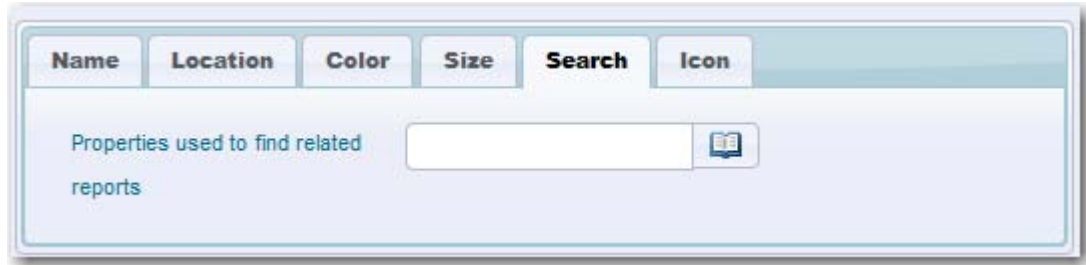
- 5 Click the **Location** tab and select the column to be used to position the node on the map. The column should contain location information such as a city name or an address.
 - If you don't want to use this feature, choose **None**.
 - If you want to use an attribute as the location, choose **Create a new attribute column**, enter a column name and choose an attribute.

- If you want to use a property as the location, choose **Create a new property column**, enter a column name and choose a property.
 - If you want to use an existing column as the location choose **Use 'xxx' column** where xxx is the column's name.
- 6 If you want to add override locations, click **Advanced Properties** and choose a secondary location column (in case the first one contains no information) or enter the location overrides. The locations entered here will have precedence over the locations in the APG data. The correct format is name=location, one entry per line.

- 7 Click the **Color** tab and select an icon color for each child node. This column must be a value column and a threshold must be set on the column's value. The defined thresholds determine the icon's color on the map. Green is OK, yellow is a major threshold, and red is a critical threshold.

- 8 Click the **Size** tab and set the size of the icon for each child node. This column can be of any type, as long as it contains a numerical value. You can use attribute, properties, or values that already exist, or create a new one. The size is calculated as a ratio between the node's value and the minimum and maximum value of the other nodes. The minimum and maximum values can be overwritten if the theoretical min and max are known, such as for a percentage. To override them, enter values in the Minimum and Maximum boxes. For example, if you are mapping two devices, for which the CurrentUtilization metric is used to determine the size. Device-1 has a CurrentUtilization of 10 percent, while Device-2 has a CurrentUtilization of 13 percent. If you leave the min and max boxes empty, the maximum value is 13 and the minimum value is 10. Therefore, Device-2 will have an icon that is the maximum size (64x64 pixels) and Device-1 will have the smallest icon possible (16x16 pixels). However, as these values are a percentage, you can set the maximum to 100 and the minimum to 0 to ensure that icons for Device-1 and Device-2 are almost the same size.

- 9 Click the **Search** tab and use the Property Selection Helper to select the properties for finding related reports. See [About the Property Selection Helper](#).



The screenshot shows a dialog box with six tabs: Name, Location, Color, Size, Search, and Icon. The 'Search' tab is selected. Below the tabs, there is a text area containing the text 'Properties used to find related reports'. To the right of this text area is a text input field and a small icon of a book with a magnifying glass.

- 10 Click the **Icon** tab and select the icon shape you want to use.



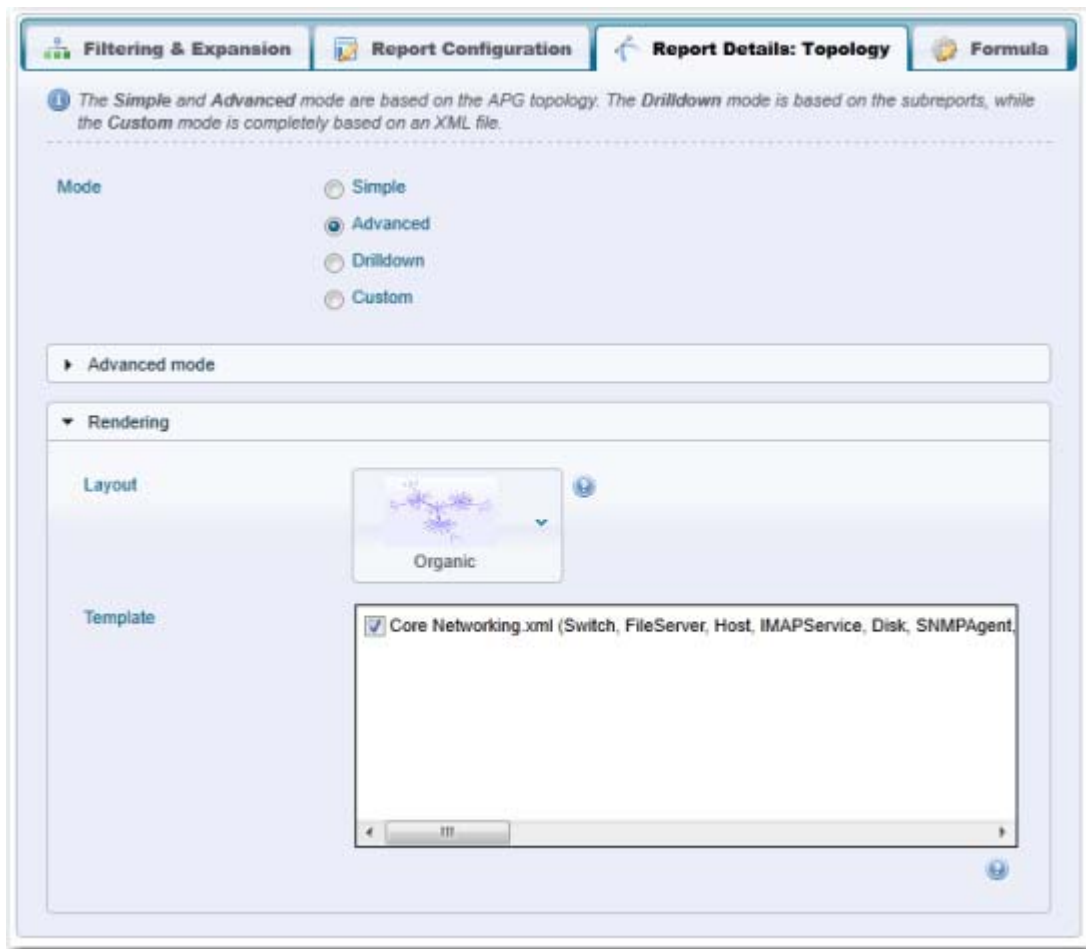
The screenshot shows the same dialog box, but now the 'Icon' tab is selected. Below the tabs, there is a text area containing the text 'Icon'. To the right of this text area is a dropdown menu with 'Circle' selected.

Edit Topology reports

A Topology report is a graphical representation of the devices on your network and how they are linked together.

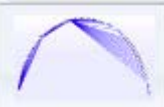
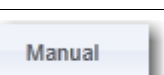
To edit a Topology report

- 1 To access Edit mode, on the top menu click **Edit Mode**.
- 2 Click the topology report you want to work with and copy the report to the **My Reports** area.
- 3 On the **Dashboard** click **Report Details: Topology**.



- 4 Select the mode. See [About Topology report modes](#) for details about the modes.

5 In the **Rendering** area select the **Layout**.

 Organic	Organic Positions the nodes based on a physics simulation of the interacting forces.
 Radial map	Radial map Positions the nodes on a tree of circles in a progressively increasing radius.
 Balloon	Balloon Positions the child nodes radially around their parents.
 Circle	Circle Positions the nodes in a circle.
 Forced-based	Force-based Creates a force-based placement of the nodes so that all the edges are of more or less equal length and there are as few crossing edges as possible.
 Hierarchical (left-right)	Hierarchical left to right Positions the nodes in a hierarchical structure from left to right.
 Hierarchical (top-bottom)	Hierarchical top to bottom Positions the nodes in a hierarchical structure from top to bottom.
 Tree map	Tree map Positions the nodes in a tree structure with the parents at the top right.
 Manual	Manual is available only in Custom mode.

- 6 The Template box displays the templates available for the report. The template determines how the nodes and edges are drawn. If you are using the [Simple](#) or [Advanced](#) modes, the id-ref of each node is the same as the class. If you are using the [Drill down](#) mode, the id-ref is the sub-report in Edit mode. For example, if you have a sub-report named Router and you expand on it, each node of the expansion will have the id-ref set to Router. For the [Custom](#) mode, see the *APG-Topology-Report-Administration-Guide*. If you select more than one template and a node is located multiple templates, only one of the nodes in the template is valid. If one template draws a router red and another template draws a router blue and you select both templates, the router will appear as either red or blue.

If you are using [Simple](#) or [Advanced](#) mode, the id-ref is displayed in the format *Source.Relation.Destination*. For example, this configuration has its edge id-ref equal to *Switch.ConnectedTo.Host*.



If you have any hidden classes, they must be in the edge ID. This example is equal to *Router.ComposedOf.Interface.Connecting.PartOf.Router*.



- 7 Save your changes and generate the report.

About Topology report modes

Simple

To use this mode there must be one topology configured in APG.



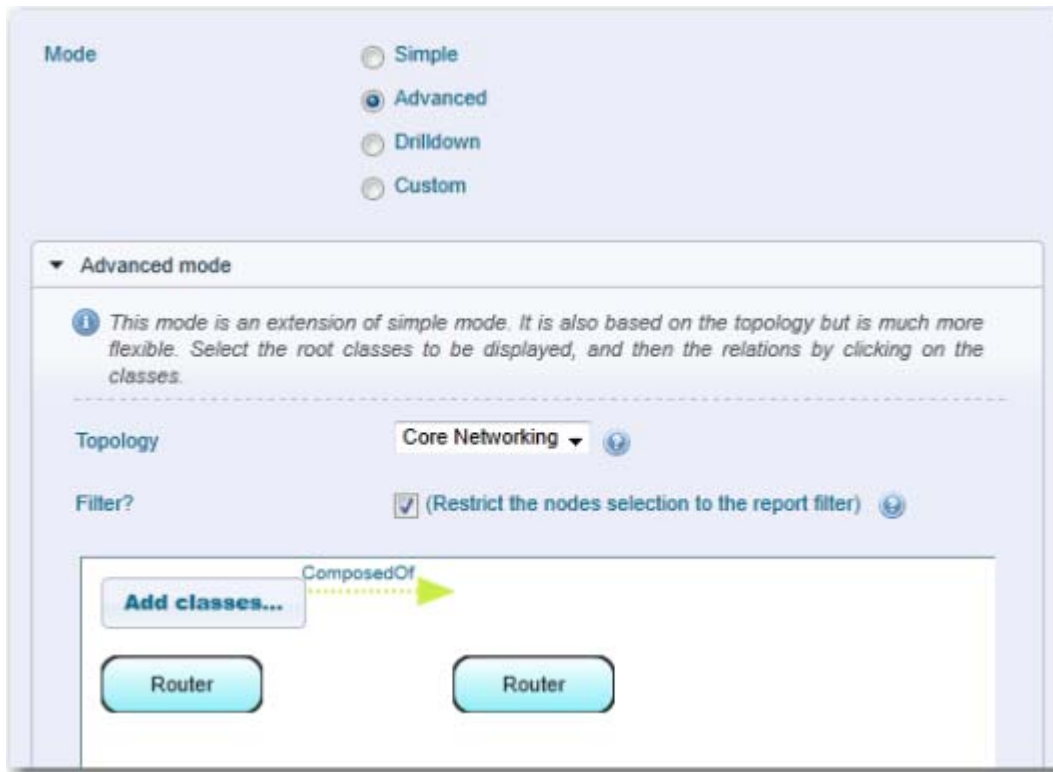
This mode displays only the instances of classes from the selected topology that meet the report filter. For example, if you select Router as the class, and the instances in the class are R1, R2 and R3 and the report filter is `devtype=="Router" & device=="R1"`, only the R1 router will be displayed on the report.

The Classes list is automatically populated from the APG topology. Select the classes you want to include in the report.

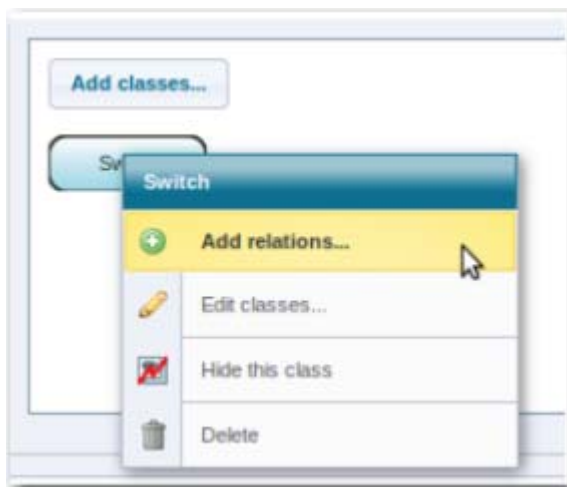
As you select the classes, the Relations list is populated. The relations represent the edges between the report nodes.

Advanced

The Filter setting shows whether the nodes will be restricted to the report filters. This does not apply to the root nodes, as they are the starting point of the graph. The root nodes are always restricted to the report filter.



For example, if you use this configuration and the report filter is `devtype=="Switch"`, if you do not select the Filter check box, the hosts are displayed in the report, even though they do not meet the report filter. All the switches, determined by the report filter, that are linked to the hosts in the topology are displayed.



After you add the classes, click a class and click **Add relations** to create relations.

You can click **Hide this class** to hide a class in a graph.



This example displays linked routers. The interface is hidden because in the topology the interfaces are linked together and not the routers, so the resulting graph shows only the routers. Because the interfaces are hidden, the report can still show metrics for the interfaces.

Drill down

Drill down mode renders a report based on the sub-report of the current one. If the current report has three sub-reports, then three nodes will be displayed. It is the sub-report of the Browse mode that the node will be based on, and each node will be clickable, so you can drill down to the sub-reports. For drawing the nodes, a template is needed that contains the images references. If no template is specified or if the template doesn't contains references to the sub-report, the sub-reports icon is used. Drill down mode displays reports that are one level below the Topology report, so no edges are displayed.

Custom

The topology custom mode report is configured in XML files. The location of the XML file must be in the topomap directory of the WebApps-Resources module. For example: <APG>/Custom/WebApps-Resources/Default/topomap. See the *APG-Topology-Report-Administration-Guide* for more information.

Edit Overlay reports

Overlay reports define additional layers added to a graph report where events are plotted. The events that appear in the graph are defined in a table report, and you can perform further filtering in the overlay settings.

The overlay functions like a mixed report in that it displays the child graph report and the child table report on the same page.

To create an overlay, you add an Overlay report node to the tree, configure it, then configure a graph report as its child, and a child table report, which you configure to list the events you want to appear in the graph.

The screenshot shows the 'Report Details: Overlays' configuration window. At the top, there are tabs: 'Filtering & Expansion', 'Report Configuration', 'Report Details: Overlays' (selected), and 'Formula'. A green button 'Add an Overlay' is in the top right. Below the tabs, a tree view shows 'VMWare' and 'IF-W4N-PC-RTR1/1 [Gi0/0]'. A message states: 'An overlay defines a zone in the graph on which events will be drawn.' The configuration fields are: 'Display Title' (IF-W4N-PC-RTR1/1 [Gi0/0]), 'Selection Filter' (instanceDisplayName starts with IF-W4N-PC-RTR1/1 [Gi0/0]), 'Boundaries' (from 17% to 84%), 'Number of Lines' (1), 'Main Color' (#ffffff), 'Display Level' (bottom), 'Display Mode' (area), and 'Event Limit' (99). At the bottom, there are three expandable sections: 'Tooltip Information', 'Momentary Events', and 'Durable Events'.

To edit an Overlay report

- 1 To access Edit mode, on the top menu click **Edit Mode**.
- 2 Click the report you want to use and copy the report to the **My Reports** area.
- 3 On the **Dashboard** click **Report Details: Overlays > Add an Overlay**.
- 4 In the **Display Title** box enter a descriptive title for the overlay. The title does not appear in the reports but appears in the title of the overlay configuration box.
- 5 In the **Selection Filter** box you can filter events out of the ones selected in the child table to display them in this overlay. This filter only needs to contain additional properties as most of the filtering process is done by the table.

- 6 Use the **Boundaries** settings to define the zone in the graph where the events will appear. Boundaries are expressed as percentages where 0 is the bottom of the graph and 100 is the top. Use negative numbers to position the event zone below the graph. Use the slider for adjustments. Your selection is displayed along with the overlay title at the top of its configuration box.
- 7 In the **Number of Lines** box enter the number of lines used to express the events in the graph. You can use one line per 10% of height. The result is alternating lines distributed vertically plotting the events.
- 8 In the **Main Color** box type the value for the color you want to use for the overlay or use the color picker. The main overlay color is used as background for the whole zone. Set it to white (#ffffff) to disable it.
- 9 In the **Display Level** box set the layer where events are displayed. Events and timeseries are rendered on top of one another so with this setting you can determine how they will be arranged. To draw overlays under the graph lines, use a negative value. To order the different overlays, you can use numbers for the respective display levels where they are arranged from the lowest value to the highest. You can also use top or bottom as shortcuts for min and max. If multiple overlays overlap, you can choose the order in which they appear, as they are drawn from the lowest value to the highest.
- 10 From the **Display Mode** list, select the way events are rendered. Depending on your selection, settings for events with duration are toggled to display those applicable to lines or areas.
- 11 In the **Event Limit** box set the maximum number of events displayed in the overlay. Events are displayed using the table order, and after the limit is reached, the rest of the events are not displayed.
- 12 Click the **Tooltip information** area to set what is displayed when you mouse over an event in the graph.

▼ Tooltip Information

Select the properties that will be displayed in any event tooltip.

Tooltip Title:

Additional Properties

Simple:	lastNotifiedAsDate		
Simple:	clearedAsDate		
Simple:	classDisplayName		
Simple:	instanceDisplayName		
Simple:	elementInstance		

- 13 In the **Tooltip Title** box enter or select the name of the property whose value will be used as the tooltip title.
- 14 Using the **Additional Properties** you can enter properties whose values will be displayed in the tooltips:
 - Click **Edit Properties** to use the Property Selection Helper to select one or more properties. You can change the order of items in the list to reorder their order in the tooltip. See [About the Property Selection Helper](#).
 - Click **Switch to Input Field** to manually enter properties. As you type, a list of matching values appears. To enter multiple properties, leave a space between properties.
- 15 Click the **Momentary events** area to control how momentary events are displayed.

▼ Momentary Events

ⓘ Momentary events have no duration, and thus the same start and end times. They will be represented as points.

Events Color 

Point Size 

Marker Type 

- 16 In the **Events Color** box enter an HTML color code or use the color picker to define the look of momentary events.
- 17 From the **Point Size** list select the size of the points for momentary events.
- 18 From the **Marker Type** list select the type of marker for momentary events.
- 19 Click the **Durable Events** area to control how events with duration are displayed. Events with duration have a start and an end time. The settings available correspond to whether you selected line or area for the Display Mode.

▼ Durable Events

ⓘ Durable events have a duration, and may even be infinite. They will be displayed as lines or areas.

Events Color 

Line Width 

Line Style 

Start Marker 

End Marker 

- **Line Width:** Select how wide the lines are for events with duration.
- **Line Style:** Select the line style for events with duration.
- **Start Marker:** Select the marker for the start of events with duration.
- **End Marker:** Select the end marker for events with duration.

Pre-Generated Reports

A pre-generated report is a report that can only be created by an administrator. The report will allow the administrator to store reports for select users at a pre-determined time.

The screenshot shows the 'Pre Generation' tab in a software interface. At the top, there are tabs for 'Filtering & Expansion', 'Report Configuration', 'Report Details: Table', 'Formula', and 'Pre Generation'. Below the tabs, there is a 'Report Display Preference' section with a dropdown menu set to 'Use Real Time Values'. A 'New Pre-Generated Report' button is located in the top right corner. The main area is titled 'new report' and contains two sections: 'Recipients' and 'Details'. In the 'Recipients' section, there is a dropdown menu for 'Schedule this report for' set to 'All Users'. The 'Details' section contains a message: 'The following section defines the scheduling itself.' Below this message are fields for 'Name', 'Active' (checked), 'Schedule' (set to 'Every day' at '00:00'), and 'Report Link' (a dropdown menu showing 'All / Global Reports / Situations to Watch / Stress Summary / IT Silo/'). There are 'None' and 'All' buttons below the 'Report Link' dropdown. At the bottom of the 'Details' section, there is a 'Send confirmation email' checkbox.

To create a pre-generated report:

- 1 In edit mode, choose the **Pre-Generation** tab,
- 2 Click **New Pre-Generated Report** and edit the Recipients and Details fields,
- 3 In **Schedule this report for** drop down:
 - Select all users, which as the name implies, will generate the report for all users,
 - Select specific roles, which will generate the report for all users with the selected roles.
- 4 In the **Name** box, select a descriptive name for this report,
- 5 Check whether this report should be active (generated on schedule) or not (never auto-generated),
- 6 Use the **Schedule** options to select the time(s) at which to generate these reports,
- 7 Select the instances of this report to generate. For instance, if a report node has been copied and places somewhere else in the tree, this menu will show allow both of those nodes to be generated,
- 8 Check to send an e-mail about the report generation to the selected recipient.

Create a report with the Report Wizard

You can use the Report Wizard to quickly create a report. This is a helpful tool for creating a report on the fly, for example if you are troubleshooting an issue. If you want to save a report created here, you must save to My Reports.

To use the Report Wizard

- 1 In Browse mode, on the **Tools** menu click **Report Wizard**.

- 2 From the **View Type** list select a view type. The available views are defined by the system's administrator.
- 3 In the **Available Elements** area select elements to filter on. You can click the filter icon and start typing the name of an element to filter the list. Continue to choose elements until you define all the elements you want included.
- 4 If you can select more metrics to add to the report, the Add Metrics button becomes available. You can click it and repeat steps 3 and 4 until you have all the metrics you want to add to your report.
- 5 Click **Run** to generate the report.
- 6 If you want to save the report to reuse it, click **Save in My Reports**.

Example of creating a report with the Report Wizard

This example shows how to create a report that shows the CPU utilization for a number of hosts.

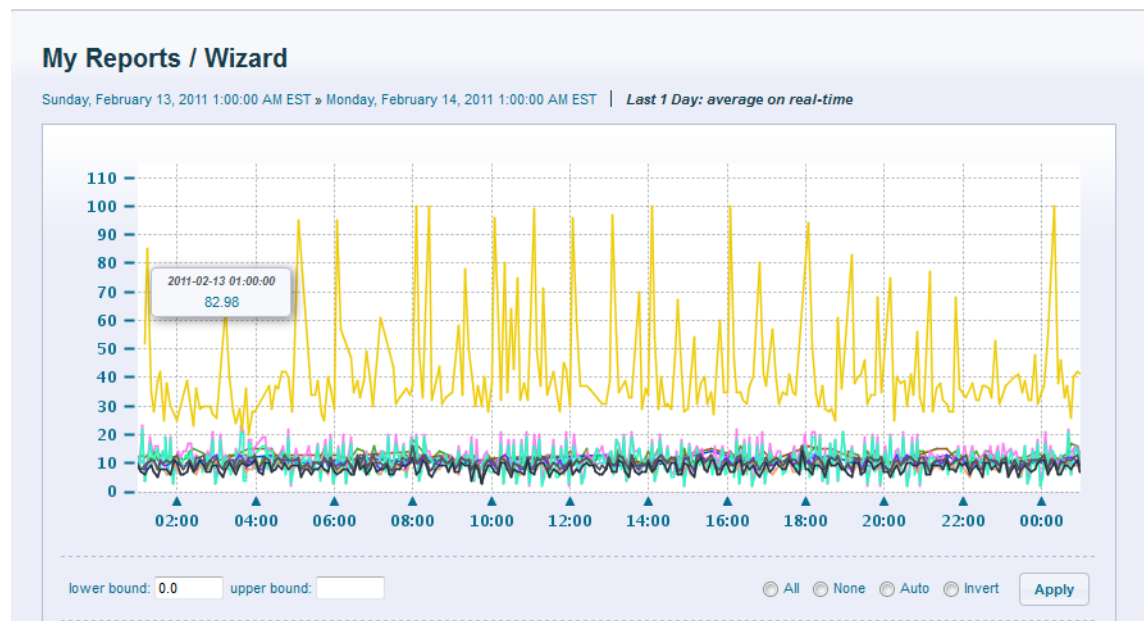
- 1 In Browse mode, on the **Tools** menu click **Report Wizard**.
- 2 Choose these options:
 - Device Types: Host
 - Hostname: select some hosts
 - Component Types: Processor
 - Components: select all
 - Available Metrics: CurrentUtilization

The screenshot shows the 'Report Wizard' interface with the following selections:

- Device Types:** Host (1 selected element)
- Hostname:** 10.128.10.2, 10.128.10.3, 10.128.10.4 (3 selected elements)
- Component Types:** Processor (1 selected element)
- Components:** PSR-10.128.10.2/768, PSR-10.128.10.2/769, PSR-10.128.10.3/768, PSR-10.128.10.3/769, PSR-10.128.10.4/768, PSR-10.128.10.4/769 (6 selected elements)
- Available Metrics:** CurrentUtilization (1 selected element)

Buttons at the bottom right include 'Add Metrics' and 'Run'.

- 3 Click **Run**. You can save the report to My Reports to rerun it.



Arrange reports

When more than one report appear on a page, you can arrange how they are positioned. Save your changes and the placement is saved for subsequent sessions for all the users of the report. You can also add links from My Reports or My View in the report tree to individual report elements. These links are also saved for subsequent sessions.

If you drag or resize a report that has other reports that are configured using the same expansion, all the reports that have that expansion will resize or move.

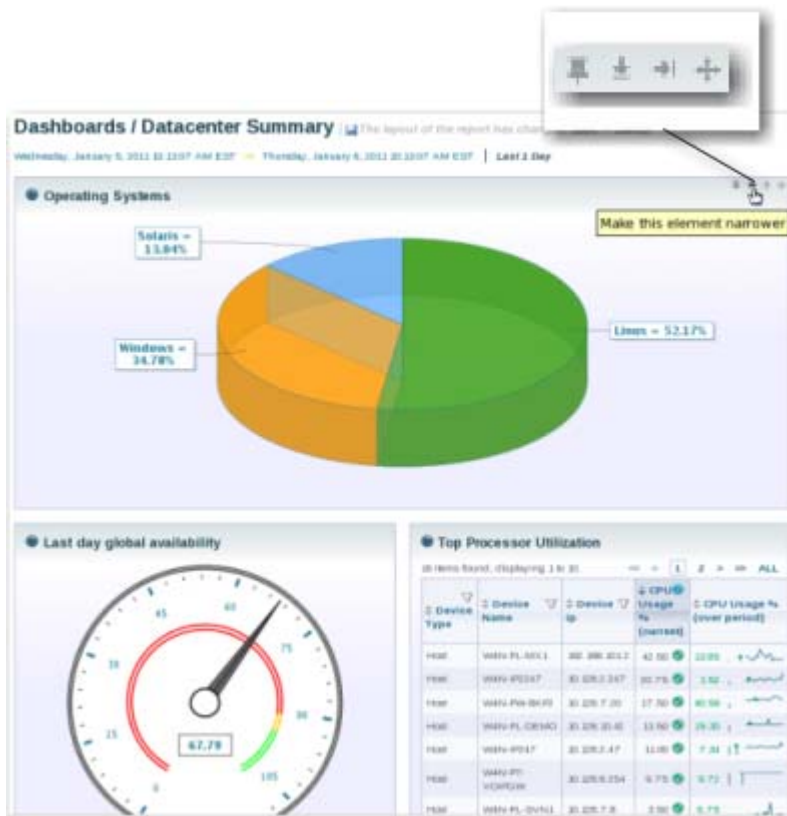
To arrange reports

- 1 Mouse over the upper right corner of a report to display the tools.



- Click the pin button to add a link to this report from My View in the report tree. You can click My View to display all the reports added using the pin. After you add a report to My View you can click the x to remove the report from My View.
- Click the down arrow to make the element larger. It expands vertically, moving over the reports to the adjacent column. Repeatedly pressing the arrow makes the element larger. You can click the up arrow to make the element shorter or restore it to its original size.
- Click the right arrow to expand the element to the right. You can click the left arrow to make the element narrower.
- To drag and drop an element into a new position, click and hold the cross-shaped cursor, and move the element to a new position. The other elements resize around the new element.

- 2 After you make your changes click **Save**.



Administering the web portal

Topics

- [About APG administration](#)
 - [Edit logon settings](#)
 - [Edit default display settings](#)
 - [Edit file customization settings](#)
 - [Management of Database Metrics](#)
 - [Edit duration aliases](#)
 - [Edit scheduled reports](#)
 - [Edit stored reports](#)
 - [Edit user sessions](#)
 - [View running reports](#)
 - [About ReportPacks](#)
 - [Upload a ReportPack](#)
 - [Create a new ReportPack](#)
 - [Export a ReportPack](#)
 - [Add a template to a ReportPack](#)
-

About APG administration

If you are an APG administrator with Global Administrator privileges you can set up the APG environment from the Administration page. You can edit these settings:

- Web Portal access, look and feel, language, default time zone, and duration aliases,
- users, profiles and roles,
- ReportPacks, upload new ReportPacks and edit their templates.

From the Administration page you can also access the available APG modules. To access the Administration page on the right of the top menu click Administration. What appears in the Administration page depends on what modules you have installed.

Administration

APG Frontend Management

APG Portal

- Scheduled Reports
- Stored Reports
- User Sessions
- Running Reports

ReportPacks

List / Import ReportPacks

ReportPacks are pre-defined reports dedicated to a specific technology or vendor, including built-in metrics, formulas and analytics.

User Management

- Users
- Profiles
- Roles

A user contains personal information (login, password, email), is part of one profile (which defines their global properties), and can have zero or more roles (which defines their rights and report accesses).

Modules

Frontend

- Formula Editor
- Outage Editor
- Real Time Grapher
- Management of Database Metrics
- Topology Management

Collecting

- MIB Browser
- SNMP Collector
- Device Discovery
- Transaction Collector

Miscellaneous

- Alerting
- IP SLA Configuration

Centralized Management

- Physical View
- Logical View
- Packages
- Licenses
- Audit Logs
- Central Configuration Repository
- SolutionPacks
- Data Enrichment
- Scheduled Tasks

Edit logon settings

Use these properties to:

- control whether auto complete is available for logon,
- put the portal into maintenance mode,
- enter a text message that will be displayed on the logon page.

The changes you make are active on the next APG logon.

To edit the global properties

- 1 On the top right of the web portal click **Administration > APG Portal**.

The screenshot shows a web application interface for 'APG Portal' administration. At the top, there are four tabs: 'Frontend Status', 'Default Display', 'File Customization', and 'Duration Aliases'. The 'Frontend Status' tab is selected. Below the tabs, a message states 'General portal status can be modified here:'. There are three main settings: 'Login page autocomplete' with a dropdown menu set to 'Default browser behaviour', 'In Maintenance?' with an unchecked checkbox, and 'Welcome Message' with a large text input area. Each setting has a small blue help icon to its right.

- 2 From the **Login page auto complete** list, select whether to disable auto complete for username and password at login, or just for the password.
- 3 Select the **In Maintenance** check box if you want to put the Web Portal into maintenance state, which disables logon for all non-admin users until you clear this setting.
- 4 In the **Welcome Message** text box, enter a welcome message all users will see on the Logon page.
- 5 Click the **Save** button to save your changes.

Edit default display settings

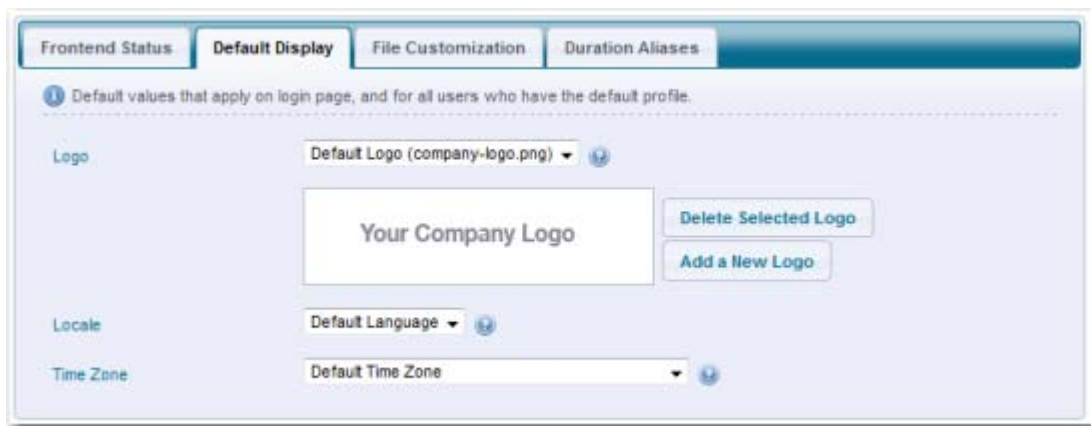
Use these settings to:

- select, add or delete a logo,
- choose the default language for APG,
- set the time zone.

These settings have a one-to-one relationship with the customizable settings for the default profile. If you change a setting in one location, it is automatically updated in the other. All these settings are defaults, and can be adjusted per user profile. See [Managing users, profiles and roles](#).

To adjust the default display settings

- 1 On the top right of the web portal click **Administration > APG Portal > Default Display**.



- 2 From the **Logo** list, select an image to use as the APG logo. The logo is displayed at the top of the Login page and above the report tree in the user interface and Administration page.
- 3 To add a new logo click **Add a New Logo**, choose a file and click **Ok**.
The default dimensions of the logo in APG are 232 pixels wide by 63 pixels high. For best results use this dimension ratio for the images you upload. The new image is used as the new logo and automatically inserted into the Logo field.
- 4 To delete a logo select it in the **Logo** box and click **Delete Selected Logo**.
- 5 From the **Locale** list select the default language for the Web Portal. Default Language uses the language of the server. Language settings affect:
 - APG Web Portal
 - User interface
 - Administration page
 - APG Modules accessible from the Frontend.
- 6 From the **Time Zone** list select the default time zone for APG.
- 7 Click the **Save** button to save your changes.

Edit file customization settings

You can create a CSS style sheet to change the web portal look and feel. You can load a JavaScript file to create custom overrides of interface elements such as buttons and menus.

Use these settings to:

- select a CSS file to apply to the APG interface,
- select a JavaScript file to run each time a page is loaded,
- upload and edit CSS and JavaScript files.

To change the file customization settings

- 1 On the top right of the web portal click **Administration > APG Portal > File Customization**.



- 2 To use a CSS or JavaScript file, from the **CSS File** or **JavaScript File** list select a file.
- 3 To edit an existing file, select it from the list, click **Download**, edit the file and then upload it.
- 4 To upload a new file click the **Upload** button and browse to the location of the file.
- 5 Click the **Save** button to save your changes.

Management of Database Metrics

The management of database metrics page allows you to select and delete metrics from the system. To select metrics for deletion, simply use the filter as you would during report creation. You can select which properties the query will return to help you confirm that these are the metrics you want to delete.

This module currently allows metrics deletion. Please note that the changes will not be immediately visible. The Backend service and Tomcat service need some time to refresh the data. If the property flat table is used, the deleted metrics will still be visible in the reports until the property flat table is refreshed.

Metric Selection

Filter

Everything

*

Maximum results

100

Show last timestamp for all results

☐

Properties to show

name device part

Query

If the metrics corresponding to the specified filter cannot all be displayed, they will all be selected by default and the **Delete** button will delete all, even those that are not displayed.

Metric Selection

Filter

name starts with if

name='if%%'

Maximum results

10

Show last timestamp for all results

☒

Properties to show

name device part

Query

Too many results: 796. A sample of 10 is displayed. To select less metrics, please refine the filter.

	name	device	part	Last timestamp
☒	ifInNUcastPkts	dev-VPLSC0E9.lss.emc.com	FastEthernet0/0	Apr.16./2013 9:32:59 AM

Unless you are absolutely sure, we recommend that you refine your filter or increase the **Maximum results** number so that all the metrics are displayed. You can then select each one individually or use the global selectors at the end of the display.

☐	ifOutErrors	lwqvp001.lss.emc.com	FastEthernet0/3/5	Apr 16, 2013 9:36:59 AM
☐	ifInDiscards	lwqvp001.lss.emc.com	FastEthernet0/3/5	Apr 16, 2013 9:36:59 AM
☐	ifOutDiscards	lwqvp001.lss.emc.com	FastEthernet0/3/5	Apr 16, 2013 9:36:59 AM

All

None

Invert

Special Considerations

If you have added databases to your system, the frontend must be configured to enable the deletion of metrics. APG.xml must have one management resource for each timeseries database.

For example, if we have two timeseries databases APG-DB1 and APG-DB2 defined with the resource links below, then two management resources are needed. As in the example below, the names after mgmt/ must match the resource link name (after jdbc/ and excluding :{...} if present).

```
<ResourceLink name="jdbc/APG-DB1:{ cachegrp=DB }" global="jdbc/APG-DB1" type="javax.sql.DataSource" />
<ResourceLink name="jdbc/APG-DB2:{ cachegrp=DB }" global="jdbc/APG-DB2" type="javax.sql.DataSource" />

<!-- management resource -->
<Resource name="mgmt/APG-DB1" factory="org.apache.naming.factory.BeanFactory"
    type="com.watch4net.apg.v2.modules.admin.BackendCommunication" backendHost="host.of.backend.of.db1"
    backendTelnetInterfacePort="2001" backendSocketInterfacePort="2000" />

<!-- management resource -->
<Resource name="mgmt/APG-DB2" factory="org.apache.naming.factory.BeanFactory"
    type="com.watch4net.apg.v2.modules.admin.BackendCommunication" backendHost="host.of.backend.of.db2"
    backendTelnetInterfacePort="2001" backendSocketInterfacePort="2000" />
```

The filter in the management of database metrics page will never use data from the property store even if it is enabled. The property store must be refreshed after metric deletion to see changes in the reports.

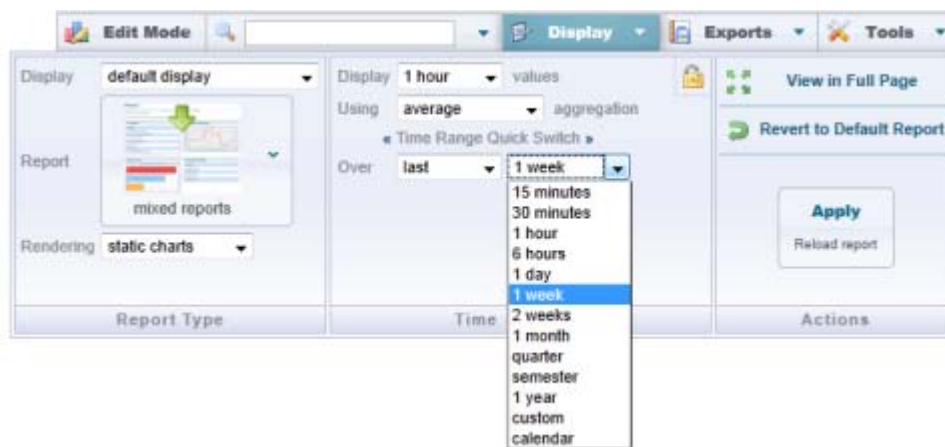
The filter in the management of database metrics page will use data from the *data_property_flat* table if it is present in the database. Deleted metrics will continue to appear in the management of database metrics filter until the property flat table is refreshed.

Edit duration aliases

Duration aliases are aliases for amounts of time. For example you can represent, three months with the term quarter or trimester, and six months can be a semester. Duration values are shown in report titles.

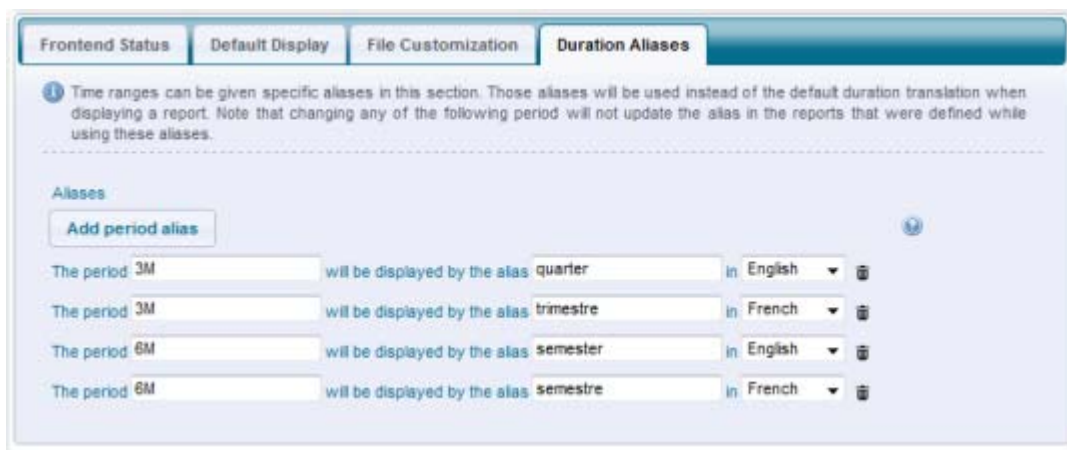


Report browsers can select a duration from the Display settings. Any aliases you create are added to the default durations.



To edit a duration alias

- 1 On the top right of the web portal click **Administration > APG Portal > Duration Alias**.



- 2 Edit the existing values, or click Add period alias and add a new value.

Edit scheduled reports

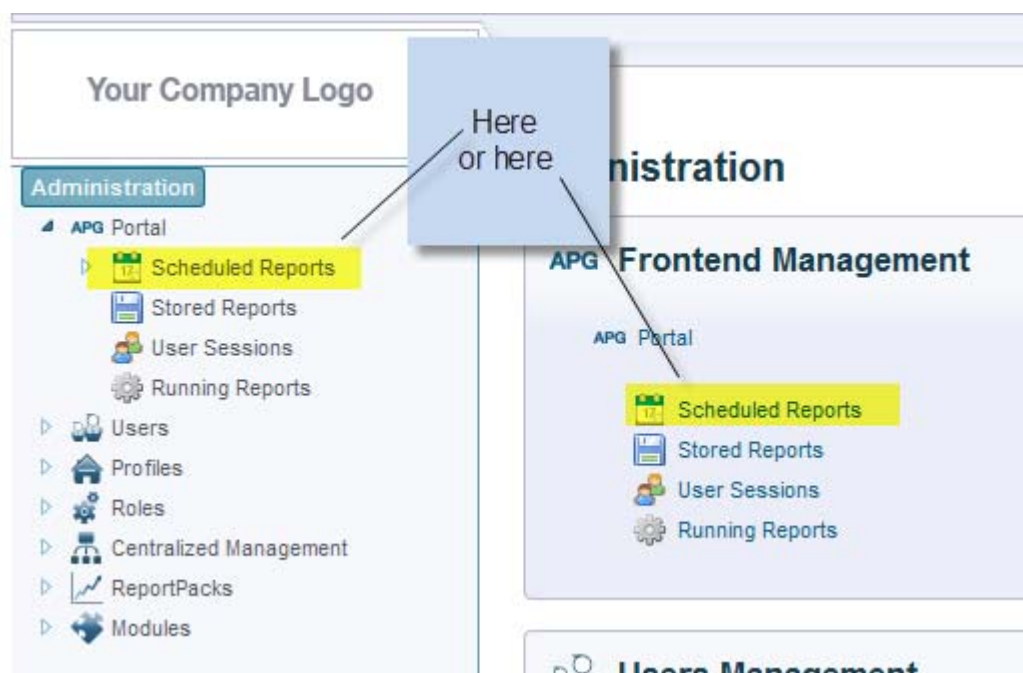
You can access all the scheduled reports, both those scheduled by users, as well as the pre-generated reports.

Use these view to:

- View scheduled reports. To see how users schedule reports, see [Schedule reports](#),
- View pre-generated reports. To see how admins create pre-generated reports, see [Pre-Generated Reports](#),
- Edit the details of a scheduled or pre-generated report,
- Enable or disable scheduled or pre-generated reports,
- See all running and queued reports,
- Run reports, or cancel running or queued reports,
- See all invalid reports,
- Remove scheduled or pre-generated reports.

To access scheduled reports

- 1 On the right of the web portal click **Administration > Scheduled Reports**.



The scheduled Reports page lists user scheduled reports and pre-generated reports, including reports that are currently running and queued to run, as well as invalid reports. You can click a user in the list to see which reports they have scheduled, and click a report to interact with it.

Users Scheduled Reports

Lists some information about the reports that have been scheduled for periodic generation per user. Additional information is available by clicking on a specific user.

User	Report Count	Average Daily Time	Total Generation Time	Generation Count
admin	1	0 secs	0 secs	0

Pre Generated Reports

This section displays the reports that have been pre-generated. Additional information is available by clicking on a specific report.

Name	Last Duration	Average Daily Time	Total Generation Time	Generation Count	Status
Distribution By Model	12 secs	12 secs	8 mins 12 secs	41	✓
File system	13 secs	13 secs	18 mins 25 secs	85	✓
Memory	13 secs	12 secs	17 mins	85	✓
Monthly	13 secs	12 secs	17 mins 24 secs	87	✓
Operational	12 secs	12 secs	17 mins	85	✓
Stress	6 secs	6 secs	8 mins 24 secs	84	✓
Transactions	10 secs	10 secs	14 mins 10 secs	85	✓
View by IOS	13 secs	15 secs	1 min	4	✓

Running Scheduled Reports

Below are all the scheduled reports that are either running or waiting for a slot.

User	Scheduled Report	Expected Execution Duration	Status
No scheduled report running or queued...			

Invalid Scheduled Reports

Below are all the scheduled reports that are not valid.

To edit a user scheduled report

- Click on the selected user.
- Click on the selected report.
 - Click **Edit** to edit the report,
 - Click **Enable** to enable the scheduled generation of the report (when disabled),
 - Click **Disable** to disable its generation (when enabled). It will not run until it is re-enabled,
 - Click **Launch Now** to run the report immediately,
 - Click **Abort Now** to cancel the report (if it is currently running or queued),
 - Click **Delete** to remove the report from the scheduled list.

File system	13 secs	18 mins 51 secs	87	✓
Memory	12 secs	17 mins 12 secs	86	⌚
Monthly	12 secs	17 mins 36 secs	88	🔥
Operatic	12 secs	17 mins 24 secs	87	✓
Stress	6 secs	8 mins 30 secs	85	⌚
Transac	10 secs	14 mins 30 secs	87	✓

File system

- Edit
- Disable
- Launch now
- Delete

Edit stored reports

You can use this view to access all the reports that are stored.

Use these view to:

- list stored reports,
- see stored reports characteristics like report generation time,
- delete stored reports.

To access stored reports

- 1 On the right of the web portal click **Administration > Stored Reports**.

To delete a stored report

- 1 Click the square of the first column to select it.
- 2 Click the Delete button.

Stored Reports | Administration

List and delete Stored Reports

396 results.

	Owner	Report	Generated
☐	-	Network Summary / Details by Device Type	Jun 5, 2012 9:15:11 PM
☐	-	Detailed Reports / Operational Dashboard (By IT Silos)	Jun 7, 2012 10:56:23 AM
☐	-	Service Level Reports / Monthly SLAs (Won vs. Violated)	Jun 7, 2012 12:52:09 PM
☐	-	Detailed Reports / Operational Dashboard (By IT Silos)	Jun 7, 2012 12:52:23 PM
☐	-	Detailed Reports / Operational Dashboard (By IT Silos)	Jun 7, 2012 12:52:23 PM

Edit user sessions

The User Sessions page lists all users currently logged into this instance of APG.

From here you can:

- view who has an active session,
- log users off, except for administrators.

To access user sessions

- 1 On the right of the web portal click **Administration > User Sessions**.

To forcibly close a user's session

- 1 Click the user
- 2 Select the Kick Out option.

User Sessions | Administration

This section lists the currently logged-in users. Each of them may be forcefully logged out of the system.

A contextual menu is available through left click; please note that it is not possible to logout admin users, whose login appears impersonating another one, his real login will appear inside parenthesis.

Login	First Name	Last Name	Logged in on	Last access on	Client IP	Client ho
 admin			Apr 27, 2012 3:18:38 PM	Apr 27, 2012 3:18:43 PM	10.128.2.33	10.128.2.33
 executive			Apr 27, 2012 3:17:56 PM	Apr 27, 2012 3:17:58 PM	10.128.2.33	10.128.2.33
 admin			Apr 27, 2012 2:25:40 PM	Apr 27, 2012 2:26:19 PM	10.128.2.33	10.128.2.33

executive



Kick Out

View running reports

This page lists all reports that are currently being generated by APG.

From here you can:

- view reports that are running,
- cancel the generation of a given report.

To access the running reports

- 1 On the top right of the web portal click **Administration > Running Reports**.

To cancel the generation of a report

- 1 Click the Abort button for the report you want to cancel.

[Home >> Running Reports](#)

Currently Running Reports | Administration

Lists the reports that are being generated now. They might be aborted, depending on the report type and hierarchy. For instance, as tables use a late fill mechanism, they are very unlikely to appear here, while a report containing operations on multiple children is very likely to be successfully aborted.

Owner	Report	Start	Status	Total Duration	Abort
admin	All	30-Apr-2012 2:13:37 PM	Generating... 13 secs	13 secs	
admin	All / My Reports / Global Inventory / Montreal	30-Apr-2012 2:13:48 PM	Generating... 3 secs	3 secs	

About ReportPacks

ReportPacks are pre-defined reports that are dedicated to a specific technology or vendor. ReportPacks include built-in metrics, formulas and analytics. Using a ReportPack saves you customization time and effort.

To access APG ReportPacks

On the right of the web portal click **Administration > ReportPacks**.

From here you can:

- [Upload a ReportPack](#),
- [Create a new ReportPack](#),
- [Export a ReportPack](#),
- [Add a template to a ReportPack](#).

Upload a ReportPack

To upload a ReportPack

- 1 Do either of these:
 - from the Administration page, in the **ReportPacks** area click **List/Import ReportPacks**,
 - or in the tree click **ReportPacks**.

The APG ReportPacks page appears listing all the APG ReportPacks, their descriptions, and how many templates there are for each ReportPack.
- 2 Click the **Upload a ReportPack** button.
- 3 Click **Browse**, locate the ReportPack file (.arp), then click **Ok**.
The ReportPack's name, version, description, template and formulas are imported into APG and appear in the ReportPack list.



Create a new ReportPack

To create a new ReportPack

- 1 Do either of these:
 - from the Administration page, in the **ReportPacks** area click **List/Import ReportPacks** and click the **New ReportPack** button,
 - or in the tree click **ReportPacks > New ReportPack**.

The APG ReportPacks page appears listing all the APG ReportPacks, their descriptions, and how many templates there are for each ReportPack.
 - 2 In the **Name** box enter a descriptive name for the ReportPack.
 - 3 In the **Version** box enter a version number for the ReportPack.
 - 4 In the **Description** box enter a description for the ReportPack.
 - 5 Click the **Save** button to save your changes.
- The new ReportPack is added to the ReportPacks list and the tree, where you can edit it or add templates to it. To add a template see [Add a template to a ReportPack](#).

The screenshot displays the 'APG ReportPacks' Administration page. At the top, a header reads 'APG ReportPacks | Administration'. Below this, a dashed box contains the text: 'Complete ReportPacks (in asp format) can be imported through the following form. The list below contains the ReportPacks that have been installed or created.' Below this text is a button labeled 'Upload a ReportPack'.

Below the upload section, a message states: 'Click on any line to view details for a specific ReportPack'. To the right of this message is a button labeled 'New ReportPack' with a green plus icon. Below the message is a table with two columns: 'Name' and 'Number of'. The table lists four ReportPacks: 'Default ReportPack', 'ReportPack for APG Health', 'ReportPack for EMC Smarts Events', and 'ReportPack for Smarts Health'.

The 'ReportPack Creation | Administration' form is overlaid on the bottom right. It has a title bar 'ReportPack Information' and a message: 'This information is for administration purposes only. It will not be displayed in the user interface.' The form contains three input fields: 'Name', 'Version', and 'Description'.

Export a ReportPack

To export a ReportPack

- 1 Do either of these:
 - On the Administration page, in the **ReportPacks** area click **List/Import ReportPacks** and click the ReportPack you want to export,
 - or in the tree click **ReportPacks** and the ReportPack you want to export.
- 2 Click the **Export** button.
 The ReportPack ARP file, which is an archive of all the ReportPacks details and templates, is automatically downloaded by your browser. To upload the ReportPack and use it in another APG instance see [Upload a ReportPack](#).

ReportPack Information

This information is for administration purposes only; it will not be displayed in the user interface.

Name

Version

Description

The default ReportPack, included with any APG install.

Delete
remove this ReportPack

Export
get the ARP archive

Save
apply modifications

This list contains all the templates that have been created for this ReportPack.

New Template

Template Name	Description
Device Summary	A summarized overview of all the devices on the network.
Global Reports	This node contain a set of general reports.
ReportPacks	This node helps you to hook ReportPacks.
Transactions / Applications	This set of reports is designed to help monitoring the performance of transactions and applications

Add a template to a ReportPack

To add a new template

- 1 Do either of these:
 - On the Administration page, in the **ReportPacks** area click **List/Import ReportPacks**, select the ReportPack you want to add a template to and click the **New Template** button,
 - or in the tree click **ReportPacks**, and under the ReportPack you want to add a template to click **New Template**.

Template Information

Information other than the tree template is for administration purposes only. It will not be displayed in the user interface.

Template Name

Version

Description

Hook Nodes ?

Tree Template ?

- 2 Enter a name, version, and description for the template.
- 3 To add this template to other nodes in the tree, click **Hook to Another Node** and from the list select where you want to put the template. You can do this once or many times, depending on where you want to add the template.
- 4 To upload a new tree for this template, beside **Tree Template** click Browse and navigate to the APG Tree XML file you want to use.
The new will overwrite the current one.
- 5 Click the **Save** button to save your changes.

Managing users, profiles and roles

Topics

- [About APG users](#)
 - [Edit your user settings](#)
 - [View users](#)
 - [Add, edit or delete users](#)
 - [Test user settings](#)
 - [About profiles](#)
 - [View profiles](#)
 - [Create, edit, and assign users to profiles](#)
 - [About roles](#)
 - [View roles](#)
 - [Create, edit and assign users to roles](#)
 - [About role restrictions](#)
 - [Create parent-child relationships](#)
 - [Assign limited administration rights](#)
-

About APG users

You can assign users rights that control what they can see and use in APG. This includes access to reports and modules, editing capability, and the ability to search or use the Report Wizard.

There are three categories of users in APG:

- Report browsers have read-only access,
- Report editors have read-write access,
- Administrators have global administration rights and can administer APG.

Not all users have to fit into these categories, and can have read access to some reports, write access for others, and access to some software features.

You can control the settings for APG users that determine the behavior of APG for them and what they can access.

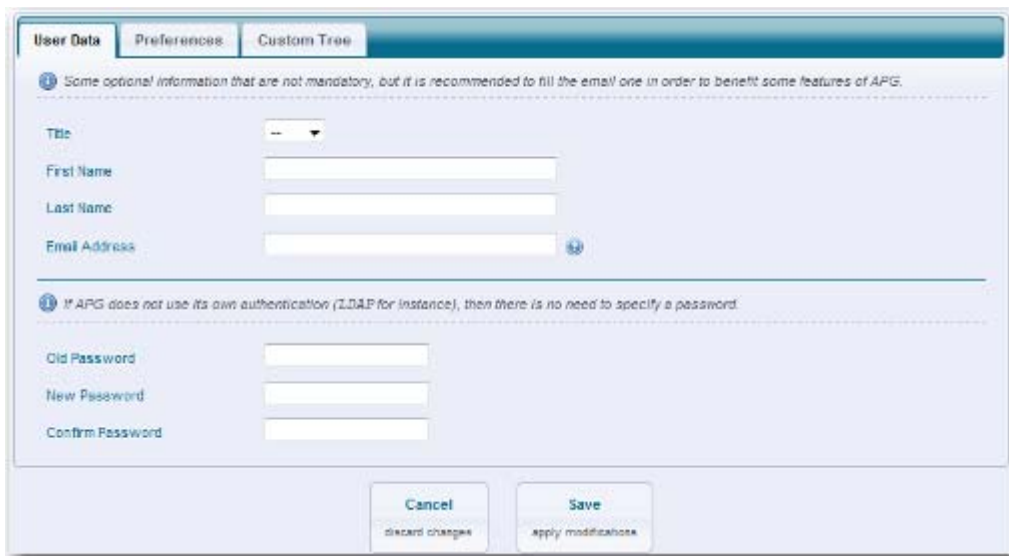
From the Users settings, users are defined with information about them, their status, profile, roles and potentially a master filter to apply to restrict access for their reports to particular APG metrics, as well as whether custom reports are accessible to them.

Edit your user settings

User settings have the default values that are set up by an administrator. You can access your user settings to modify the settings according to your preferences. If you can't access your settings, contact your APG administrator.

To edit your user settings

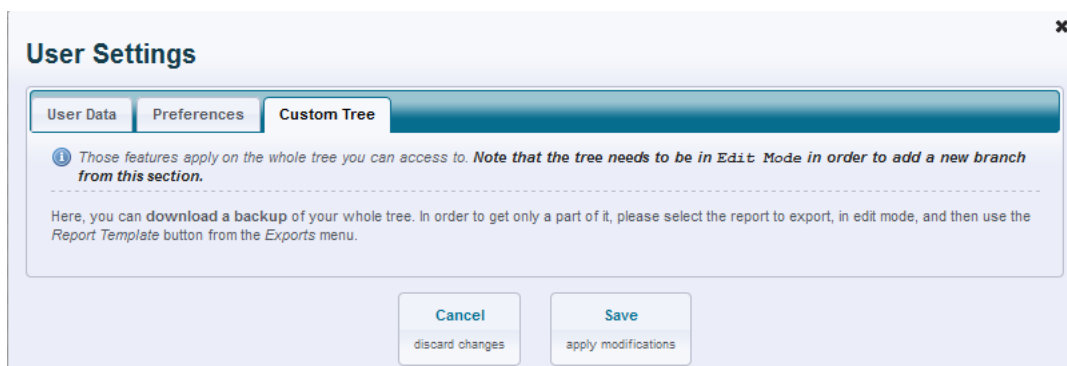
- 1 To access your settings, on the top menu click 
- 2 The User Data page contains information such as your title, name and email. The email address is used to send you information from APG such as when a stored report is completed. You can change your password which is recommended when you first log on to APG.



- 3 On the Preferences page you can modify the elements of your environment
 - From the **Language** list select the language you want to use for the Web Portal.
 - From the **Root Display** list select the display mode to use for the root node.
 - From the **Root Report** list select the type of report to use for the root node. See [About the report types](#).
 - In the **Auto Refresh Rate** box enter a value or do not enter a value for no auto refresh.
 - From the **Background Reports** list select Show the Question or No Background Reports. When a report takes a long time to generate, APG can ask whether you want to continue waiting or launch the report in the background and store it. Select **Show the Question** if you want to have the option to decide.
 - From the **Stored Reports** list select whether you want to receive an email when a generated report is stored.



- 4 On the Custom Tree page you can add a branch to the tree or download a backup of your tree. These restrictions apply:
- You must be in Edit more before you access Settings to import a branch. You must select a report node in the tree before you access the setting to import a branch, since the branch will be imported under the selected node.
 - Before you import a branch, it is strongly advised that you back up the current tree by clicking the **Download a Backup** link. Either click the link and save to your computer, or right-click and choose Save Link As to specify a name and location.



View users

The APG Users page lists APG users, their status, profile, and whether their profile is enabled.

To view users

- 1 On the top right of the web portal click **Administration > User Management > Users**
or
in the tree click **Users**.
The APG Users page lists all the APG users.

APG Users | Administration

Here are displayed all the users you can manage, either for the whole APG portal, either for a specific profile if one has been selected on the left.

A contextual menu (left click) is available on each user in the table.

◀ User Login	◀ Title	◀ First Name	◀ Last Name	◀ User Status	◀ Email Address	◀ Profile
 admin				admin		Default P
 executive				user		Default P
 operator				user		Default P
 user				user		Default P

Add, edit or delete users

You can set up or edit these properties for each user:

- the initial logon credentials for a new user,
- a user profile including name, title and email address,
- the profile and role assigned to the user,
- metrics the user can view,
- custom report access.

To add or edit users

1 Do one of these:

- On the top right of the web portal click **Administration > User Management > Users**.
On the APG Users page click **New User**
- or in the tree expand **Users** and click **New User**.

- 2 On the **User Data** page enter the user login and password credentials. The new user will initially use these to log on. Users can change their password after logging into APG with these credentials, in their own settings dialog. The user login and passwords are case-sensitive. Passwords do not need to be set if APG is configured to use an external authentication system like LDAP.
- 3 Enter a title, first and last name, and email address of the user. The email address is used to send notifications of stored reports. These settings can also be entered by the user in their own settings dialog, which overrides anything set here.
- 4 Click the **User Status** tab and set the user's rights and access.

The screenshot displays the 'User Status' configuration page. At the top, there are three tabs: 'User Data', 'User Status' (selected), and 'Other Options'. A blue information icon and a note are present: 'The user status defines his rights and accesses in the whole application. Role assignment is an important step. Please note that a disabled user cannot login anymore.' Below this, the 'User Status' is set to 'Normal User' with a dropdown arrow, and a 'Disabled?' checkbox is unchecked. The 'Profile' is set to 'Default Profile' with a dropdown arrow. The 'User Roles' section shows two lists: 'Other Roles' and 'Assigned Roles'. The 'Other Roles' list contains: Executives View, Full Control Users, Operators View, Read-Only & Real-Time Users, Read-Only Users, Read-Write Users, and Users View. Between the lists are four buttons: 'Add Role', 'Remove Role', 'Add All', and 'Remove All'. The 'Assigned Roles' list is currently empty.

- 5 From the **User Status** list, select either **Normal User** or **Global Administrator**. Global Administrators have full rights to APG and all its components, cannot be disabled, and have no restrictions on templates. Normal Users is the default status for other users.
- 6 If you want to disable the user so they cannot log on, select the **Disabled** check box. Users will not be able to log on until they are re-enabled. You can also toggle users to be enabled or disabled by clicking the user in the tree.
- 7 From the **Profile** list select the profile to apply to the new user. Profiles determine language, time zone, dynamic graph usage, and the logo used for the Web Portal. See [About profiles](#) and [Create, edit, and assign users to profiles](#).
- 8 From **User Roles**, add or remove assigned roles as necessary, using the **Add Role** and **Remove Role** buttons. Roles determine access and restrictions for the user. See [About roles](#) and [Create, edit and assign users to roles](#).
- 9 Click the **Other Options** tab, and set the reports and metrics the user has access to.

User Data **User Status** **Other Options**

Those options regroup critical settings - such as the master filter - as well as other optional ones...

This filter is the combined filter from all the roles the user is in using an OR, combined with the user one using an AND. It is dynamically updated from the selected roles and the user master filter and thus cannot be edited.

Master Filter Everything

Custom Reports not allowed

- 10 For the **Master Filter**, enter a filter that restricts the metrics the user can see. This filter is applied to the root node and cannot be modified by the user themselves. Filters can also be set for roles. Any role filters are combined with an OR, and the user filter, with an AND. See [Create, edit and assign users to roles](#) for how to create filters for roles and [About the Filter Configuration Wizard](#) for how to create filters.
- 11 From the **Custom Reports** list, select whether custom reports are accessible for the user. The user custom tree is a specific per-user branch of the tree nested under My Reports, which can be modified by the user.
- 12 Click the **Save** button to save your changes.

To delete a user

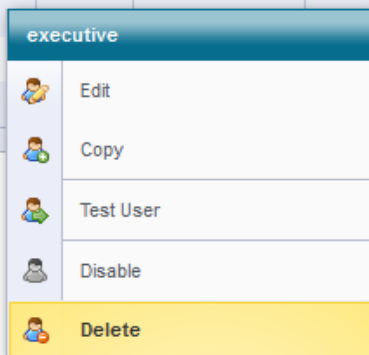
- 1 On the top right of the web portal click **Administration > User Management > Users**
or
in the tree click **Users**.

APG Users | Administration

Here are displayed all the users you can manage, either for the whole APG portal, either for a specific profile if one has been selected on the left.

A contextual menu (left click) is available on each user in the table.

◀ User Login	◀ Title	◀ First Name	◀ Last Name	◀ User Status	◀ Email Address	◀ Profile
admin				admin		Default Pro
executive				user		Default Pro
operator				user		Default Pro
user				user		Default Pro



- 2 Click the user you want to delete and choose **Delete**.

Test user settings

You can test user settings to check how their settings are applied, as if you were logging in as this user.

To test a user's settings

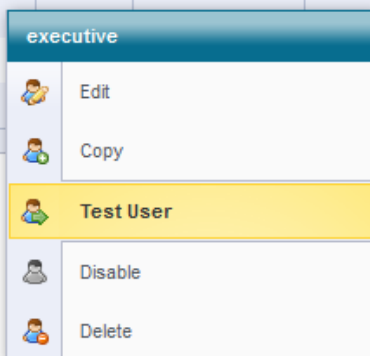
- 1 On the top right of the web portal click **Administration > User Management > Users**
or
in the tree click **Users**.

APG Users | Administration

Here are displayed all the users you can manage, either for the whole APG portal, either for a specific profile if one has on the left.

A contextual menu (left click) is available on each user in the table.

◀ User Login	◀ Title	◀ First Name	◀ Last Name	◀ User Status	◀ Email Address	◀ Profile
 admin				admin		Default Pri
 executive				user		Default Pri
 operator				user		Default Pri
 user				user		Default Pri



- 2 Click the user you want to test and choose **Test User**.
You are launched into the APG User Interface, interacting with the Web Portal as if you had logged in as the user being tested.
- 3 Browse reports and edit reports, and perform any other regular APG functions. Any changes you make in APG, such as editing report settings, are saved with their new settings.
- 4 Simply click Return to Self to end user testing.



About profiles

APG profiles contain the settings for all the users who are assigned to the same profile. You can use different profiles for different companies who access the same APG instance, or for different departments of a large company.

Profiles include language, time zone, dynamic graphs and logo usage. By assigning profiles you assign specific user rights. Users can edit some of these settings themselves in their Settings. Any settings that users set override those set for their profile.

You can:

- [View profiles](#) to get an at-a-glance view of all the profiles set up on your system
- [Create, edit, and assign users to profiles](#) to set up or make changes to profiles.

View profiles

The APG Profiles page gives you an at-a-glance view of the profiles on your system, their descriptions, and how many users currently use each profile.

To view users

- 1 On the top right of the web portal click **Administration > User Management > Profiles**
or
in the tree click **Profiles**.

The APG Profiles page lists the profiles on your system.



APG Profiles | Administration

Those are the profiles that have been defined for APG, along with the number of users that use them. Admin users are the only ones that can create or modify profiles before they can be assigned to users.

Click on a line to access the corresponding profile information.

[New Profile](#)

Name	Description	User Count
Default Profile		4
Admin		0
Operator		0
Report editor		0
Report reader		0

Create, edit, and assign users to profiles

You can set up or edit these properties for each profile:

- name and description of the profile,
- language,
- time zone,
- logo,
- users assigned to the profile.

To create, edit, or assign users to profiles

- 1 On the top right of the web portal click **Administration > User Management > Profiles** or in the tree expand **Profiles** and click **New Profile**.
- 2 In the **Main Properties** page, enter a name and description.

Profile Creation | Administration

This section allows the creation and modification of profiles for any APG user.

Main Properties | Customizable Settings | Users Repartition

i Those properties are only here so that people who assign profiles will know what the profiles represent. It will help them decide whether the profile fits the user or not.

Name

Description

- 3 Click the **Customizable Settings** tab and set the language, time zone and logo. See [Edit default display settings](#) for information about these settings.

Main Properties | **Customizable Settings** | Users Repartition

i These settings will be applied for all users who have that profile.

Locale

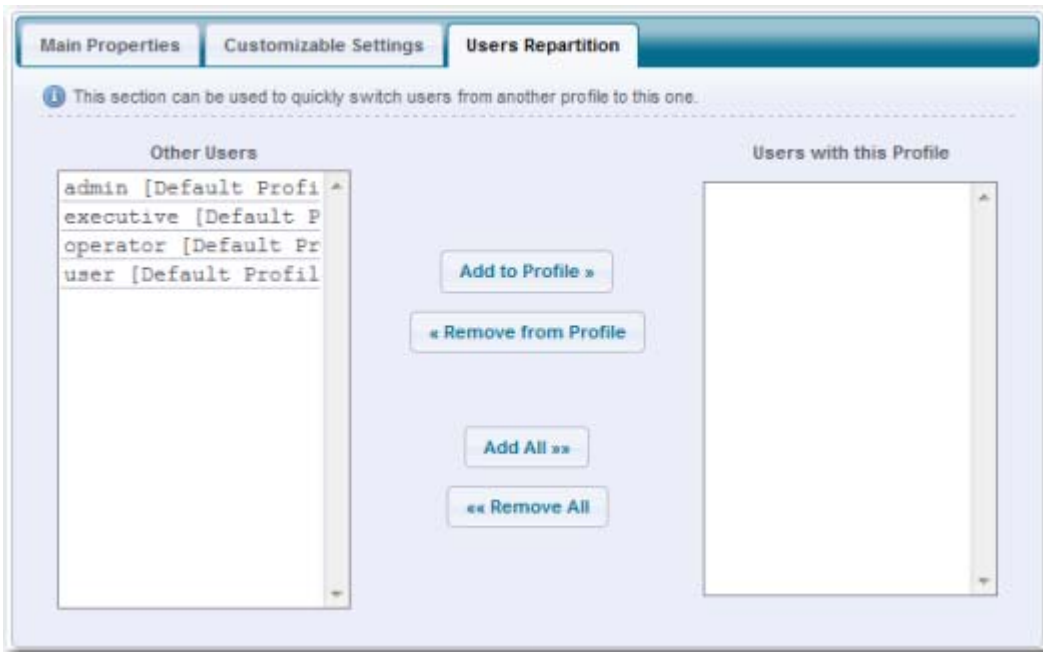
Time Zone

Logo to Display

[Delete Selected Logo](#)

[Add a New Logo](#)

- 4 Click the **Users Repartition** tab, and assign roles to this profile.



- 5 Click the **Save** button to save your changes.

About roles

Roles determine the restrictions that apply to users and what they have access to, such as templates and reports. See [About role restrictions](#) for a complete list of what access you can control in roles.

View roles

The APG Roles page gives you an at-a-glance view of the roles on your system, their descriptions, and how many users currently use each profile.

To view the roles on your system

- 1 On the top right of the web portal click **Administration > User Management > Roles**
or
in the tree click **Roles**.

APG Roles | Administration

The roles define the rights and restrictions that will apply on users. They also define which templates are available to them, which makes them a great tool to manage accesses.

Standard Mode

Click on a line to access the corresponding role information.

[+ New Role](#)

Name	Description	User Count
Executives View		1
Full Control Users	This role allows its users to access almost any module and tool in APG. It also gives them read-write access to all available tree templates.	0
Operators View		1
Read-Only & Real-Time Grapher Users	This role allows its users to access all tree templates in read-only mode. It also gives access to the Real-Time Grapher tool.	0
Read-Only Users	This role allows its users to access all tree templates in read-only mode.	0
Read-Write Users	This role allows its users to access all tree templates and modify them. It also gives access to the Real-Time Grapher tool.	0
Users View		1

Create, edit and assign users to roles

You can set up or edit these properties for each role:

- name and description of the role,
- filters applied,
- disable the role to do maintenance for a group of users,
- users assigned to the role,
- ReportPacks, templates, and modules this role can access.

To create a role

- 1 On the top right of the web portal click **Administration > User Management > Roles > New Role** or in the tree expand **Roles** and click **New Role**.
- 2 Enter a name and description for the role.

Role Creation | Administration

This section allows the creation and modification of roles for any APG user.

The screenshot shows the 'Role Creation' form under the 'Administration' section. The form has a header with tabs: 'Main Properties', 'Users Repartition', 'Template Access', 'Module Access', and 'Restrictions'. The 'Main Properties' tab is selected. Below the tabs, there is an information icon and text: 'Name and description are only here for information purposes. The filter and disabled attributes are the only ones that will modify the role users behavior.' The form contains the following fields:

- Name:** A text input field.
- Description:** A large text area.
- Master Filter:** A dropdown menu currently showing 'Everything' with a help icon.
- Disabled?:** A checkbox that is currently unchecked, with a help icon.

- 3 For the **Master Filter**, you can enter a filter to restrict the metrics that users with this role are able to see. Filters can also be set for users, in which case, first role filters are combined with an OR, and then combined with the user filter, with an AND. See [Add, edit or delete users](#) for how to create filters and set user filters.
- 4 To disable users who use this role, select the **Disabled** check box. All of the users of this role or its child roles will not be able to log on to APG until this check box is cleared. This setting is useful when doing maintenance for a group of users.
- 5 Click the **Save** button to save your changes.

To edit or assign users to roles

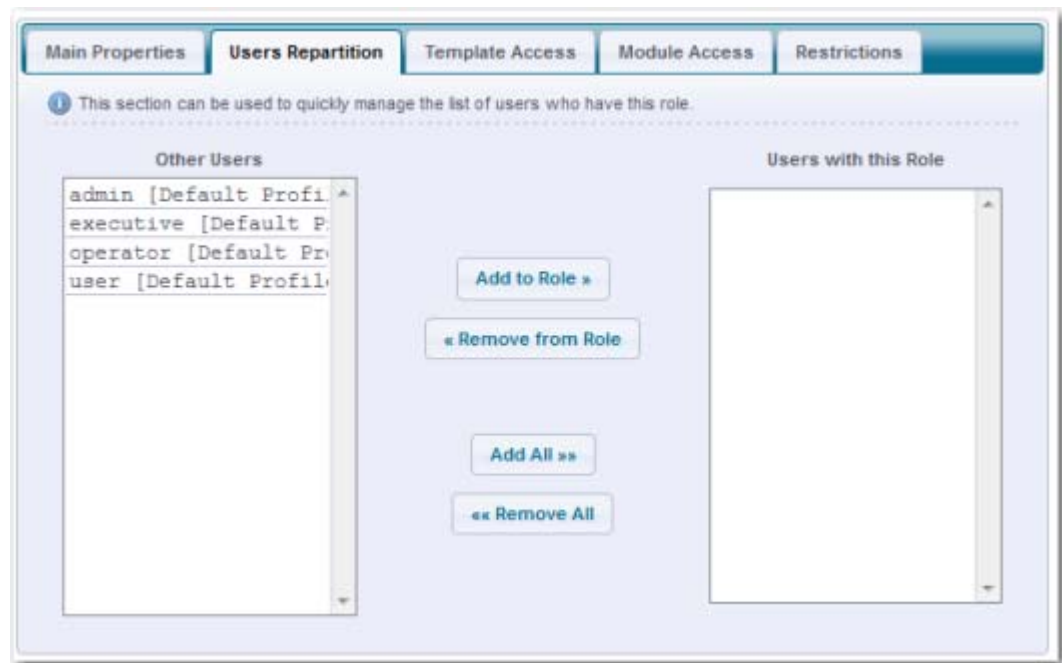
- 1 On the top right of the web portal click **Administration > User Management > Roles** or in the tree click **Roles**.
- 2 Click the role you want to modify.

APG Roles Administration

The roles define the rights and restrictions that will apply on users. They also define which templates are available to them, which makes them a great tool to manage accesses.

Standard Mode		
Click on a line to access the corresponding role information.		
New Role		
◆ Name	◆ Description	◆ User Count
Executives View		1
Full Control Users	This role allows its users to access almost any module and tool in APG. It also gives them read-write access to all available tree templates.	1
Operators View		1
Read-Only & Real-Time Grapher Users	This role allows its users to access all tree templates in read-only mode. It also gives access to the Real-Time Grapher tool.	0
Read-Only Users	This role allows its users to access all tree templates in read-only mode.	0
Read-Write Users	This role allows its users to access all tree templates and modify them. It also gives access to the Real-Time Grapher tool.	0
Users View		1

- 3 Click the **Users Repartition** tab and add or remove users from this role.



- 4 Click the **Template Access** tab and set the templates this role has access to.

This defines which kind of access this role will provide. Basically, it is a bottom to top behavior. It means that the first right to be looked for is the template one; then if none has been defined, it will be the ReportPack one. And finally, as last resort, if no other has been defined, the global access will be used.

Default Access for All Templates: Unspecified

Per ReportPack Access

RP: Default ReportPack	(No Access)	RP: ReportPack for APG Health	(No Access)
Template: Device Summary	(No Access)	Template: APG Health	(No Access)
Template: Global Reports	(No Access)		
Template: ReportPacks	(No Access)		
Template: Transactions / Applications	(No Access)		
RP: ReportPack for EMC Smarts Events	(No Access)	RP: ReportPack for Smarts Health	(No Access)
Template: ReportPack for EMC ² Smarts Events	(No Access)	Template: ReportPack for Smarts Health	(No Access)

- 5 For ReportPacks, **Default Access for All Templates**, select Unspecified, No Access, Read-Only, or Read and Write. The setting you choose is applied to all ReportPacks and templates that have not been individually edited. Unspecified reverts unedited ReportPacks and templates to no access.
- 6 Click the **Module Accesses** tab, and for each module select whether users with this profile can access it.

APG modules are listed here. For each one, access has to be specifically granted before any user can use them. Inherited access means the value has not been enforced, and thus the default one will be applied.

Alerting	The web interface that manages real-time alerts on values collected by APG.	No
Formula Editor	Provides a graphical interface for formula edition and dynamic reloading.	No
Outage Editor	This module allows management of dynamic time filter settings.	No
Real Time Grapher	A grapher which can query the devices directly to get real-time performance data.	No
MIB Browser	A complete MIB browsing suite that loads and parses MIBs, provides SNMP commands and dynamic polling.	No
SNMP Collector	A graphical interface, binded with the MIB browser, that enables quick SNMP collection configuration.	No
Management of APG Metrics	This module currently allows metrics deletion. Please note that the changes will not be immediately visible. The APG Backend service and Tomcat need some time to refresh the data. If the property <code>flat</code> table is used, the deleted metrics will still be visible in the reports until the property <code>flat</code> table is refreshed.	No
Device Discovery	The interface used to discover (SNMP) devices and distribute them among APG (SNMP) collectors.	No
IP SLA Configuration	A complete IP SLA Configuration suite.	No

- 7 Click the **Restrictions** tab and for each type of restriction enter a value, or select Inherit or Enforce: Yes or No. The inherit value will be Yes or No depending on the parent role setting or the global default. See [About role restrictions](#) for a description of each type of restriction.

About role restrictions

You can assign role restrictions when you [Create, edit and assign users to roles](#).

Most of these restrictions are applied to report generation, and to some other APG features. Inherited access means the value has not been enforced, and the default will be applied. Some values cannot be increased above a certain threshold.

The Inherit settings are No by default if there are no parent roles. If there are parent roles, they indicate whether the parent role is set to Yes or No, which can then be inherited by the current role. For more information see [Create parent-child relationships](#).

Restriction Type	Description
Concurrent Reports	Restricts the number of reports a user can launch simultaneously. This restriction is not surpassed unless the reports are system intensive and the value is set very low.
Report Elements	Restricts the number of elements a single report can contain. The default value is 50 and we recommend you do not exceed this restriction unless you are viewing a complex combination of reports, which are likely better filtered.
Time Drift	This prevents the report from showing up if it reports data that is before or after the maximum time displacement defined from the current time. The value is expressed in seconds. 24 hours of historical data is 86400, and one week is 604800.
Time Range over Period Ratio	The maximum number of points allowed in a graph. The restriction title refers to how the points are calculated, which is the numbers of seconds of the reporting period divided by the aggregate range.
Number of Metrics	Restricts the number of metrics in a report. This is used to check the number of variables selected in a chart, such as the number of lines. If it is a mixed report this applies to each of its individual reports, not the entire mixed report.
Aggregation Range Limit	Restricts the maximum time-range allowed when using aggregations. If the default value of 550 days expressed in seconds is used, then on a Pie chart, the aggregated data will not span more than 550 days. This restriction is applicable only to charts that aggregate values over a time period into a single value, such as Pie and Gauge charts.
Number of Flows	Restricts the number of traffic flows that can be reported on in a single report. Aggregated flows count as a single flow.
Scheduling	Set this to no to let users schedule reports for automatic generation and possible distribution at the set times. Set this to yes to prevent users from scheduling reports.
Scheduling remote transfer	Set this to no to allow generated reports to be transferred to remote locations using one of the available methods (ssh, ftp, ...).
Search Engine	Set this to no to let users use the Search to query APG to find reports. Set this to yes to prevent Search from being displayed in the UI.
Advanced Search	Set this to no to let users use Advanced Search to find reports. This mode uses a standard APG filter, but requires knowledge of your infrastructure, which can be beyond simple report browser abilities. Set this to yes to prevent from being displayed in the UI. Users need access to Search to be able to access Advanced Search.

Restriction Type	Description
Display Menu	Set this to no to let users access the display menu from which they can apply real-time transformations to the report for the current session. Set this to yes to prevent users from accessing the display menu.
Report Type	Set this to no to let users change the report type in the display menu. Set this to yes to prevent users from doing so, in which case the report type list is not displayed.
Time Selection	Set this to no to let users change the report time in the display menu. Set this to yes to prevent users from doing so, in which case the time controls are not displayed.
Settings Modification	Set this to no to let users the adjust their personal settings. Settings are based on defaults set up by the administrator for each user. Set this to yes to prevent users from changing their settings.
Table Filtering	Set this to no to let users apply filters to the columns of tables. This can help to limit the data set displayed, which is helpful for large tables. Set this to yes to prevent table filtering.
Stored Reports	Set the number of Stored reports a user can save.
Stored Report Versions	Set how many versions of a Stored report a user can save.
Wizard	Set this to no to let users refine reports with the Wizard/Refiner, or yes to prevent this functionality.
Alerting write access	Set this to yes to prevent users from creating or modifying of alert definitions.
Edit Mode button display	Set this to yes to hide the Edit Mode.

Create parent-child relationships

You can create parent-child relationships between roles by selecting a role to be the parent of another role. Children inherit the rights and restrictions of the parent role.

From here you can:

- reset all roles to the defaults,
- create parent-child relationships between roles.

To use Advanced mode

- 1 In the tree click **Roles**, and on the top right of the **APG Roles** page click the **Mode** tab to toggle between Standard and Advanced mode.

The screenshot shows the 'APG Roles' administration interface. The top section is titled 'APG Roles | Administration' and contains a description: 'The roles define the rights and restrictions that will apply on users. They also define which templates are available to them, which makes them a great tool to manage accesses.' Below this is a 'Standard Mode' tab and a 'New Role' button. A callout box points to these tabs with the text: 'Click these tabs to toggle between Standard and Advanced mode'.

The bottom section shows the 'Advanced Mode' view. It includes a 'New Role' button and a table of roles. The table has columns for Name, Description, and User Count.

Name	Description	User Count
Executives View		1
Full Control Users	This role allows its users to access almost any module and tool in APG. It also gives them read-write access to all available tree templates.	0
Operators View		1
Read-Only & Real-Time Grapher Users	This role allows its users to access all tree templates in read-only mode. It also gives access to the Real-Time Grapher tool.	0
Read-Only Users	This role allows its users to access all tree templates in read-only mode.	0
Read-Write Users	This role allows its users to access all tree templates and modify them. It also gives access to the Real-Time Grapher tool.	0
Users View		1

- 2 If you want to revert the APG roles to their defaults, click the **revert roles to factory defaults** link. All your configured roles will be lost so use this carefully.

- 3 To create parent-child relationships, click the role you want to work with.

Role Modification: Read-Only & Real-Time Grapher Users | Administration

This section allows the creation and modification of roles for any APG user.

Main Properties | Users Repartition | Template Access | Module Access

Roles and Users Management | Restrictions

i Name and description are only here for information purposes. The filter and disabled attributes are the only ones that will modify the role users behavior.

Name: Read-Only & Real-Time Grapher Users

Description: This role allows its users to access all tree templates in read-only mode. It also gives access to the Real-Time Grapher tool.

Master Filter: Everything

Parent Role: no parent role

Disabled? ☐

- 4 From the **Parent Role** list, select a role to be the parent of this role. Children inherit any rights or restrictions that are defined for the parent role.
- 5 Click the **Save** button to save your changes.

Assign limited administration rights

You can assign users rights that control what they can see and use in APG. You can give limited administration rights to users so that they can administer roles and users. When these users access the Administration area, only the settings they have control over appear.

To assign limited administration rights

- 1 In the tree expand **Roles** and click the role you want to work with and click the **Roles and Users Management** tab. This tab is only visible in advanced mode.

Name	Role Description	Roles	Users
Executives View		☐	☐
Full Control Users	This role allows its users to access almost any module and tool in APG. It also gives them read-write access to all available tree templates.	☐	☐
Operators View		☐	☐
Read-Only & Real-Time Grapher Users	This role allows its users to access all tree templates in read-only mode. It also gives access to the Real-Time Grapher tool.	☐	☐
Read-Only Users	This role allows its users to access all tree templates in read-only mode.	☐	☐
Read-Write Users	This role allows its users to access all tree templates and modify them. It also gives access to the Real-Time Grapher tool.	☐	☐
Users View		☐	☐

- 2 Select the **Roles** check boxes to allow the users of the current role to edit the settings of the role and its child roles.
- 3 Select the **Users** check box to allow the users of the current role to edit the settings of all the users who use that role and users its child roles.
- 4 Click **Save** to save your changes.

APG Reference

Topics

- [How APG processes data](#)
 - [About event data](#)
 - [About APG modules](#)
 - [Access APG modules](#)
 - [Filter syntax reference](#)
 - [Predicates](#)
 - [Operators](#)
 - [URL syntax](#)
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 - [Report settings](#)
 - [Graph display preferences](#)
 - [Time management](#)
 - [Advanced time management](#)
 - [Query and variable selection](#)
 - [Auto-login](#)
-

How APG processes data

The data available to the APG Web Portal is gathered, collected and filtered by backend APG processing components, and then fed into the databases that the Web Portal accesses. Report editors and advanced users benefit from knowing about the backend processes, to better understand the data available in the filters, property fields, helper dialogs, and formulas of the frontend.

There are two main divisions of data: timeseries raw data related to metrics of performance and event data, which, because of its discrete nature, is treated differently.

Refer to the *APG Backend Admin Guide* and the administration guides for your modules for configuration procedures.

About event data

Although the APG Web Portal mostly uses performance data, which is raw timeseries data such as CPU utilization, events can also appear in reports. You can easily create reports with event data, but unlike timeseries data, events have these properties:

- Events are treated as things that happen at a specific point in time. Timeseries data is treated as a set of performance data over a defined period.
- Events plot only a single value in a graph, whereas timeseries can plot several related variables.
- Events appear in specialized reports, specifically event overlays.
- Events have discrete timestamps if they are momentary events, or multiple time-related values, for example indicating start and end times, for events with a duration. The value used for the timestamp is set by an administrator in an event mapping file.
- Events can have properties that are different from one another but can be organized with event mapping files that indicate what an event property in the database is called in the Web Portal. Each mapping type corresponds to a tab in the Property Selection Helper, where you can select properties. See [About the Property Selection Helper](#).
- Event mapping files are explained in the *APG Event Mapping Admin Guide*.

About APG modules

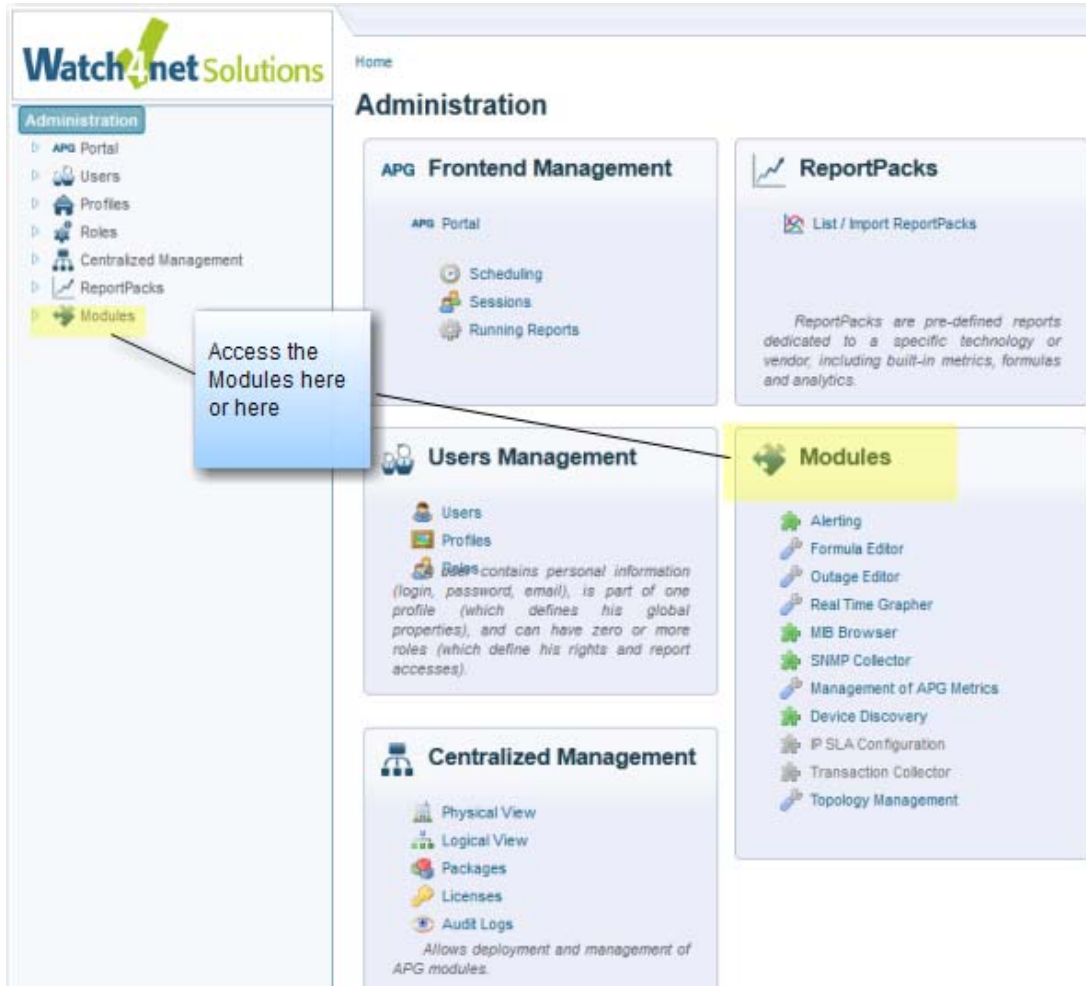
The configuration modules included in APG depend on your installation. The modules give report editors and administrators additional configuration options.

APG tools and modules

Alerting	manage real time alerts
Centralized Management	manage and deploy all your APG modules from one point
Formula Editor	create new formulas
Outage Editor	configure outage periods, also called maintenance periods
Real Time Grapher	to query a device and get real-time graphical updates on performance data
MIB Browser	load MIBs and query devices and configure the SNMP Collector
SNMP Collector	configure SNMP collection
APG Metric Management	allows metrics deletion. Changes are not visible until the APG backend and Tomcat refresh the data. If the property flat table is used, the deleted metrics are still visible in the reports until the property flat table is refreshed.
Device Discovery	discovers SNMP devices and distributes them to APG SNMP collectors
IP SLA Configuration	configures IP SLA connections
Transaction Collector	gathers statistics from generated transactions
Topology Management	manually refresh the topology data

Access APG modules

Some modules need to be installed, or licensed before you can use them. For descriptions of the modules, see [About APG modules](#).



To access APG modules

- 1 On the top right of the web portal click **Administration** and in the **Modules** area click the module you want to work with.
or
In the tree click the **Modules** node, and on the Administration page select the module you want to work with
or
in the tree expand **Modules** and click the module you want to work with.

Filter syntax reference

Variable filters appear in APG wherever you need to select specific indicators. A filter is a combination of predicates and operators that can be grouped using parenthesis. Filters enable dynamic, detailed filtering, as the entire report tree is based on them. This section summarizes the available syntax.

Predicates

property='pattern'	Variable selection based on a property pattern (a pattern is a string that can contain SQL wildcards like '%' or '_')
property=='value'	Variable selection based on an exact property match
property	Selects only the variables that have the specified property
Without Property-Store: #<database type>-<database name>:<data group>-<variable id>	Explicitly selects the variable that has this id in the specified database. The id is based on the data group and the variable id. You can use the keyword ALL that will match all variables in the database. Example (without Property-Store): #APG-DB1:ALL #APG-DB1:group-487
With Property-Store: #<database type>-<cache group>:<database name><data group>-<variable id>	When a cache group is used in the context of the APG-Property-Store, the database name should be the name of the cache group. The id should contain the database name, the data group and the variable id. Example (with Property-Store with cache group "DB"): #APG-DB:ALL #APG-DB:DB1-group-487 Please note that the Property-Store is case sensitive when it comes to property values. For instance, <i>w4n-exchange</i> and <i>W4N-Exchange</i> are two different hosts. For events, simply use the name of the corresponding resource in our APG.xml file (without the FLOW- keyword). Example: #RPE2:ALL
#<database type>:ALL	Selects every variable from the specified database type. Example: #APG:ALL
*	Always true

Operators

&	AND operator
	OR operator
!	NOT operator

URL syntax

The APG Web Portal is available from third party client tools that use this URL syntax and auto-login.

The base URL is:

`http://[APGserverIP:port#]/APG/?param=value¶m=value`

To display reports on full page, use this URL:

`http://[APGserverIP:port#]/APG/report.jsp?param=value¶m=value.`

To display reports in a specific format (jpg, png, pdf, svg, xls and csv are currently supported), use this URL replacing format with the desired one:

`http://[APGserverIP:port#]/APG/report.format?param=value¶m=value.`

Tree management

<code>select=<nodeid></code>	Selects and displays the report for the specified node (eventually expanding parent nodes).
<code>expand=<nodeid></code>	Expands the selected node (and eventually parent ones).
<code>collapse=<nodeid></code>	Collapses the selected node and any child node.
<code>collapseAll</code>	Collapses the whole tree.

Report settings

<code>display=<code></code>	Choose the display mode according to the following code: 0 The 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
-----------------------------------	---

<code>mode=<code></code>	Choose the report mode from these codes: srt The table report mode lrt The leaf table report mode frg The graph report mode srg The children report mode nrX The node report mode vrX The baseline report mode stk The stacked chart report mode hb The horizontal bar chart report mode pie The pie chart report mode gg The gauge chart report mode ico The icon report mode mix The basic mixed report mode dmx The mixed default preferences report mode
<code>period=<seconds></code>	The period (in seconds) of the selected aggregate (0 means real-time). The chosen period must exist in the database.
<code>type=<code></code>	The type of aggregate (meaningful only when period is not 0) to be used among these values: 3 The average 4 The minimum 5 The maximum 6 The sum 7 The last value 8 The number of aggregated values 9 The timestamp of the last aggregated value
<code>var-idx=<id>_<id>...</code>	A ' ' separated list of indexes to restrict the displayed variables.

Graph display preferences

<code>width=<pixels></code>	The graph width in pixels.
<code>lower=<value></code>	The smallest value displayed on graphs.
<code>upper=<value></code>	The greater value displayed on graphs.

Time management

durationType=<code>	A duration type is a default, commonly used, time range description for reports. You can choose one of the following: n when not applicable (for instance, when duration is based on timestamps) p the previous duration l the last duration c the current duration
duration=<code>	A duration is a default, commonly used, time range for reports. You can choose one of the following: a <i>custom</i> duration time code. This code is a combination of numbers and units. s = second m = minute h = hour d = day w = week M = month y = year There is no limit on the number of units, but each unit can only be present once. For example duration=1h45m is translated as 1 hour and 45 minutes. The word <i>calendar</i> to express a calendar duration. This option must be followed by either start and end or start-ts and end-ts parameters. See below.
start=<date>end=<date>	Explicitly specifies the time range of the requested report. The <date> field has the format: YYYY-MM-DD HH:MM. Beware of URL encoding, space may be transformed to '+' and ':' to '%3A'
start-ts=<timestamp>end-ts=<timestamp>	Explicitly specifies the time range of the requested report. The <timestamp> fields are UNIX timestamps.

Advanced time management

itz=<timezone code>	Sets the time zone for the report. The time zone code uses standard zone names, such as America/Montreal.
tf=<time filter.expression>	Sets the maintenance period for the report. The time filter expression looks like<dom>;<dow>;<hod> where: dom is a comma separated list of days in a month, between 1 and 31, so 1,2,10 is the 1st, 2nd and 10th of each month. dow is a comma separated list of days in a week, between 1 and 7, starting on Sunday, so 1,2 means Sundays and Mondays. hod is a comma separated list of hours in a day, between 0 and 23, so 12,13 is 12pm and 1pm each day.

Query and variable selection

search-base=<base>	Changes the search base, which is the node from which the search takes place. <base> can be node, to be combined with a parameter, or root, which is the default.
q=<search string>	The query string for Standard or Quick Search mode. It is a space separated list of tokens. Beware of URL encoding as spaces may be transformed to '+'.
qsp=<search properties>	The space separated list of properties to search in.
qsg=<grouping properties>	The space separated list of node expansion to group query results. Beware of URL encoding as spaces may be transformed to '+'.
qf=<search filter>	The variable selection filter. Beware of URL encoding.
qg=<grouping properties>	The space separated list of node expansion to group query results. Beware of URL encoding as spaces may be transformed to '+'.

Auto-login

autologin=<user>:<pass>	Skip the login page supplying user credentials directly from the URL. This requires that the username and password do not contain the ':' character.
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Automated Performance Grapher (APG)

The name of Watch4net's software suite that gathers, processes and displays performance, event and alerting data related to your infrastructure. Data is gathered through collecting and processing components that can be distributed on a network. The Web Portal displays the collected data in a multitude of highly customizable reports. APG has complementary modules for processing, organizing and displaying data collected from across your network, including hardware, applications, storage and databases.

Backend

The APG Backend transforms the timeseries raw data collected through the processing components and pushes it to the database. The backend determines how data such as computed aggregates are stored. The Alerting Backend handles the backend communication for alerting. Event data is written directly to the database and is not handled by the Backend.

Collectors

Lightweight modules that gather timeseries data from third-party technologies and pass them to APG processing as raw values. Examples of collectors are the Smarts Collector and the SNMP Collector.

Connectors

Components at the end of the processing pipeline that output timeseries data to a location, such as from the MySQL Storage Connector to a MySQL database, or from an Oracle Storage Connector to an Oracle database. You can use a connector to output to a humanly readable form for debugging using a File Connector.

Events

Situations that are either discrete have a duration, such as when virtual machines are created, removed, or migrated on a VMWare vSphere infrastructure. Events can be captured, for example by a VMWare Listener, and the event information can appear in reports with raw value data.

The composition of events can vary. Some events have multiple associated time values for events with duration, which can be used in overlay reports. Each type of event can have different properties that are organized through event mapping files. This file maps events as recorded in the events database to how they will appear in the Frontend. This allows for the differentiation and organization of events from multiple sources.

Events have a separate processing pipeline from raw values and use different processing components. For example, listeners gather events and collectors are used for timeseries. Events are written to different databases, and can make use of the Datastore, which is a high-performance database for events.

Filters

Components used to manipulate data in the timeseries pipeline. For example, the Property Tagging filter can add properties to raw values based on the properties that the raw values have. The Cross Referencing filter can tag two different indicator series with the same properties.

Frontend

The APG Web Portal, which displays timeseries-based and event-based data in reports.

The Frontend interfaces with the same databases as the Backend, retrieving data to display in APG reports.

Processing Pipeline

The APG processing pipeline is comprised of individual modules that run on your network to gather, process, and store timeseries-based performance and event-based data. The modules include collectors and listeners,

which are the data entry point from third-party technology, filters and processing elements that manipulate the data en route, connectors and database writers that output data to their final destinations, and one or more databases that store the data and make it available in the APG Web Portal.

There are separate pipelines for timeseries and event data, with modules that terminate at different database types to store the performance and event data. These flows can interact on some occasions. For example, when you use the Event Aggregator you can retrieve events in the event pipeline, manipulate them and push them to the timeseries pipeline. Installation and configuration information is available in each module's administration guide and the *APG Backend Admin Guide*.

Raw values

A raw value in APG is a floating point value, at a date and for an indicator. This is how timeseries-based performance data is processed in the APG Backend and recorded in the database. Raw values can have metadata associated with them, which are their properties. A series of raw values, for example, can be plotted in an APG graph by selecting a property associated with it.

ReportPack

A ReportPack is a collection of settings and report templates prepared by Watch4net's professional services and customized for a piece of technology. Reports from ReportPacks can often be used out-of-the-box to monitor their targets and can be edited in APG for your needs. You can import and export ReportPacks, along with their individual report templates. ReportPacks rely on collecting and processing components for their data, which can be included or pre-configured by Watch4net.

Reports

Reports are displayed in the APG Web Portal, and show information about timeseries-based performance or event-based data for your infrastructure in tables, graphs and other formats.

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