Users Manual

Statistics 2.4

Table of Contents

General

Statistics is a tool used in planning the future of the network. Using Statistics you have the possibility to retrieve data using SNMP on entities of the host important to you. Statistics presents collected data in nice looking graphs.

User Interface

The web user interface is accessed through a standard web browser. The most common browsers as Opera, Mozilla, Explorer and Netscape have been tested. The start page is accessed by typing https://10.10.10.1/statistics The IP address is unique for your system, 10.10.10.1 is just an example. You can also access Statistics via the main menu in Monitoring, simply choose Statistics from the Reporting section.

The protocol used is to access is HTTP with SSL "Secure Socket Layer". This enables a secure manner for accessing the web interface using encryption.
The start page shows a main menu.

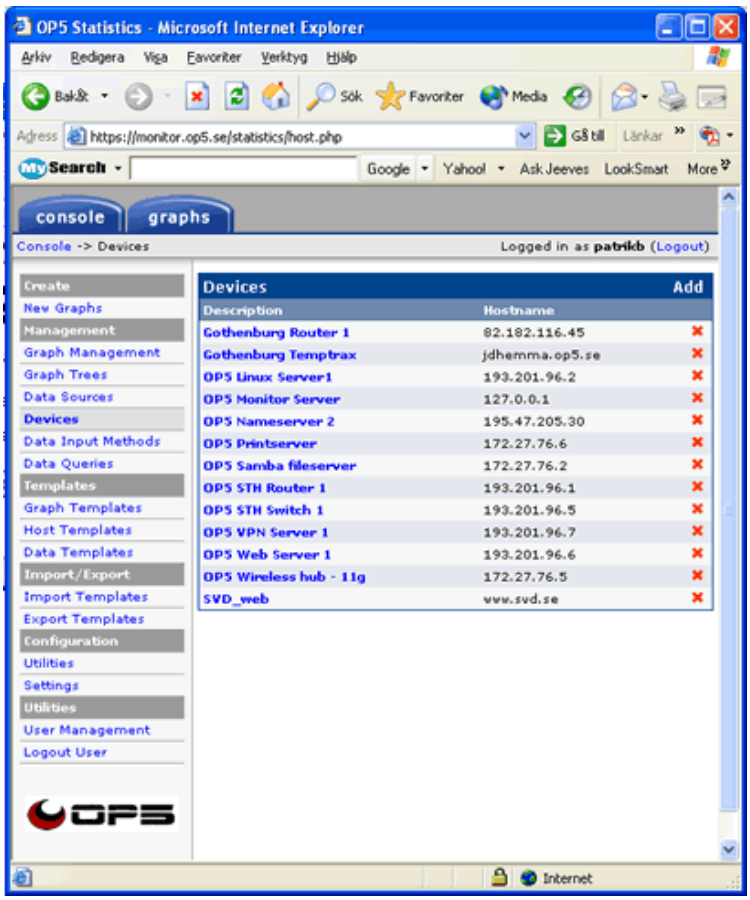
The start page consists of two sections: console and graphs. The console tab is used to when configuring statistics, The Graph tab is used for viewing graphs. The picture to the left shows you the page of the console tab window. On the left hand side is the configuration menu. On the right hand side you have the possibility to configure new hosts and graphs using a step to step configuration. To add a new graph you have to follow three steps:

1. Create Devices
2. Create Graphs
3. View Graphs

Lets look at how this is done..

Devices

To create devices click Devices under the management section of the configuration menu or click 'Create Devices' on the start page.



When clicking devices the following window appear, (see picture. All configured devices (hosts) are showed with the descriptive name and the address. If you click on the red cross you will remove the device from the configuration. If you click the 'Add' link on the top right corner you will add a new device. If you click on the descriptive name of the device you will configure the device.

Click 'Add' ..

A new window appear see picture on next page. Under each configuration option you'll see a small help text.

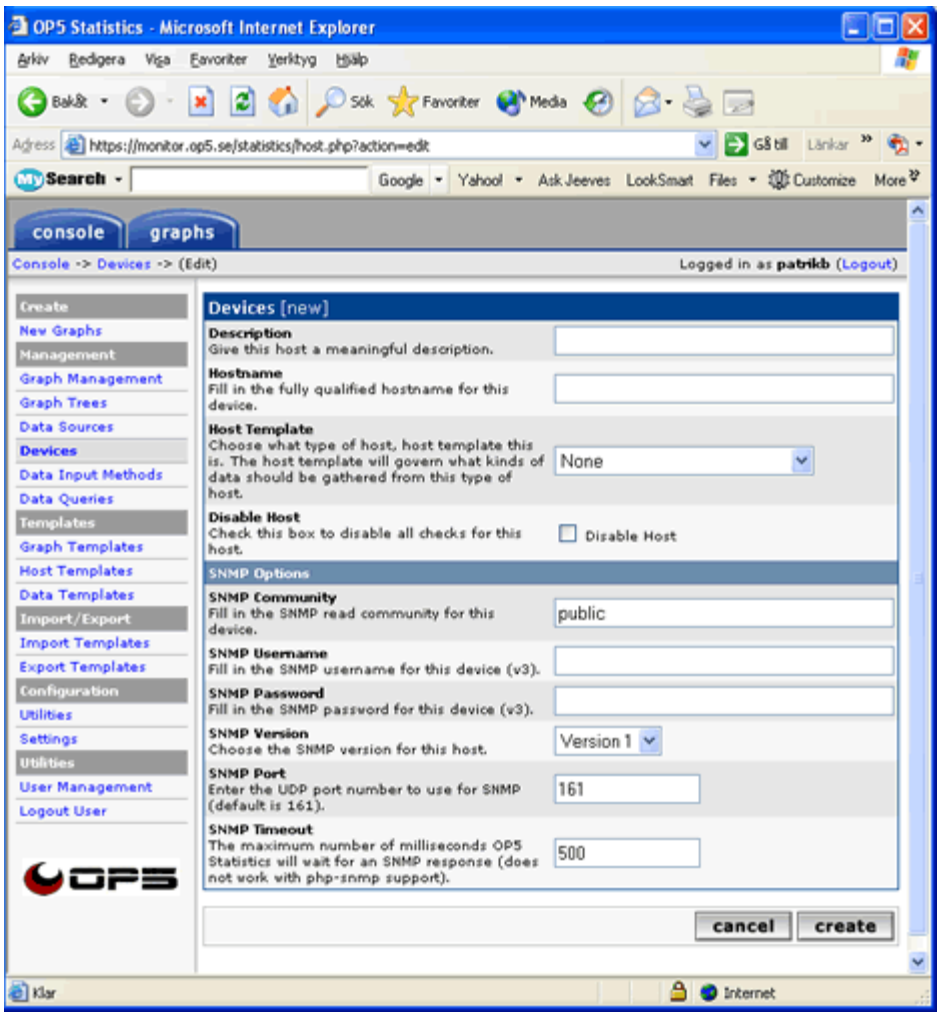
Description: Descriptive name (Long Name) of the device.

Host name: Name of the host as described in the DNS “Domain Name Server” or IP Address.

Host Template: Choose the desired template to use; A Host Template is a collection of configurations to gather data for a specific type of host. The following exists:

- Generic SNMP Enabled Host (Default)
- udc/net SNMP Host
- Karlnet Wireless Bridge
- Cisco Router/Switch (Cisco Hosts)
- Netware 4/5 Server (Netware Client)
- Windows 2000/XP Host (Windows Client)
- Local Unix Machine
- Unix NRPE (Unix Client)
- Temptrax (Temperature Module)

Disable Hosts: Disable all checks for this host.



Under SNMP options you set the SNMP specific configuration attributes as:

SNMP Community: The community name to use when using SNMP. If you leave this option blank, it's assumed that will not use SNMP to do checks.

SNMP User name: If you use SNMP version 3 you have the ability to use a user name for increased security. Add the user name here.

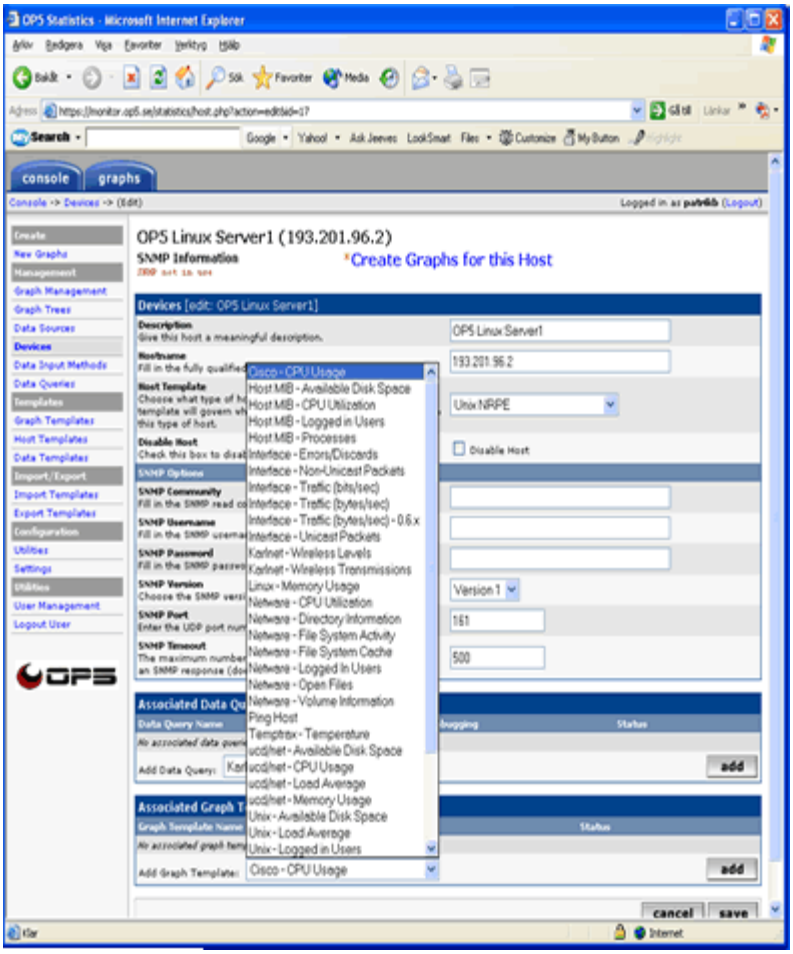
SMP Password:If you use SNMP version 3 you have the ability to use a password for increased security. Add the password here.

SNMP Version. The version you are using for this device (1,2 or 3)

SNMP Port: add the UDP port number you are using to communicate SNMP with the device. By default it's set to 161.

SNMP Timeout: The maximum amount of time Statistics will wait for an SNMP response, default 500mS.

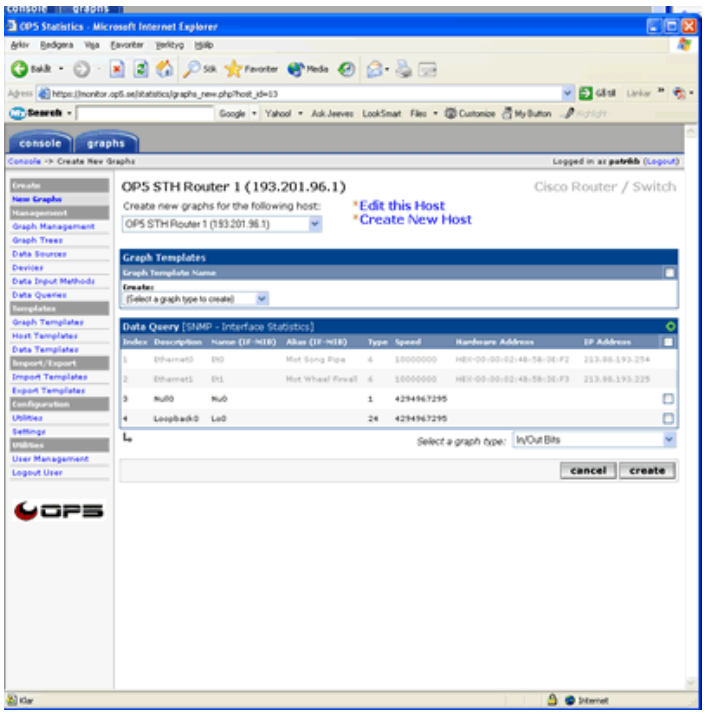
When done adding data click the 'Create' button. Statistics will now attempt to talk to the device. If this works the window will show you basic information about the device retrieved via SNMP. If SNMP fails this will be shown in the top of the window. Remember not all devices use SNMP to be graphed, the Clients are communicated using a special port, not SNMP 161.



When you have clicked 'Create' Added information will be shown in the bottom of the window. It allows you to associate a 'Data Template' or a 'Data Query' with the device. Basically a Data Template consists of one or several data queries. A Data query is the method of retrieving data for this particular device. The easiest way is to choose a template and click 'Add' See picture on next page). Instead of asking the device for all SNMP instances and it's values Statistics only asks for those instances that are included in the template. As an example:Interface Traffic (Bits/sec) will show you all interfaces on the device that you can graph to see traffic in bits/sec. Click Save in the bottom of the window to save the configuration for your device.

Create Graphs & 'Graph Management'

From the start page for the console. Choose create graphs or choose 'Graph Management' from the Management section in the configuration menu.

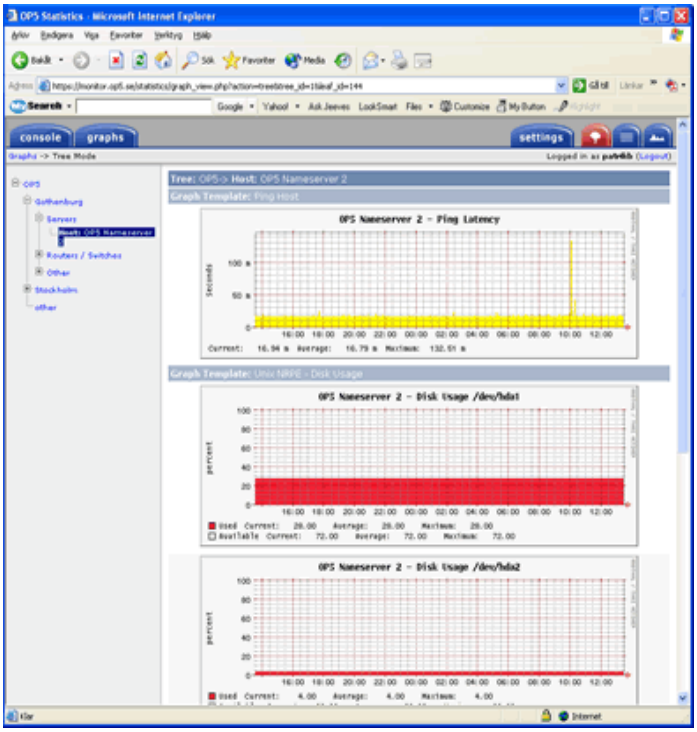


Select the device you want to add a graph to. Select a graph template. A Graph template includes all cosmetic data used to show the graph correctly. The Graph Template can be modified from the Configuration menu under the template section choosing Graph Templates.

A list of the checked SNMP values appears in the bottom of the window according to the data template you choose when creating the device. Check the boxes for the instances you want to be graphed on the right side of the window. Click 'Create'.

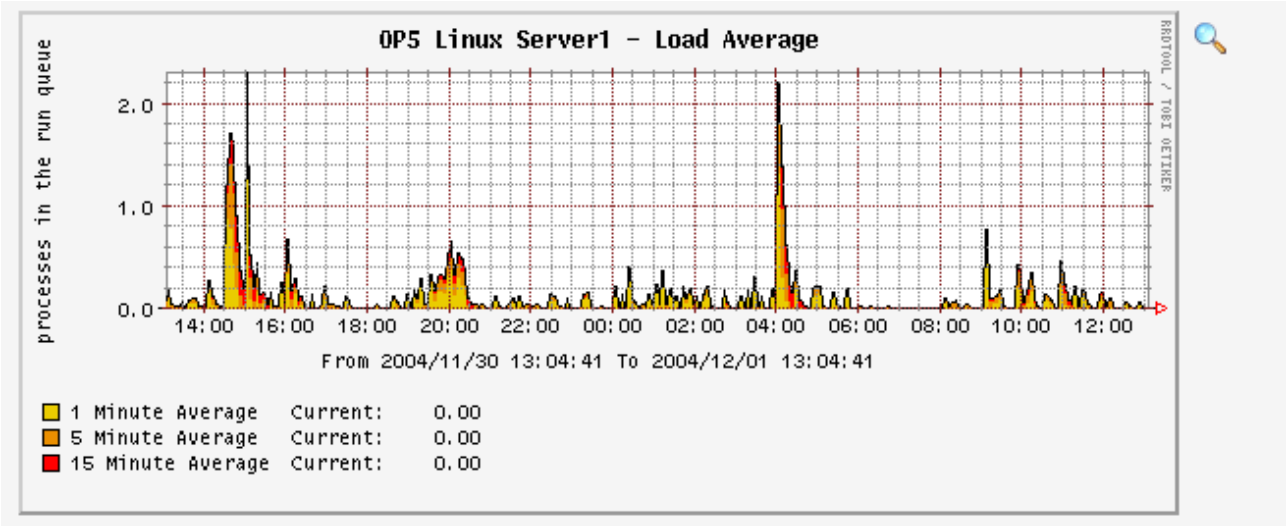
Viewing Graphs

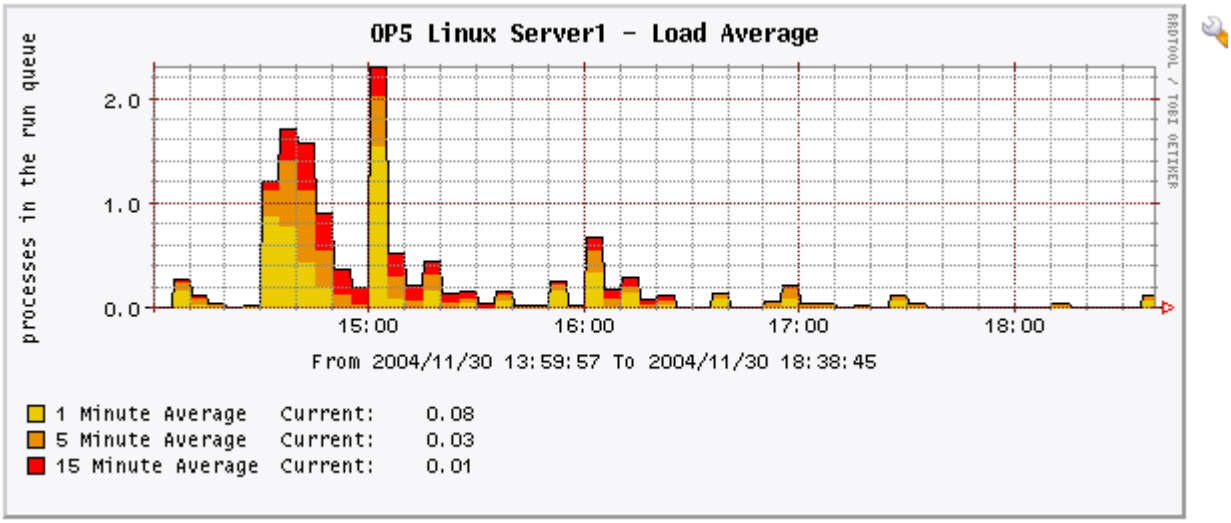
When you click 'Create' Statistics will start to gather data for the device and create a graph



that is filled with data. **Statistics will show empty or no graphs at all in the beginning, you

have to wait a few minutes for the graphs to appear**. On the right hand side of the graph you´ll find a magnifying glass. When clicked upon you´ll have the possibility to zoom into the graph by selecting the area you want zoom. This gives you a more detailed picture of the graph content.



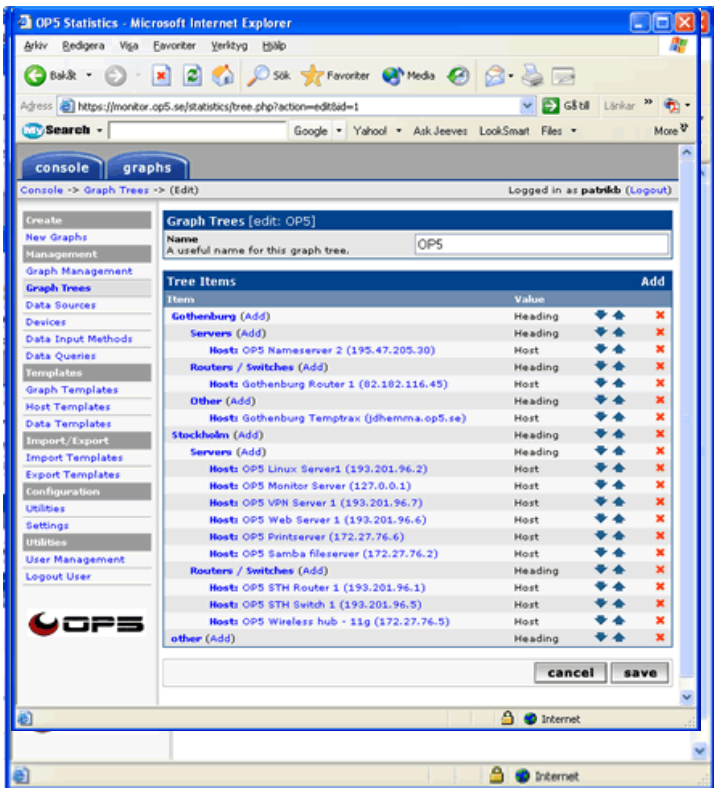


Graph Trees

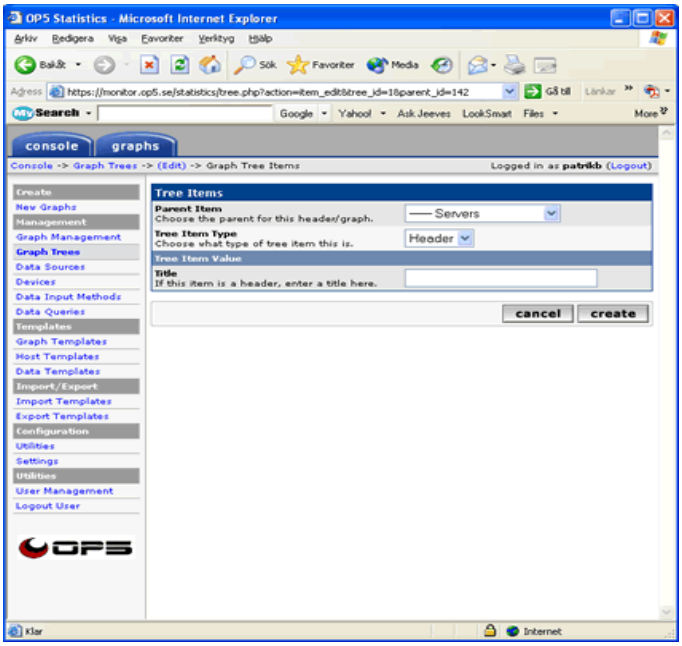
The graph has to be placed in the graph tree to be viewed. A graph tree is basically a tree that has one or several branches that consists of graphs. See picture. As an example: On the top of the tree you usually use the company name. The branches can exist of Servers, routers and so on. When you click a branch the associated devices will appear. Click the device and it's associated graphs will be shown on the right hand side.

To add a device to the graph tree, choose 'Graph Tree' under the section management in the configuration menu.

The top of the graph tree will be shown. You can choose to add a new graph tree by clicking 'Add' in the top right corner of the window or you can click the the graph tree name, (OP5 in the picture). If you click the red cross button you will delete the graph tree.



To add a host for a specific branch, click the 'add' link behind the branch name. See picture (Gothenburg(Add)) as an example. The arrows in the right hand side of the window will move the hosts (devices) and branches in the tree. The red cross button will remove device or branch from the tree. Click 'Save' in the bottom of the window to save the configuration.



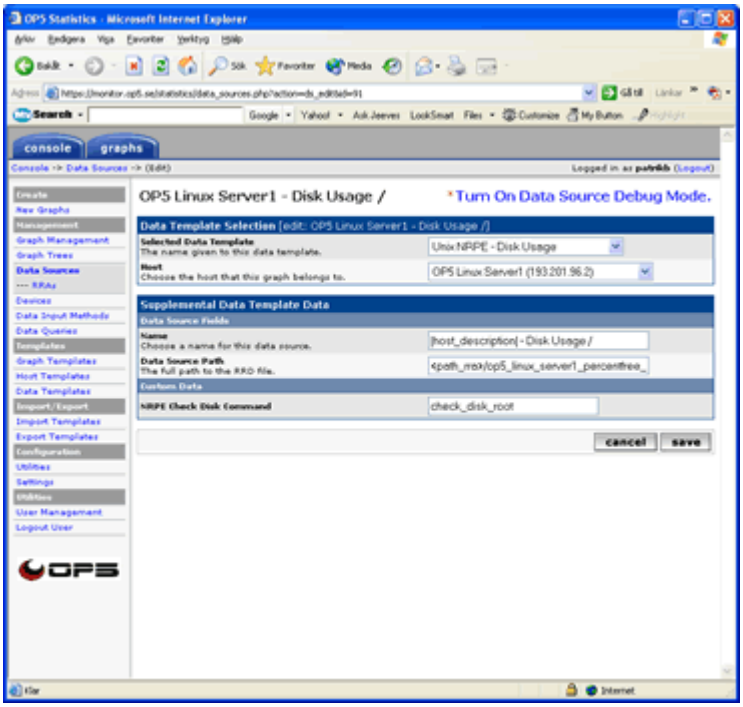
When clicking add after a branch name (See picture above) the following window will appear. Parent Item shows you the nearest branch above the branch you are configuring.

Tree Item Type: Lets you insert a branch or a host. Choose host and the device that you configured.

Title: If you choose to add a branch enter the title of the branch.

Click 'Create' to save the Graph Tree configuration. The graph will now pop up in the graph tab window under the correct branch in the tree.

Data Sources



A data source is the match between a data template (See data templates) and Supplemental Data template, or more easily the host and the graph that are viewed. When clicking the Data source link you'll get a list of all devices and what graphs they are collecting data for. When clicking one of the sources you will get the configuration for that data source, see picture. To add a new data source click 'Add' in the top corner to the right hand side of the window. If you click on the red cross in the list you delete selected source from the configuration.

Data Template selection

Selected Data template: Is the name of the data template used.

Host: The host to which this data source is coupled to.

Supplemental Data Template Data

Name: The name of the data source.

Data Source path: The path to the actual graph used to view statistics for this particular host.

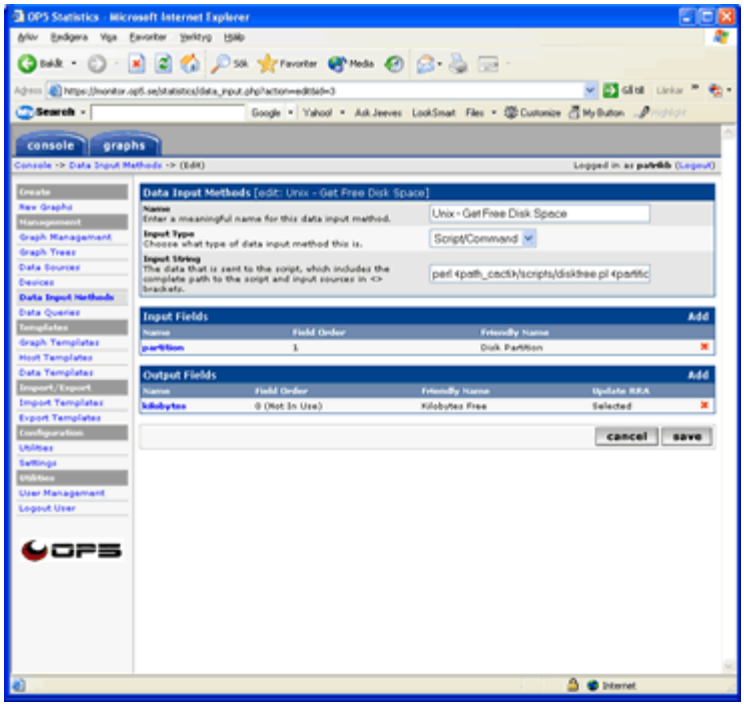
NRPE Check disk command: The macro used to refer to this data source. Differs from source to source.

To save your configuration click the 'Save' button.

Data Input Methods

The data input method is the reference to how we actually poll for the data. When clicking the link for Data Input Methods you'll get a list of all methods. To configure a method click the method, you'll get a new window. See picture on the next page. To add a new method click on

the 'Add' link in the top of the window located at the right hand side. If you click on the red cross in the list you delete selected method from the configuration.



Data Input Methods

Name: Name of the of the method.

Input Type: Choose the method of collecting data: Script, SNMP, SNMP Query, Script Walk.

Input String: The reference to the file used to collect the data.

Use input and output fields to send and receive parameters to certain fields in the method. These field names will appear in the data query configuration.

Click 'Save' to save the configuration.

Data Queries

A data query is coupling of a Data Input Method and a Graph Template. When clicking the link for Data Queries you'll get a list of all queries. To configure a query click the query, you'll get a new window. See picture on the next page. To add a new data query click on the 'Add' link in the top of the window located at the right hand side. If you click on the red cross in the list you delete selected data query from the configuration.

Data Queries

Name: The name of the data query.

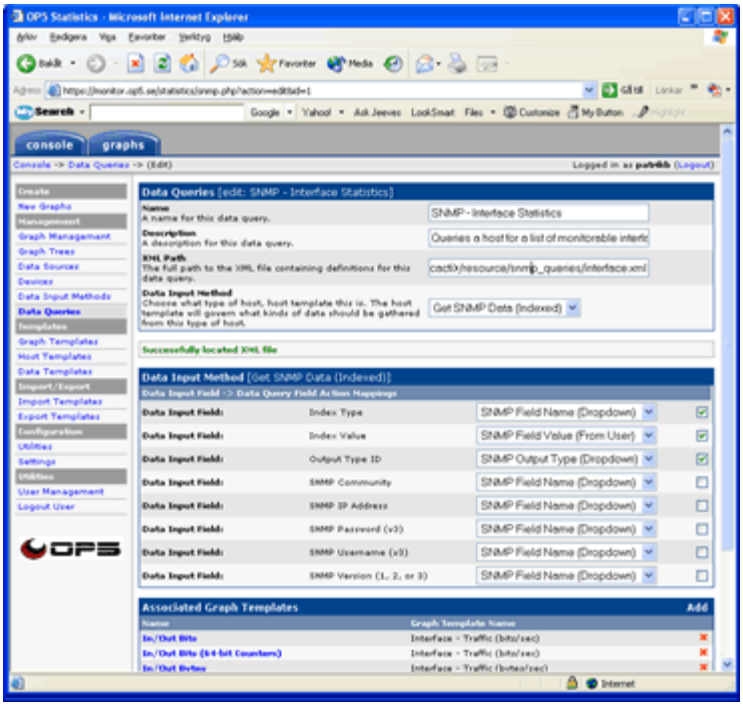
Description: A Descriptive (long) name of the data query.

XML Path: The full path to the XML file containing definitions for this data query.

Data Input Method. The data Input Method to use with this Data query. See section 'Data Query' for more information.

Data Input Method

A list of data inputs are shown corresponding to the choice you made of the data query method. (See data input methods for more information)

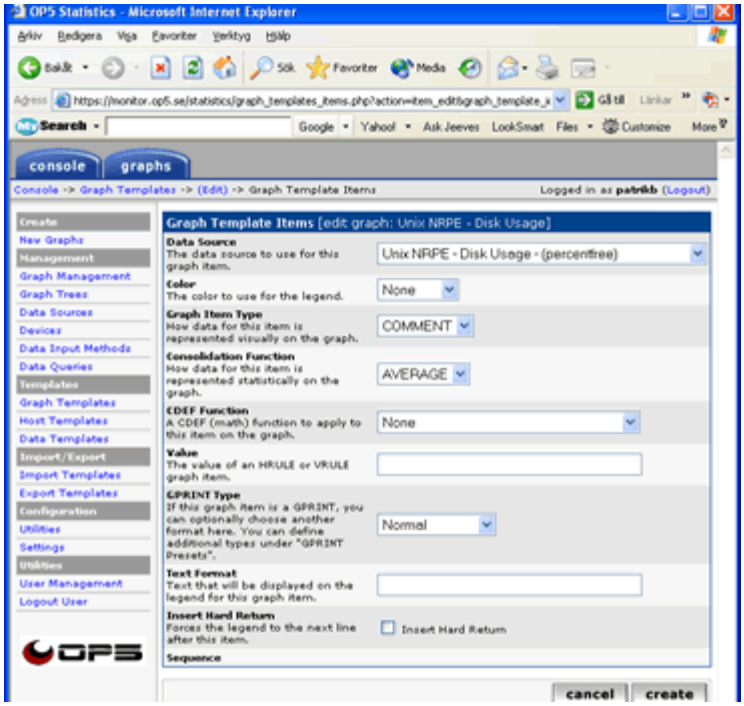


Check the boxes of the data input fields for the type of data you want to do a data query on. In the last section of the window you associate the graph template to use with the Data Query. Click add to associate a new graph template. Click on the red cross of the selected graph template to delete the association. Click 'Save' to save the configuration.

Graph Template

The graph template is the coupling of cosmetic configurations for graphs and the data sources. Choose Graph Templates from the Template section of the configuration menu in the console window. A list of all graph templates will be shown. To add a new graph template click on the 'Add' link in the top right corner of the window. To delete or duplicate a graph template check the graph template and choose the action listed in the bottom of the window, click 'Go'. The graph template window will show you four sections in one window; The graph Template Items, Graph Item Inputs, the template name and the graph template itself.

The Graph Template Items are the configured data sources and the type of graphs that are used. To add a Graph Template Item click the 'Add' button on the top right hand corner. To delete a graph template item click the red cross on the selected item. When adding a new template the following window will appear:



Data source: Choose the data source to use with this template item. See section data sources for more information.

Color: The color of the legend in the graph.

Graph Item type: How data for this item is represented visually on the graph.

Consolidation Function:How data for this item is represented statistically on the graph.

CDEF Function:The math function to apply to this item on the graph. ex. Turn megabytes to bytes.

Value: The value of an HRULE or VRULE graph item.

GPRINT Type: Choose to display average or exact numbers.

Text Format: Text displayed on the legend of the graph.

Insert Hard Return: Forces the legend to the next line after this item.

Click 'Create' when done configuring.

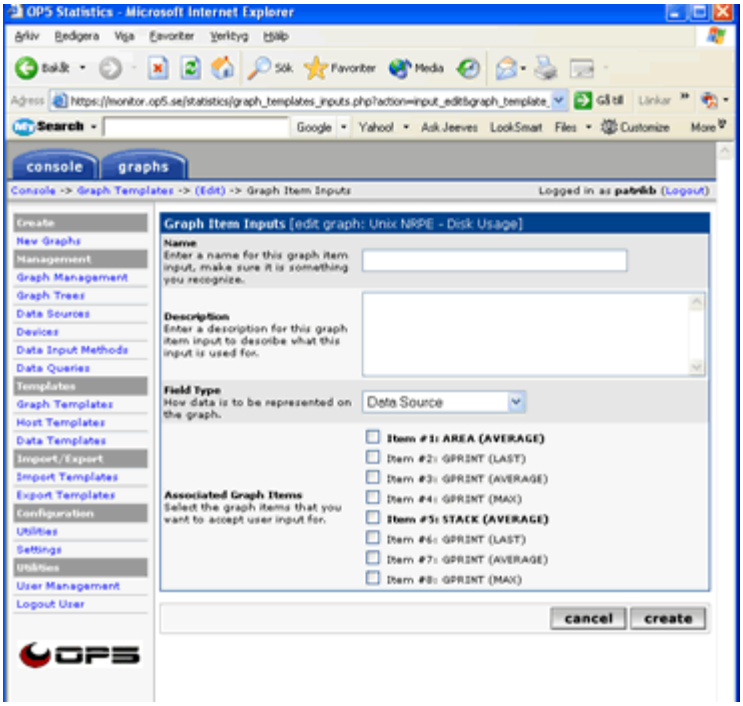
The second section is Graph Item Inputs. Click 'Add' to add a new Graph Item Input. Click the red cross to delete the input. Click the input name to edit the input. A new window appears, see next page.

Name: The name of the Graph Item Input.

Description: A long descriptive name of the input.

Field Type: Representation of the data in graphs. Ex Data Source, Color or Value.

Associated Graph Items:Graph Items that you want to accept user input for.



Click 'Create' when done. The third section lets you set a name for the Graph Template.
The fourth section lets you put in some extras for the template:

Title: The title of the graph.
Image Format: The picture format of the graph, PNG or GIF.
Height: Height of graph in pixels.
Width: Width of graph in pixels.
Auto Scale: If the graph shall be automatically zoomed or not.
Auto Scale Options: If maximal auto scale shall be used or not, an option to the value above.
Logarithmic Auto Scale Options:
Rigid Boundaries:
Auto Padding: If padding, extra space shall be used from the edge of the graph to the content of the graph.
Allow Graph Export: If the graph can be exported or not.
Upper Limit. The upper limit of the graph x-axis.
Lower Limit: The lower limit of the x-axis.
Base Value:
Unit Value:
Unit Exponent Value:
Vertical Label: Label of the x-axis.

Host Templates

A host template is a coupling of Graph Templates and Data Queries.

When choosing the host Templates from the template section in the configuration menu on the console tab window. A list of all configured host templates will be shown. To add a new template click the 'Add' button on the top right hand side of the window. To delete a template click the red cross button on the right hand side for the selected template.

To edit an existing template just double click the template. Add a name for the Host template. Associate the graph template. (See graph templates for more information), by choosing the template and clicking the add button on the right hand side of the Associated Graph Template section. Associate the data query by choosing the data query and clicking the 'Add' button. To delete an associated data query click the red cross button on the right hand side of the associated data query section. Click 'Save' to save your configuration.

Data Templates

A data template is the data source with a custom configuration. When choosing the Data Templates from the template section in the configuration menu on the console tab window. A list of all configured data templates will be shown. To add a new template click the 'Add' button on the top right hand side of the window. To delete a template click the red cross button on the right hand side for the selected template.

Data Templates Section

Name: The name of the data template.

Data Source Section

Name: The name of the data source to use. The host name will be inserted automatically using the [host_description] field name.

Associated RRA's: The length of the data retrieving interval before starting from scratch again (Round Robin Average).

Step:

Data Source Active: Check the box to activate data retrieve.

Data Source Item

Clicking 'New' on the right hand side of the window section will take you to the Graph Template window.

Internal Data Source Name: Name of the data source to use.

Minimum Value: The lowest value that will be used.

Maximum Value: The maximum Value that will be used.

Data Source Type: The type of data that will be used. Ex. Counters, Average, Derivate, Gauge.

Heartbeat: The interval in seconds between polling for data.

Custom Data

Index Type:

Index Value:

Output Type ID:

The following items are not configured by default, rather they are configured per device under Devices in the configuration menu.

SNMP Community: The SNMP Community name of the device that will be graphed.

SNMP IP Address: The IP Address of the device that will be graphed.

SNMP Password: Only for usage with SNMP version 3.

SNMP User name: Only for usage with SNMP version 3.

SNMP Version: 1, 2 or 3.

Click 'Save' to save your configuration.

Import & Export Templates

To import or export templates go to the import & Export section of the configuration menu in the console tab window.

When choosing 'Import Templates' you will be asked to locate the local XML file to do imports from. Or you can import from an XML file that only includes text. Click 'Save' when done.

When choosing 'Export Templates' you will be asked about the template to export, if you want to export all related information to the template (dependencies), and the output format of the export (browser, raw XML, local file). Click the 'Create' button to execute the export.

Utilities

The utilities selection lets you view the poller cache and the SNMP cache. Furthermore it lets you clear the poller cache. The poller cache is the data that is being passed to the poller each time it runs. The data is then in turn executed/integrated and the result are fed into the rrd files for graphing or the database for display.

The SNMP cache stores information gathered from SNMP queries. It is used by OP5 Statistics to determine the OID to use when gathering information from an SNMP enabled host.

Settings

The settings window has four tabs, sections, to configure: General, path, visual and authentication.

General

Log File: What OP5 Statistics should put in it's log file. Choose from: Graph, Create, Update and SNMP.

SNMP Version: The SNMP Version you have installed in your system. i.e net-snmp 5.x or ucd-snmp 4.x

Guest User: The name of the user that can log in as a guest.

Remove verification: If Statistics wants a confirmation before items are removed.

Path

You must specify the path to your external binaries in the system. This is configured by default.

SNMP walk binary path: The path to your SNMP walk binary.

SNMP get binary path: The path to your SNMP get binary.

RRD Tool binary path: The path to your RRD tool binary.

PHP binary path: The path to your PHP binary.

HTML Export path: The HTML path to use if you want to export graphs.

Export every X times: The interval in minutes for the export.

Visual

Graph Management – Rows per page: The number of displayed rows per page.

Graph Management – Maximum Title Length: The maximum number of characters of the title for a graph.

Data Queries - Maximum Field Length: The maximum number of characters to display for data query field.

Data Queries – Maximum Java script Rows: The maximum number of data query rows to display with java script on the 'New Graphs' page.

Data Sources – Rows Per Page: The number of rows to display on a single page for data sources.

Data Sources – Maximum Title Length: The maximum number of characters to display for a data source title.

Authentication

Use OP5 Statistics Built in Authentication: By default OP5 Statistics handles user authentication, which allows you to create users and give them rights to different areas within OP5 Statistics. You can optionally turn this off if you are using other other means of authentication.

Use LDAP Authentication:This will allow users to use their LDAP credentials with OP5 Statistics.

LDAP Server: The DNS host name or IP address of the server you wish to tie authentication from.

LDAP DN: This is the Distinguished Name syntax, such as <user name>@win2kdomain.lcl.

LDAP OP5 Statistics Template User: This is the user that OP5 Statistics will use as a template for new LDAP users.

Poller

Poller enabled: If you wish to stop the polling process, you need to uncheck this item.

Poller type: The OP5 Statistics poller to use. The setting will take effect at next polling interval. Select between cmd.php(default) or cactid poller.

Maximum concurrent poller processes: The number of concurrent poller processes to execute. Using a higher number when using cmd.php will improve performance. Performance improvements in cactid are best resolved with the threads parameter. (Default 5).

Maximum Threads per Process: The maximum threads allowed per process. Using a higher number when using cactid will improve performance. NOTE Applies only to CACTID! (default 1)

Downed Host Detection: The method OP5 Statistics will use to determine if a host is available for polling. NOTE: It is recommended that, at a minimum, SNMP always be selected. (SNMP default). You can choose to use ping and snmp or ping as well.

Ping Type: The type of ping packet to sent. NOTE: ICMP requires that the OP5 Statistics Service ID have root privileges in Unix. (UDP default)

Ping Timeout Value: The timeout value to use for host ICMP and UDP pinging. This host SNMP timeout value applies for SNMP pings. (400 default)

Ping Retry Count: The number of times OP5 Statistics will attempt to ping a host before failing. (1 Default)

Failure Count: The number of polling intervals a host must be down before logging an error and reporting host as down. (2 Default)

Recovery Count: The number of polling intervals a host must remain up before returning host to an up status and issuing a notice. (3 Default)

Graph Export

Export Method: Choose which export method to use (Disabled, classical(local), ftp(remote)).

Export Path (both local and ftp):If you want OP5 Statistics to write static PNG's and HTML files to a directory when data is gathered, specify the location here. This feature is similar to MRTG, graphs do not have to be generated on the fly this way.

Export timing: Choose when to export graphs (x times, hourly, daily)

Export Every x Times: If you don't want OP5 Statistics to export static images every 5 minutes, put another number here. For instance, 3 would equal every 15 minutes. (Default 1 minute)

Hourly at specified minutes: If you want OP5 Statistics to export static images on an hourly basis, put the minutes of the hour when to do that. OP5 Statistics assumes that you run the data gathering script every 5 minutes, so it will round your value to the one closest to its runtime. For instance, 43 would equal 40 minutes past the hour.

Daily at specified time: If you want OP5 Statistics to export static images on an daily basis, put here the time when to do that. OP5 Statistics assumes that you run the data gathering script every 5 minutes, so it will round your value to the one closest to its runtime. For instance, 21:23 would equal 20 minutes after 9 PM.

Sanitize remote directory: Check this if you want to delete any existing files in the FTP remote directory. This option is in use only when using the PHP built-in ftp

FTP Host: Denotes the host to upload your graphs by ftp

FTP Port: Communication port with the ftp server (leave empty for defaults). Default: 21.

Use passive mode: Check this if you want to connect in passive mode to the FTP server.

FTP User: Account to log on on the remote server (leave empty for defaults). Default: Anonymous.

FTP Password: Password for the remote ftp account (leave empty for blank)

User Management

You can configure users to access the console or the graphs or just specific graphs. To configure user access choose User Management from the configure menu on the console tab window. A list of users will appear. To add a user click the 'Add' button in the top right corner of the window. To delete a user click the 'red cross' button on the selected user located at the right hand side of the window. To edit an existing user click the user name.

The user management configuration window consists of two sections, first the user

management section and second, the permissions section. The permissions are divided into three tabs: Realm Permissions, Graph Permissions, Graph Settings.

The user management section lets you add:

User name: Name of the user (Login name)

Full Name: A long descriptive name of the user.

Password: The password of the user. The second field is for confirmation of the password.

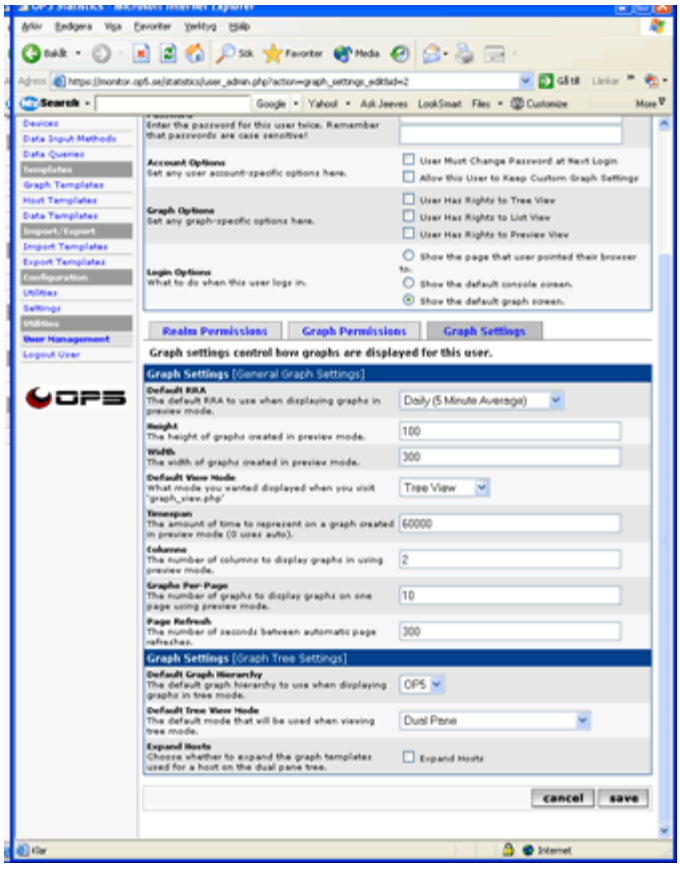
Account Options: Lets you specify if the user has to change is password at next login and if the user can keep custom settings in the graph tab window.

Graph settings: Lets you specify if this user has the right to tree view (The tree listed to the left side), List view (All graphs listed in a list) or Preview List.

Login Options: Lets you specify what the first page will be for the user; User specified, Console or graph window.

Realm Permissions: Lets you specify what the user can update.

Graph Permissions: You can either deny or allow the user to view graphs depending on host, graphs, graph templates or graph tree. See picture on the next page.



The graph setting tab window lets you specify how graphs are displayed for this user.

Default RRA: Select the default Round Robin Average. (The interval before the data is filled from the beginning in the database).

Height: Height of the graph in pixels.

Width: Width of the graph in pixels.

Default View Mode: Select the default view mode; Tree view, List View, Preview View.

Timespan: The amount of time to represent a graph created in the preview mode.

Columns: The number of columns to use in preview mode.

Graphs per Page: The amount of graphs presented in preview mode.

Page Refresh: The amount of seconds before the page refreshes itself.

Default Graph Hierarchy: The default tree hierarchy to display graphs in preview mode.

Default View mode: The default mode used when viewing graphs in tree mode.

Expand hosts: Check the box if the hosts shall be viewed directly (be expanded) in tree view mode.

Click 'Save' to save the configuration.

Alarm on statistics

You can get an alarm in Monitor on contents of your statistics by using the **check_mrtg** plug in. Please see the OP5 Monitor 2.2 Manual for more information.