
Getting Started

SNMPc OnLine

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Computing

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- Apache Web Server (*Copyright © 2000-2014 The Apache Software Foundation*)
- PHP (*Copyright © 1999 - 2014 The PHP Group*)
- Microsoft SQL Server 2008 R2 Express Edition (*Copyright © 2008 Microsoft Corp.*)

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NetFlow® Support

SNMPC OnLine includes support for a broad suite of application monitoring technologies including NetFlow, SFlow, JFlow and IPFIX. An intuitive front end delivers in-depth understanding of network traffic, application usage and user traffic flows.



Utilizing NetFlow and sFlow enabled switches and routers in the network from manufacturers including Cisco, HP, Juniper and Allied Telesyn, SNMPC OnLine delivers network wide traffic insight without requiring the overhead of deploying separate hardware probes.

Benefits of NetFlow type technologies include:

- Monitoring which applications are utilizing bandwidth on the network.
- Tracking server usage and access requirements
- Identifying network usage of non-business applications and websites
- Creating baseline traffic profiles for modeling and capacity planning
- Intrusion detection
- Application License Compliance

Microsoft Visio® Support

SNMPC OnLine includes the capability to display Microsoft Visio network drawings associated with subsets of the SNMPC topology map. The status of network elements is represented by different symbol colors and you can click on icons to drill down into other Visio drawings or to display a detailed node information page.

Any existing Visio diagrams can be easily imported into SNMPC OnLine. If you are already using Microsoft Visio to document your network infrastructure, this new feature saves a great deal of time in creating a highly customized representation of your managed network.

Even if you are not currently a Visio user, you will benefit from the many included symbol types and the extensive drawing capabilities of the Visio application when creating new network drawings. Visio stencils, templates and drawings are also available from many network device vendors and third party developers.

The screenshot displays the SNMPC OnLine web interface. At the top, it says "SNMPC OnLine" and "CASTLE ROCK COMPUTING". Below that, it indicates "Logged in as Administrator". The main content area is titled "CRC Network for 4h Ending 12:00 November 14th, 2006".

Key components of the dashboard include:

- Calendar:** A calendar for November 2006, with the 14th highlighted.
- Carrier Availability:** Two gauges showing "Cisco Poll" results. The first gauge shows a "ResponseTime Average" of 27.195. The second gauge shows a "PctOK Average" of 98.479.
- Network Throughput:** A line graph showing "Raw Samples" for "InUtil" (red) and "OutUtil" (blue) from 08:00 to 11:00 on 11/14/06.
- Redundant Web Server Farm:** A network diagram showing a "Load Balancer" connected to multiple "Web-App Servers" and "SAN Networks".
- Network Events:** A table listing recent events.

Cur Date/Time	Node	Event
11/14/06 15:54:03	PowerEdge1	Low Disk Space Warning - Under 10% Free Disk Space...
11/14/06 15:53:48	PowerEdge1	Device Responding to Poll
11/14/06 14:57:01	Michigan_T3	High Number of Link Errors
11/14/06 14:50:45	Virginia_Campus	Network Response SLA Breached
11/14/06 14:50:28	Cisco	Device Responding to Poll
11/14/06 14:50:28	Catylst	Device Responding to Poll
11/14/06 14:50:27	Alteon2	Device Responding to Poll
11/14/06 14:50:27	Firewall1	Device Responding to Poll

Visio drawings are created or imported using the included *MapDraw* tool. Each drawing is associated with an SNMPC OnLine *Map View*. You can also create customized dashboard views that include a Visio map drawing along with other SNMPC OnLine elements such as graphs, bar charts, data tables and event log views.

For information on creating, importing, and displaying Visio drawings, please see to the *Custom Map Views* section of this document.

Using this Document

This document provides an overview description of the most commonly used SNMPc OnLine features. For a complete description of SNMPc OnLine, please use the **Help** link at the upper right area of the SNMPc OnLine Web console. The Help system includes a high level **Table of Contents** and also provides **Context Sensitive Help** relevant to the page you are viewing.

This Getting Started manual is the only printed documentation available with SNMPc OnLine. This document is available in Adobe PDF format at the **Products** page of www.castlerock.com and in the SNMPc OnLine WEB console **Help** link.

NOTE 1: SNMPc OnLine is an Add-On product for the **SNMPc Enterprise** management platform. You should be familiar with using SNMPc Enterprise before attempting to install, configure or use SNMPc OnLine.

NOTE 2: The SNMPc OnLine installation can automatically create a set of reports in SNMPc. This document assumes you have enabled this feature during the install. Many of the descriptions in this document pertain to the automatically created reports.

er to use Visio drawings in SNMPc OnLine you must separately purchase and install Microsoft Visio from a Microsoft Reseller.

Getting Technical Support and Updates

SNMPc OnLine includes free technical support via email and web downloadable updates for a period of one year from purchase. With technical support, you can get help when installing or using SNMPc OnLine. We do not provide telephone support or training.

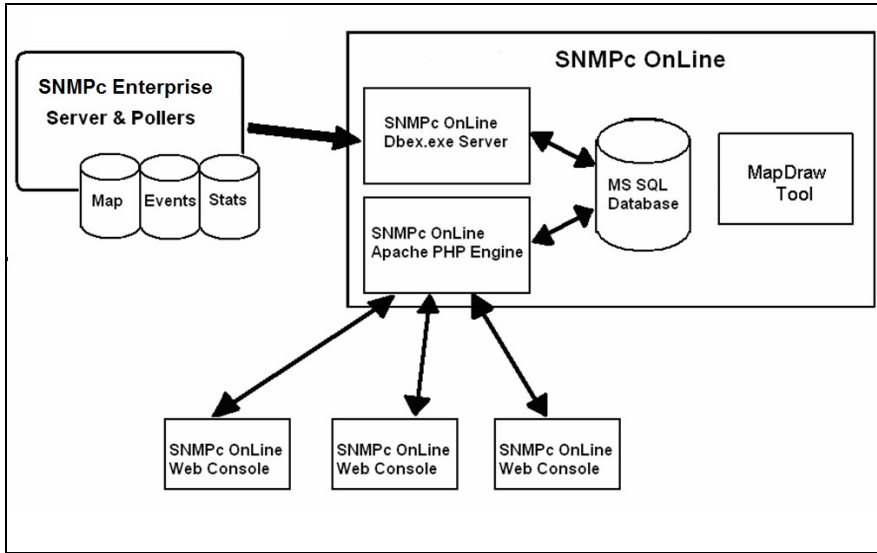
For continued technical support and downloadable updates after the first year you must purchase an Extended Software Updates license on a yearly basis. Please go to the Sales page at www.castlerock.com for more information.

For technical support, please go to the **Support** page at www.castlerock.com. Press “Click Here to Create a New Account” to register at our HelpDesk system.

After creating your HelpDesk account, log on and click the “Support Tickets” link. Then use the Post link in the upper right of the page to add a new support ticket. Once you have created a HelpDesk account you can also send email to support@castlerock.com.

Architecture Overview

SNMPc OnLine provides *Automatic SQL Database Storage* and a *Dynamic WEB Based User Interface* for the SNMPc Network Management System (NMS). The following diagram shows the overall architecture of SNMPc OnLine:



SNMPc OnLine exports information from SNMPc Enterprise, including map topology, event log entries, and trend reports, into a Microsoft SQL database. Data is exported automatically through a background process (dbex.exe) at different intervals depending on the source. For example, map and event records are stored as they are generated and report data is updated once every several minutes.

SNMPc OnLine also includes an *Apache Web Server* and a set of *PHP Scripts* for dynamically displaying the stored data through a Web Browser. Any number of users can concurrently access the data from different locations on the Internet.

SNMPc OnLine takes advantage of SNMPc data structuring and user access controls to present only the data required by each user in an organized fashion. The console interface includes powerful tools for viewing data in summary and detail formats as well as selectively combining data into custom dashboard views. Simplified and advanced calendar controls let you easily navigate large amounts of data and quickly zoom in to specific time periods.

SNMPc OnLine also includes the MapDraw tool for creating Map View drawings of SNMPc nodes. MapDraw allows you to import, create and display Visio graphics. You can then view dynamic status information of SNMPc nodes in the SNMPc OnLine Map View.

Installing SNMPc OnLine

The following table lists the minimum recommended system requirements.

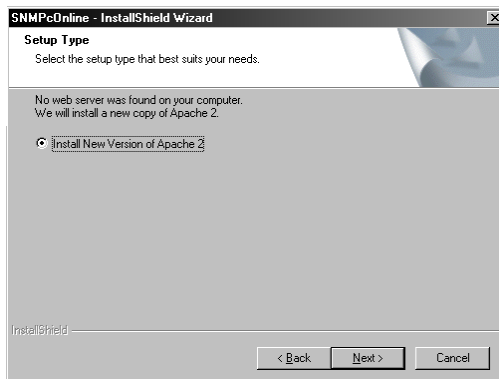
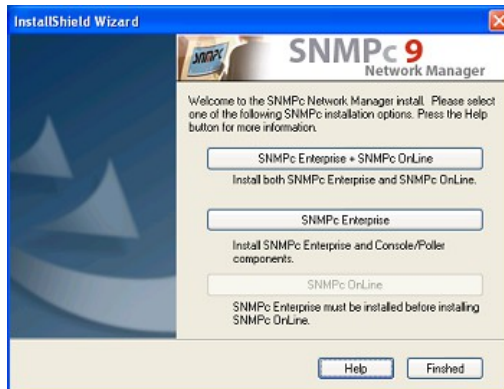
PARAMETER	REQUIREMENT
Management Platform	SNMPc Enterprise 9.0 or above
Web Server	Apache (included) or Microsoft IIS
Database	MS SQL Server 2005 (2008 Express Edition included).
Server Operating System	Windows 2012, Win8, Win7sp1, 2008R2sp1, Vistasp2
Graphics Application	Microsoft Visio 2003, 2007 or 2010 (optional)
CPU	Intel 2Ghz 2+ cores
Memory	8 GB RAM
Disk Space	100 GB
WEB Console Operating System	IE 32 bit 8.0 or above

SNMPc OnLine is sold as a bundle with the SNMPc Enterprise management platform as the **SNMPc Network Manager**. Use the SNMPc Network Manager installation package to install SNMPc OnLine.

Note that you must install SNMPc Enterprise before installing SNMPc OnLine.

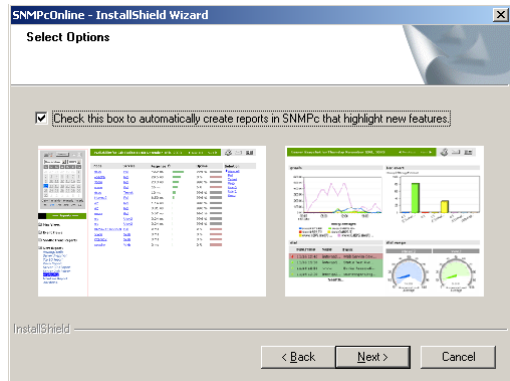
Perform the following steps to install SNMPc OnLine.

- Log on to Windows with Administrator permission.
- Shut down any running SNMPc components including the SNMPc task bar icon.
- Insert the SNMPc Network Manager CDROM into the CDROM drive.
- Use the **Windows Start/Run** menu and enter `d:\setup`, where `d:` is the CDROM drive.
- The install program will show three buttons to optionally install SNMPc Enterprise, SNMPc OnLine, or both applications. Select one of the buttons marked as installing SNMPc OnLine.
- The installation will proceed to the SNMPc OnLine welcome dialog, a license agreement dialog, and an install directory dialog. We recommend you install SNMPc OnLine in a subdirectory of the SNMPc Enterprise installation if possible.



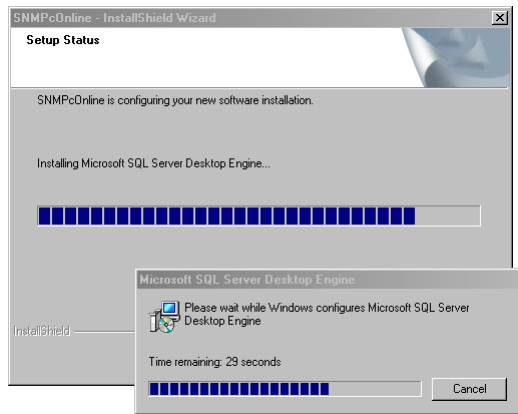
- The install program will check your system for an installed Web server. SNMPc OnLine can operate with Apache or Microsoft IIS Web servers.
- At the next dialog you can choose which web server you want SNMPc OnLine to use. Note that even if you are already running Apache or Microsoft IIS, you can still install a new Apache server as it uses a different server port (8080).

- SNMPc OnLine can automatically configure SNMPc Enterprise to create a set of trend reports using a small number of map devices. These reports highlight the main features and new report styles of SNMPc OnLine and are used as examples throughout this document.
- The next dialog lets you enable or disable automatic report setup. ***We strongly recommend that you enable this feature.***



- The setup program will now proceed to install SNMPc OnLine. This will normally install a copy of the Apache Web server and Microsoft SQL Server 2005 (Express Edition) and can take a considerable time to complete. You will see progress dialogs showing what component is being installed and the estimated time to completion.

- The setup program can optionally reboot your system at the end of the install. This is required to start the new services. We recommend you reboot the system after the install has completed.

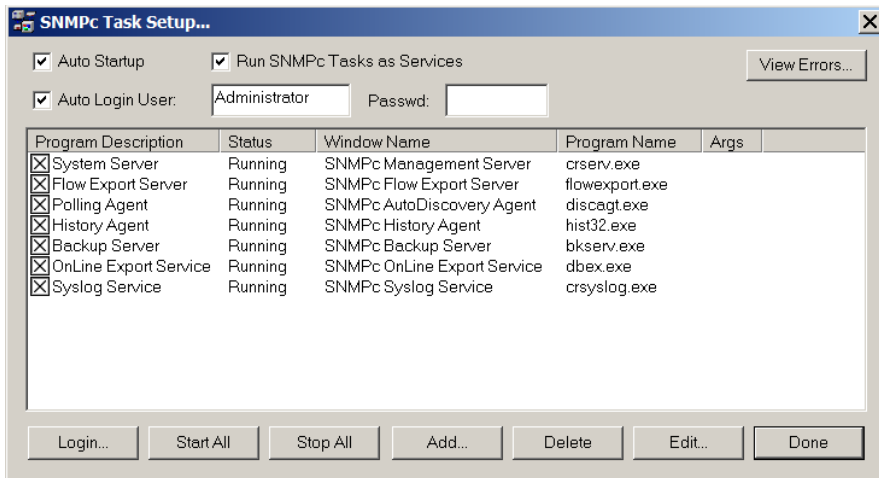


The next two sections describe how to start and control SNMPc OnLine server components and how to access SNMPc OnLine through a WEB Browser.

Starting the Server

The SNMPc OnLine background server is installed and configured to start automatically. Use the **SNMPc Network Manager/Login Console** command from the **Windows Start/Programs** menu to start the SNMPc Console. After you login to SNMPc the SNMPc OnLine Web Console will be displayed in a Web Browser. The next section describes different ways to start the SNMPc OnLine Web Console.

SNMPc OnLine server functions are implemented by the **dbex.exe** program. During the installation this program is added to the list of SNMPc background tasks. Use the SNMPc Console **Config/System Startup** dialog (shown below) to configure how the server is started.



The SNMPc OnLine server entry is shown here as the last item, named **Online Export Service**. The server will start along with other SNMPc tasks.

Check the **Run SNMPc Tasks as Services** box to run all tasks as Windows services. Otherwise the tasks will run as regular Windows applications and you must first log on to Windows before starting them.

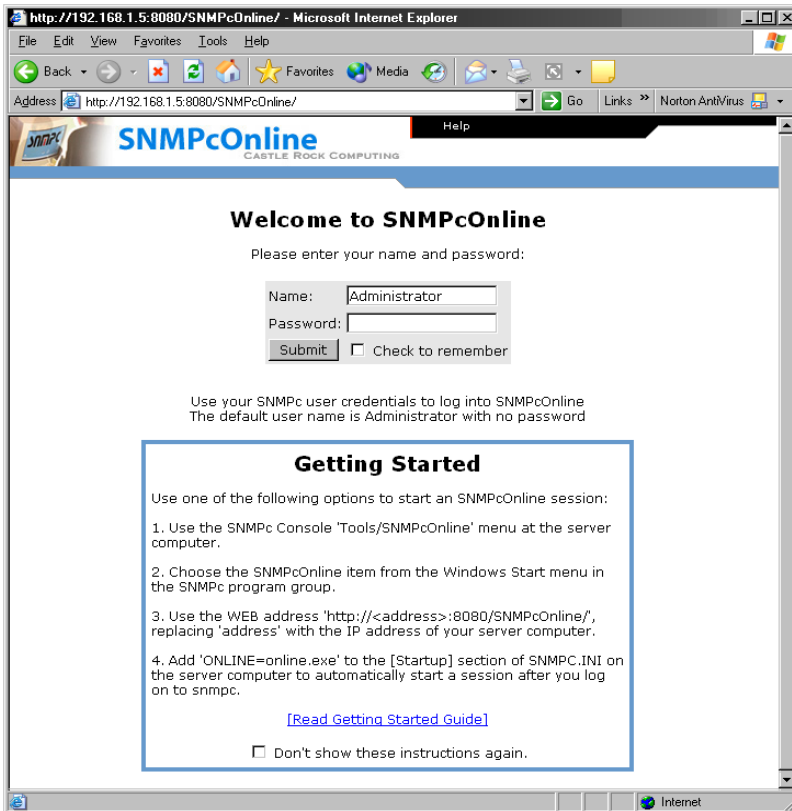
Check the **Auto Startup** box to have the tasks start automatically when you reboot Windows (when running as services) or when you log on to Windows (when running as regular apps).

If **Auto Startup** is disabled, or the OnLine Export service isn't running, use the **Start All** button to start all tasks. You can also use the SNMPc **Startup System** and **Shutdown System** commands from the SNMPc program group in the Windows Start menu.

Starting the WEB Console

The SNMPc OnLine user interface is provided through a web browser session.

After installation the SNMPc OnLine web console can be accessed through the Tools menu in the SNMPc console, or from the Windows Start menu (Apps list in Windows 8) under the SNMPc Network Manager/SNMPc OnLine section. You will need to enable cookies and disable pop-up blockers in the browser. The standard SNMPc OnLine login screen is shown below:



To log in, enter an SNMPc username and password. If you are using a new install of SNMPc the default username is *Administrator* with no password (i.e., blank).

Enable the *Check to Remember* checkbox to perform an auto-login with the same username and password next time you open the SNMPc OnLine web console.

Press *Submit* to login to the SNMPc OnLine web console.

Instructions on starting the SNMPc OnLine web console are displayed below the username/password text boxes. These instructions include a link for displaying the Getting Started Guide (this document). If you don't want to see these instructions again, enable the checkbox at the end of the instructions.

After the first installation, the SNMPc OnLine server will go through a series of configuration steps, including the import of the SNMPc map and settings. This can take several minutes. A warning screen will be displayed if you try to login during this period. In this case you should wait five minutes and then press the web browser refresh button to display the login page again.

There are a number of ways to start the SNMPc OnLine web console as described below.

1. Auto Start from SNMPc Console

A program named *online.exe* is added by the SNMPc OnLine installation to the **[Startup]** section of the *snmpc.ini* file at the server computer. The *online.exe* program will start the SNMPc OnLine web console whenever you login to the SNMPc Windows console. To disable auto start, edit *snmpc.ini* and remove the **ONLINE=online.exe** setting from the **[Startup]** section. To change automatic startup on the SNMPc server only, you can also use the **Launch SNMPc OnLine Browser with Console** setting on the **Config/Display** page.

2. Tools Menu Option in SNMPc Windows Console

A new menu named **SNMPc OnLine** is added by the SNMPc OnLine installation to the **Tools** menu of the SNMPc Windows console. Use this menu to open an SNMPc OnLine web console at any time while using SNMPc.

3. Manually Entered Web Browser URL

Launch a web browser and use one of the following URLs to start an SNMPc OnLine web console:

- Apache Server installed by SNMPc OnLine: ***http://<address>:8080/SNMPcOnline***
- Pre-existing Apache Server or Microsoft IIS: ***http://<address>/SNMPcOnline***

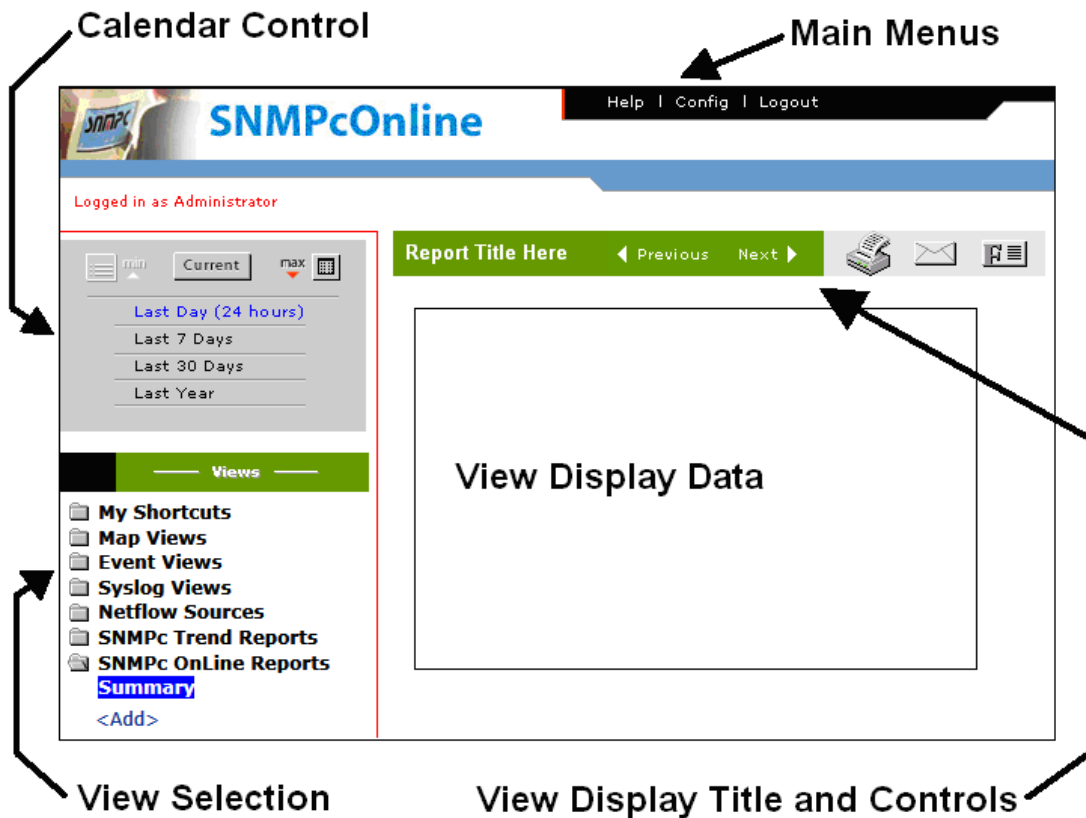
Replace **<address>** with the IP address of your SNMPc OnLine server computer, in dot notation. For example, *http://127.0.0.1:8080/SNMPcOnline*. Use this URL format in a Windows shortcut to start the SNMPc OnLine web console directly from your desktop.

4. Windows Start Menu

From the Windows **Start** menu select **Programs/SNMPc Network Manager** group. Use the **SNMPc OnLine** menu to start an SNMPc OnLine web console.

WEB Console Overview

The following diagram shows the SNMPc OnLine web console.



SNMPc data such as map topology, map drawings, event log entries, and trend statistics are shown in the *View Display Data* frame. This frame can display a variety of data formats including tables, graphs and custom dashboards. The remaining frames contain control tools that maintain a consistent format at all times. Settings in the control tools determine what is displayed in the *View Display Data* frame.

Main Menus

There are three global menus along the top right of the page. These menus are not related to a specific data display but rather affect global settings.

Use the **Help** menu to display a context sensitive help screen for the currently selected view.

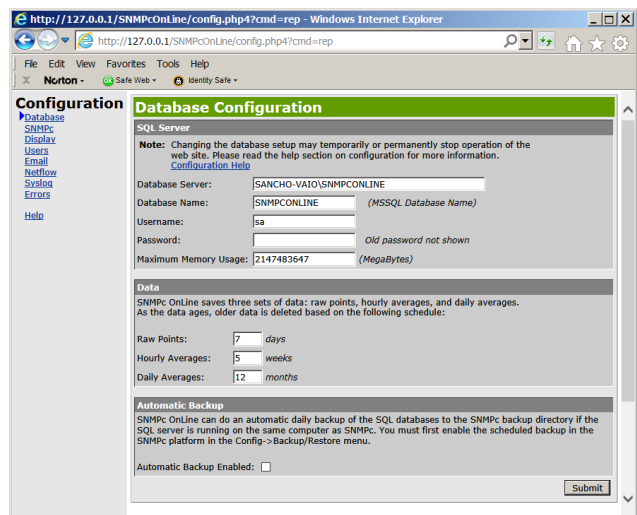
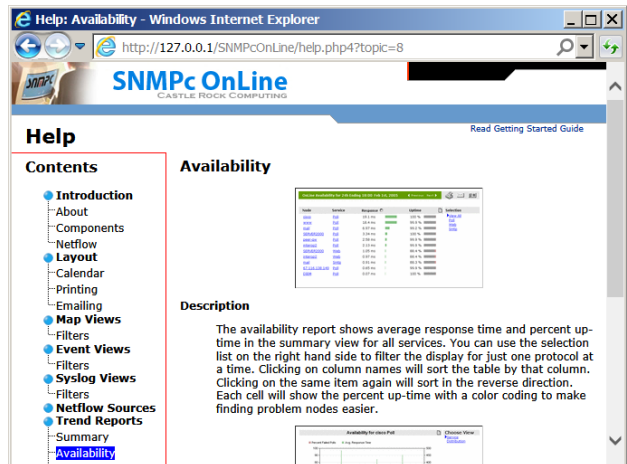
Use the selection tool at the left side of the Help screen to select another topic or subtopic. Help information for the selected topic is displayed at the right side of the Help screen.

Refer to the OnLine Help for detailed descriptions of the web console's elements.

Use the **Config** menu to change global settings for the web console. A popup configuration screen is displayed, containing several sub pages:

- Use the **Database** page to manage the Microsoft SQL database.
- Use the **SNMPc** page to manage the SNMPc Enterprise connection.
- Use the **Display** page to change the appearance and startup mode of the web console.
- Use the **Users** page to specify a default View and navigation restrictions for each SNMPc OnLine user.
- Use the **Email** page to edit scheduled email report settings.
- Use the **NetFlow** page to define probes, application port assignments and database sizes.
- Use the **Syslog** page to set configure reception and display of device Syslog messages.
- Use the **Errors** page to view any global errors related to the operation of SNMPc OnLine.

Use the **Logout** menu to close your SNMPc OnLine session. The login page displays to re-login.



Calendar Control

Use the Calendar Control to select the beginning and ending date and time of displayed data and also the granularity of the data (raw or condensed samples).

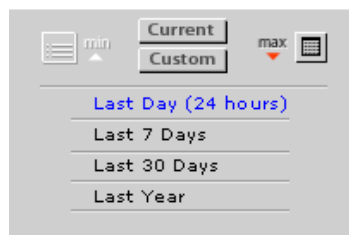
The calendar control has two modes, *Minimized* and *Maximized*, each described in the next two sections. Use the *Max* button to change to the *Maximized Calendar* mode and the *Min* button to change back to the *Minimized Calendar* mode.

It is important to understand how the calendar control works and interacts with the data displays. Zooming in to the minimum granularity level in a data graph or using the graph *Previous/Next* controls will automatically change the calendar control to the *Maximized* mode.

If you are not seeing the expected data in a display the first thing to check is that the calendar control is set appropriately. When in doubt, use the *Min* button and select **Last Day (24 Hours)**.

Minimized Calendar

Use the *Minimized* Calendar to select common reporting periods of day, week, month and year, based on the current date. This is the default mode displayed when you first use the web console. Use the *Min* button to show this mode.



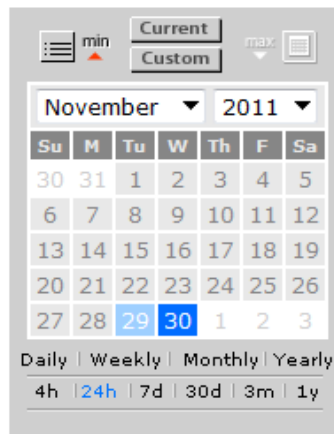
Maximized Calendar

Use the *Maximized* Calendar to select a specific date and more detailed time ranges.

Select one of the *named links* at the bottom of the frame to display common calendar periods (daily, weekly, monthly, yearly). These settings will always show the full calendar period. For example, the Weekly setting shows Sunday to Saturday. Use the month, year and date controls to select which week to display.

Select one of the *numbered links* at the bottom of the frame to display a fixed time period going back from the selected date. For example, select 24h (24 hours) and November 30, to display data for November 29 and 30.

Use the *Current* button to force the selected date to stay on the current day and also to show most recent values instead of averages.



Use the ***Custom*** button to select specific start and stop date and times.

View Selection Area

The View Selection Area includes a set of view groups. Each view name within a group is of the same general type. Select the group name to show a list of items in the group. Select one of the items in a group to display the associated view in the View Display Area at right.

Within each View Selection Area group, some view names are fixed, some are added by SNMPc, and some are customized dashboard or search views you can add. Use the command links at the end of the list of view names, delimited by '<' and '>' to access advanced features (e.g., <Add>).

Each of the View Selection Area groups is described further below.

My Shortcuts

The *My Shortcuts* group contains quick links to previously selected views of any type. This is a similar notion to Favorites links in a Web Browser. Shortcuts are particularly useful to show zoomed-in displays which normally would require traversal of several links in a report.

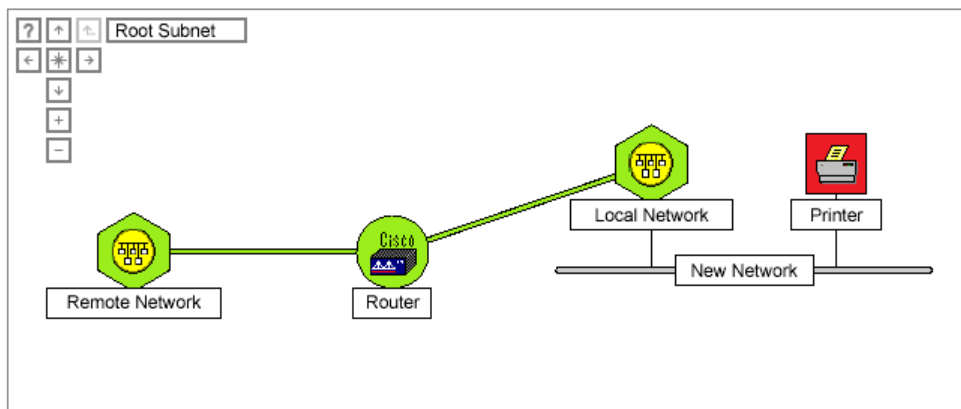
At any point during your SNMPc OnLine session use the <Add> link under *My Shortcuts* to add a shortcut to the currently displayed view. A dialog popup prompts for the shortcut name. Use the <Sort> link under *My Shortcuts* to rearrange the shortcuts list and to remove unwanted shortcuts.

Items in the *My Shortcuts* group are only visible to the user who created them. Each user has a different and unique set of *My Shortcuts* links.

Map Views

Use the *Map Views* group to show a graphical image (default) or list display of nodes in your SNMPc Map. This group contains one fixed view named *Map Tree*. Select *Map Tree* to show the top-level SNMPc map subnet.

An example graphical image display is shown below.



The top left corner of the graphical image display includes buttons to zoom and pan the view.

- Use the Up, Down, Left and Right arrows to pan the view. You can also pan the view by clicking and holding the mouse on an empty area and dragging the view.
- Use the central Star button to reset the zoom to the level at which the entire image is visible.
- Use the GoUp button (3rd from left) to go up one subnet layer. You can click on any subnet icon to show the child subnet view and on any network or device icon to show a device specific summary (see below for more information).

An example of a list map display is shown below.

Node	Status	Address	Group	Description
192.168.1	Normal	192.168.1.0	Unknown	
207.212.33	Normal	207.212.33.0	Unknown	
67.116.138.148	Normal	67.116.138.148	Unknown	
cisco	Normal	207.212.33.19	Unknown	Cisco Internetwork Operating System S...

- The icon at left indicates the entry type of device (circle) or subnet (folder) and shows the current status (i.e., color) of a device or the worst status of all devices under a subnet.
- Select a subnet name to drill down into the subnet. The table will show all subnets and devices residing under the selected subnet. Note that the current subnet name is also displayed in the **Subnet** pull-down. Select the relevant subnet name from this pull-down to go back up the topology tree.
- Select a device name to show more detailed information for the device.

Use the **Show Drawing** button at the right of the title bar to switch between graphical and list display styles. You can also select what type of display style to use by default with the **Show Map View as Image by Default** option in the **Config/Display** page.



Use the **<Add>** link in the Map Views group to search for specific nodes or to add custom map view names. This command is described further in the Custom Map Views section later in this document.

Event Views

Use the *Event Views* group to show a tabular display of event log entries. This group contains two fixed views named *Current Log* and *History Log*, which are analogous to the Current and History tabs in the SNMPc console event tool. Select *Current Log* to show active, unacknowledged, events or select *History Log* to show acknowledged and informational events. An example of a current log view is shown below.

Cur	Date/Time	Node	Event	
	12/16/04 17:09:20	Vaio	Smtip Service Up	
	12/16/04 17:09:11	Vaio	Device Responding to Poll	
	12/16/04 17:09:10	Vaio	Object Changed by Administrator at 192.168.1.7: Va...	
	12/16/04 17:08:48	mail	Device Responding to Poll	
	12/16/04 17:08:48	watchdog	Device Responding to Poll	
	12/16/04 17:08:48	207.212.33.138	Device Responding to Poll	
	12/16/04 17:08:48	crc	Device Responding to Poll	
	12/16/04 17:08:48	207.212.33.140	Device Responding to Poll	
	12/16/04 17:08:48	207.212.33.129	Device Responding to Poll	
	12/16/04 17:08:48	192.168.1.254	Device Responding to Poll	

When viewing acknowledged (History) events, note that the view only shows events within the selected calendar control time period. This is different than how SNMPc typically shows events. When viewing Current events the selected time period is ignored. The number of events shown in the scroll controls at upper right of the view represents the entire number of active events.

Use the *<Add>* link in the Event Views group to search for specific events or to add custom event view names. This command is described further in the *Custom Event Views* section later in the document.

Netflow Sources

The *Netflow Sources* group includes one entry for each router, switch or probe that is sending *Netflow/Sflow* data to SNMPc. Select any interface name under the source to show a protocol distribution report organized by device and by conversations between devices.

Use the *<Config>* link to set the UDP listening ports for Netflow/Sflow data and to name each source device. This command is described further in the *Configuring Netflow Reports* chapter later in this document.

Please refer to the *Netflow Sources Group* chapter of this document for more information about these reports.

Netflow Sources

- cisco2811
 - FastEthernet0/0
 - FastEthernet0/1**
- 192.168.254.7
 - [<config>](#)

SNMPc OnLine Reports

The *SNMPc OnLine Reports* group and all following groups are directly associated with SNMPc *Trend Report Groups*. Each of these groups contains one report *Summary* view, one or more user created *Dashboard* views, and one view for each corresponding SNMPc *Trend Report*.

The *SNMPc OnLine Reports* trend report group is created automatically by SNMPc OnLine if you enabled automatic report creation during the installation.

This group contains a fixed report *Summary* view, two custom *Dashboard* views for one router and one server system, and one *Report View* for each of the automatically generated trend reports.

Each of the automatic reports is associated with the SNMPc *OnLine Reports* Node Group. SNMPc OnLine will place up to 300 SNMPc objects into this group (100 routers/switches, 100 Windows systems, and 100 other SNMP devices).

Each of the fixed and automatically generated views is described in detail in the *SNMPc OnLine Reports Group* chapter of this document. At this stage just note that you can select each of these view names to see the associated summary, dashboard, or example built-in trend report style.

Use the *<Add>* command to add a new Dashboard view. This command is described in the *Custom Dashboard Views* section later in this document.

Each report in this group uses a built-in SNMPc OnLine trend report definition. These reports have highly formatted views that best convey the underlying management information.

Other Trend Report Groups

If you installed SNMPc OnLine over an existing SNMPc system you will see an additional group for each named trend report group that exists in SNMPc. Every time you add a trend report group to SNMPc, a new group is automatically added to SNMPc OnLine.

Each of the trend report groups contains one report *Summary* view, user created *Dashboard* views, and one view for each corresponding SNMPc *Trend Report*.

Use the *<Add>* command to add a new Dashboard view. This command is described further in the *Custom Dashboard Views* chapter later in this document.

Legacy trend reports in SNMPc use unformatted report styles. They will all be displayed in a generic fashion. Variable and instance names are taken from your SNMPc trend report settings.



View Display Area

The View Display Area is the main data viewing and configuration section of the SNMPc OnLine web console. This area includes a data frame, title, and various data controls. The different sections that make up the View Display Area are described in the following sections.

Data Frame

The Data Frame shows the selected data, for the selected time period, in one of several styles, including tables, graphs and custom *dashboard* views. Types of information displayed include map topology, event log entries, and trend report statistics.

SNMPc OnLine includes several *built-in trend report styles* that are specially formatted to highlight the information contained in the report. In some cases you can select from different sub views of the report from a list of names at the right side of the data display.

The following is an example data display for the *OnLine Availability* built-in trend report style. Note the list of *Selection* sub views at right.

Node	Service	Response	Uptime		Selection
interop2	Web	0.96 ms	88.3 %		View All
mail	Smtpt	0.91 ms	88.3 %		Poll
SERVER2000	Web	1.06 ms	88.5 %		Web
mail	Poll	4.59 ms █	99.2 %		Smtpt
interop2	Poll	1.10 ms	99.5 %		
www	Poll	19.5 ms █	99.8 %		
67.116.138.149	Poll	0.29 ms	99.9 %		
peer-qw	Poll	2.21 ms █	99.9 %		
SERVER2000	Poll	2.58 ms █	100 %		
DIEM	Poll	0.07 ms	100 %		
cisco	Poll	18.9 ms █	100 %		

Select any link in the data frame to zoom in to a more detailed view. In most cases this will zoom into a formatted graph but in some reports there is an intermediate information display from which you can choose different graph views.

Legacy SNMPc trend report styles do not include special formatting. These reports are displayed in the *Generic* table and graph styles. Please see the section on the *Formatted/Design* button below for more information.

In some situations it is possible to configure the included information or the layout of the data frame. Use the *Formatted/Design* button to switch between the viewing (Formatted) display and configuration (Design) display. Each of the different configuration mechanisms is described in separate sections of this document.

Title and Time Selection

The title frame above the data frame shows the name of the displayed data or report and the time period included in the display. The described time period corresponds to the selection in the Calendar Control.

Summary for 24h Ending 14:00 December 16th, 2004

◀ Previous Next ▶

Use the *Previous* and *Next* links to change the displayed time period. The amount of change depends on what you have selected in the calendar control (day, week, etc.).

Note that the calendar control will always change to the *Maximized* mode when you use the *Previous* or *Next* buttons. This means that the calendar time period is not changed back when you select another report. If the displayed data doesn't look right, always check the calendar control and use the *Min* button to get back to the *Minimized* mode.

Print Button

Use the Print button to print the view display data. A formatted screen is displayed ready for printing, with any control elements removed.



Email Button

Use the Email button to immediately send the view display data to an email address or to schedule the report view to be automatically emailed on a daily, weekly or monthly basis.



Formatted/Design Button

Use the *Formatted/Design* button to switch between the Formatted and Design display styles for the currently displayed view. This button is context sensitive and behaves differently for each view type, as indicated in the table below.



View Type	Formatted Style	Design Style
Map	Map Table or Graphic Image	Map Table with Search Bar
Event/Syslog	Event Table	Event Table with Search Bar
Built-in Report	Formatted Display	Generic Display
Legacy Report	Generic Display	Generic Display
Custom Dashboard	Dashboard Display	Dashboard Setup
Report Summary	Summary Display	Summary Setup

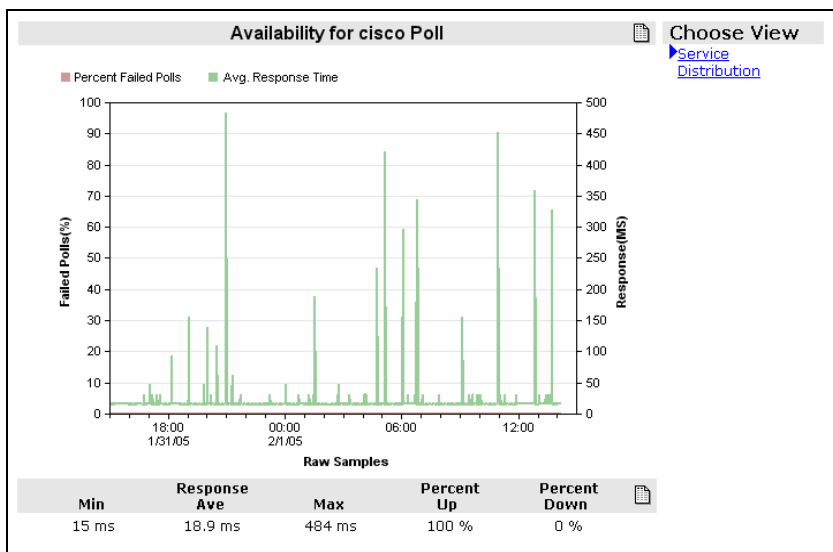
Most of the Design styles include configuration or search mechanisms. Each of these mechanisms is further described in separate sections of this document.

The following is a **Generic** view of the built-in **OnLine Availability** report shown earlier in the Data Frame section. Use the **Formatted/Design** button to switch between these two styles.

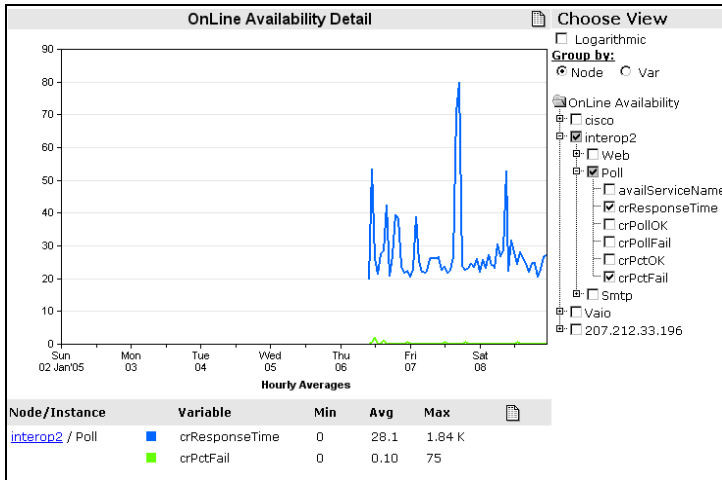
Node	Instance	crResponseTime	crPollOK	crPollFail	crPctOK	crPctFail
207.212.33.196	Poll	20	0.03	0	100	0
cisco	Poll	40	0.03	0	100	0
cisco	Smtpt	9.00	0.01	0	100	0
interop2	Poll	21	0.03	0	100	0
interop2	Smtpt	11	0.01	0	100	0
interop2	Web	27	0.01	0	100	0
Vaio	Poll	0	0	0.1	0	100
Vaio	Smtpt	0	0	0	0	0

Note that all data columns are shown in this generic view versus combined or selected columns. The generic view does not have a list of sub view names or other graphic elements and the column names come straight from the underlying MIB instead of being converted to more meaningful names. Legacy SNMPc trend reports will all have this generic display style.

When you zoom in to a graph view in a formatted report style, the graph will show only the most useful information and the various axis and legends will be appropriately labeled. The following is an example zoomed-in graph view for the **OnLine Availability** report style.



Use the **Formatted/Design** button to change the graph to the generic style, which includes a selection tool at right to specify which nodes, variables and instances are included in the graph. The following is an example of a generic graph view.



Legacy SNMPc trend report graphs always use the generic graph style.

Show Drawing Button

Use the Show Drawing Button to toggle between List display and Graphical Image display for a Map View. This button is only shown for Map Views that represent an SNMPc Subnet view (i.e., not a search view) or custom map views that have an associated Visio Map Drawing. Please see the Custom Map Views section for more information.



Spreadsheet Export Button

All of the graphic elements shown in the Data Frame including tables, graphs and graph legends include a **Spreadsheet Export** button. Use this button to export the displayed data into a spreadsheet program such as Microsoft Excel.



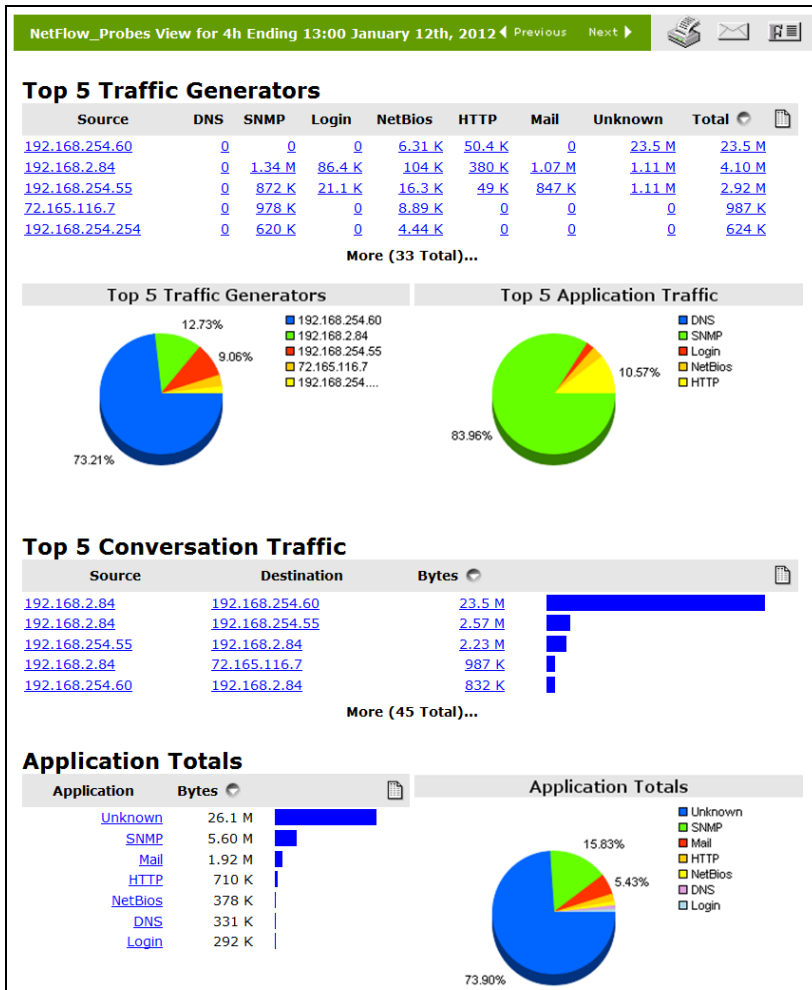
The following is an example spreadsheet export.

	A	B	C	D
	Node	Service	Response	Uptime
1				
2	Vaio	Poll	0 ms	0%
3	Vaio	Smtip	0 ms	0%
4	207.212.33.196	Poll	20 ms	100%
5	interop2	Smtip	11 ms	100%
6	interop2	Poll	21 ms	100%
7	cisco	Smtip	9.00 ms	100%
8	interop2	Web	27 ms	100%
9	cisco	Poll	40 ms	100%

Netflow Sources Group

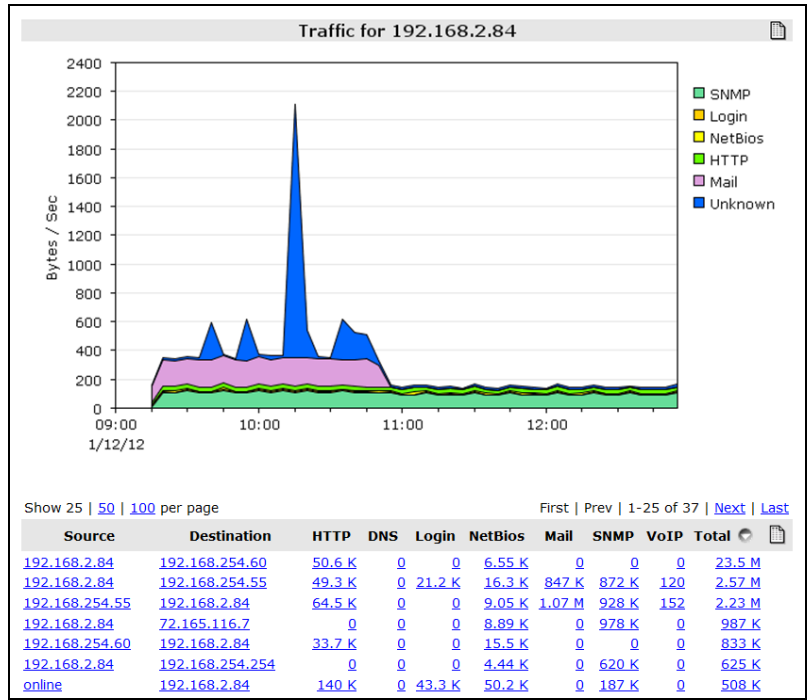
The *Netflow Sources* group includes a set of *Netflow/Sflow* protocol distribution reports organized by device and conversations between devices. Each entry in this group represents a single router, switch or probe that has been configured to send *Netflow/Sflow* data to SNMPC, also known as a *Flow Source* or *Probe*.

Select any interface name under a Flow Source to show a dashboard view with summarized data for *Top 5 Traffic Generators*, *Top 5 Conversations*, *Application Totals* and *Interface Totals*. The following is an example summary dashboard view:



Use the *More (nn Total)...* link below a table to expand the table to all contents. In the case of the *Application Totals* table this expanded view also shows unknown applications by TCP/UDP number.

Select any highlighted field to show a detail report view including an application traffic graph at the top of the view and an application traffic table at the bottom of the view. The following is a sample detail report view.



The application traffic graph displays either a single application or a combination of all applications depending on the statistic value you selected (application or total). Within the detail view select one of the application column titles or the Totals title to change what is displayed in the graph.

From any detail report view select a highlighted field to drill down into a more filtered detail view. Depending on the context of the field you selected, the detailed view shows data for all devices, for all conversations of a specific device, or for all conversations between two specific devices.

The following table shows the traversal possibilities between report views styles:

View Style	Level	Select	Detail
Application Totals	Summary	Protocol Name	Traffic Generators
Traffic Generators	Summary, Detail	Device or Count	Device Conversations
Device Conversations	Detail	Device or Count	Peer Conversations
Conversation Traffic	Summary, Detail	Device	Device Conversations
Conversation Traffic	Summary, Detail	Count	Peer Conversations

Use the **<Config>** command in the Traffic Flow Reports group to set the UDP ports that SNMPc uses to listen for *Netflow/Sflow* data and to edit Flow Source and application protocol names.

SNMPc OnLine Reports Group

Introduction

The *SNMPc OnLine Reports* trend report group is created automatically by SNMPc OnLine if you enabled automatic report creation during the installation. The rest of this chapter briefly describes the automatically created reports.

This group contains a fixed report *Summary* view, two custom *Dashboard* views for one router and one server system, and one *Report View* for each of the automatically generated SNMPc trend reports. Each of the automatic reports contains a small number of devices and is for demonstration purposes only. Each of the automatic reports is associated with the SNMPc *OnLine Reports* Node Group. SNMPc OnLine will place up to 300 SNMPc objects into this group (100 routers/switches, 100 Windows systems, and 100 other SNMP devices).

Availability Report

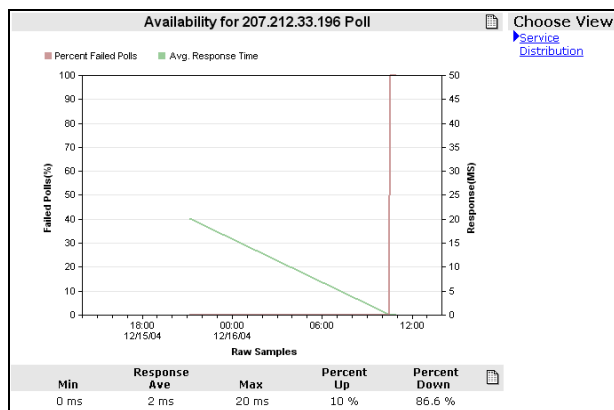
The Availability Report shows response time and percent uptime for regular SNMPc polling (ICMP or SNMP) and configured TCP poll services. Use the Selection list at right to display all information or just for a specific service. The following is an example top level Availability Report view.

Node	Service	Response	Uptime	Selection
cisco	Smtp	0.9 ms █	6.66 % █	View All
Vaio	Smtp	0.79 ms █	6.89 % █	Poll
207.212.33.196	Poll	2 ms █	10 % █	Smtp
interop2	Smtp	1.03 ms █	10 % █	Web
interop2	Poll	2 ms █	10 % █	
cisco	Poll	6.36 ms █	10 % █	
interop2	Web	2.43 ms █	10 % █	
Vaio	Poll	0 ms █	10.3 % █	

Select a link from the *Service* column to show a zoomed-in graph view.

Choose one of two views from the selection at right of the graph display. The *Service* view shows a line graph of *Failed Polls %* and *Response Time (ms)*.

The *Distribution* view shows a bar graph of response time distribution.



Interface Reports

There are two interface reports based on Percent Utilization and Bandwidth Usage (BPS). In some cases it may not be possible to calculate Percent Utilization because the line speed is not available or because it varies (e.g., in virtual circuits). In these cases the BPS report is more useful.

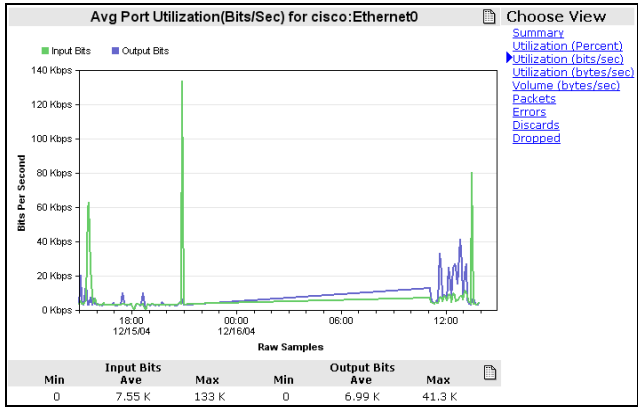
The following is an example of the BPS Usage report.

Node	Interface	Input Usage	Output Usage	Dropped
cisco	Serial0	6.63 K bps	7.11 K bps	<0.001 %
cisco	Ethernet0	7.96 K bps	7.27 K bps	<0.001 %
207.212.33.196	3Com 3C90x Ethernet ...	660 bps	334 bps	0 %
207.212.33.196	MS TCP Loopback inte...	0 bps	0 bps	0 %
Vaio	NETGEAR WAG511 802.1...	1.36 K bps	1.17 K bps	0 %
Vaio	Intel(R) PRO/100 VE ...	0 bps	0 bps	0 %
Vaio	MS TCP Loopback inte...	33 K bps	33 K bps	0 %
interop2	Intel(R) PRO/100 VE ...	2.19 K bps	2.44 K bps	0 %
cisco	Serial1	0 bps	0 bps	0 %
cisco	Null0	0 bps	0 bps	0 %
interop2	MS TCP Loopback inte...	19.8 K bps	19.8 K bps	0 %

Select a name from the Interface column to view detailed port information, as shown below.

Device	cisco		Choose View Summary Utilization (Percent) Utilization (bits/sec) Utilization (bytes/sec) Volume (bytes/sec) Packets Errors Discards Dropped
IP Address	207.212.33.19		
Interface Name	Ethernet0		
Current Admin Status	Up		
Current Oper Status	Up		
Percent Uptime	100 %		
Link Speed	10 M bps		
	Input	Output	
Average Utilization	0.07 %	0.07 %	
Peak Utilization	1.33 %	0.58 %	
Packets per Second	2.36 Kpps	1.78 Kpps	
Average Packet Size	126 bytes	152 bytes	
Errors	59	0	
Discards	0	0	
Total Dropped Packets	0.02 %	0 %	

Select one of the views from the list at right of the port detail page. These views show various port metrics as line or bar graphs. The following is an example graph for Usage BPS.



Move the mouse over the graph and click on any interesting area. The graph will zoom in to the next more detailed time period. Note that when you do this the calendar control will change from the *Minimized* to *Maximized* mode.

Use the *Previous* and *Next* links in the *Display Area Title Bar* to move the time period backwards or forwards. Again, note that the calendar control changes to match the new selected time period.

You can always use the browser *Back* and *Forward* buttons to get back to your starting point. Or use the Calendar *Min* button and the *Last Day (24 Hours)* link to get back to the current time.

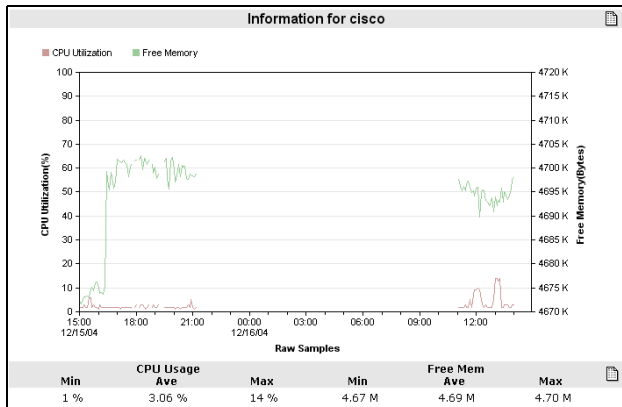
Cisco Router Report

The Cisco Router Report shows CPU and Memory usage statistics and some other basic system information. The following is an example Cisco Router Report.

Node	CPU	Free Mem	IOS	Image	Time Since Last Boot
cisco	3.06 %	4.69 M	12.2(16a)	flash:/c2500-i-l.122-16a.bin	258 days 00:30:20


Select one of the links under the *CPU* or *Free Mem* columns to show a zoomed-in graph of both variables.

Click on the graph to zoom in further and use the calendar and title bar *Previous/Next* links to change the time period.



Server CPU Report

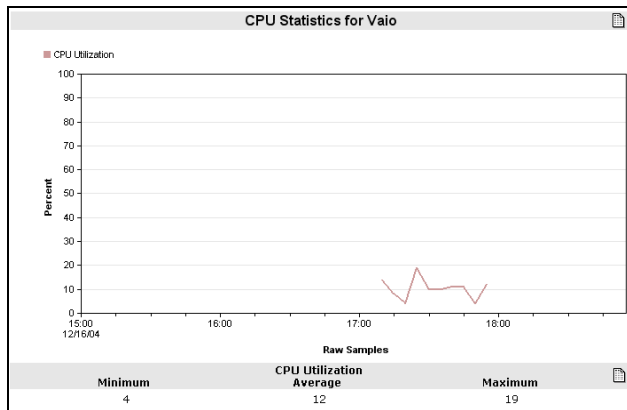
The Server CPU Report contains information gathered from Microsoft servers which have the Microsoft SNMP agent installed and running. The Server report shows the CPU usage for each processor on the system. The following is an example Server CPU Report.

Node	CPU	Usage
Vaio	3	12 % 
interop2	2	0 %

Note that this report style and the **Server Disk Report** will also work with any device that supports the standard **SNMP Host MIB**.

Select one of the labels under the CPU column to show a zoomed-graph of CPU usage.
















Click on the graph to zoom in further and use the calendar and title bar *Previous/Next* links to change the time period.



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Server Disk Report

The Server Disk Report contains information gathered from Microsoft servers which have the Microsoft SNMP agent installed and running. The Server Disk report shows the information about mounted drives including the name, type, size and amount of free space. The following is an example Server Disk Report. Select one of the drive names to show a graph of free space for that drive.

Node	Drive	Disk Type	Size	Free	
interop2	A:\	Removable	0	0	
interop2	C:\ Label: Serial N...	Fixed	36.6 G	7.39 G	
interop2	D:\	Removable	0	0	
interop2	E:\	CD-ROM	0	0	
interop2	F:\ Label: Backup Se...	Fixed	81.9 G	38.8 G	
interop2	G:\	CD-ROM	0	0	
interop2	H:\	Removable	0	0	
interop2	I:\	Removable	0	0	
interop2	J:\	Removable	0	0	
Vaio	C:\ Label: Serial N...	Fixed	15 G	4.80 G	
Vaio	D:\ Label: Serial N...	Fixed	25 G	12.5 G	
Vaio	E:\ Label: HotBurn De...	CD-ROM	599 M	0	
Vaio	F:\	Removable	0	0	
Vaio	Virtual Memory	Virtual	1.31 G	1.31 G	

Report Summaries

SNMPc OnLine provides two types of Summaries views, **Report** and **Node**. Use the **Summary** view name under a report group to show a **Report Group Summary** for all reports in that group. From any displayed view, select a **Node Name Link** to show a **Node Summary** for that node.

Report Group Summary

The **Report Group Summary** view shows a top-N display of all built-in reports in the SNMPc OnLine Reports group. This is a fixed report that exists under all trend report groups. The following is a partial display of an example Summary report.

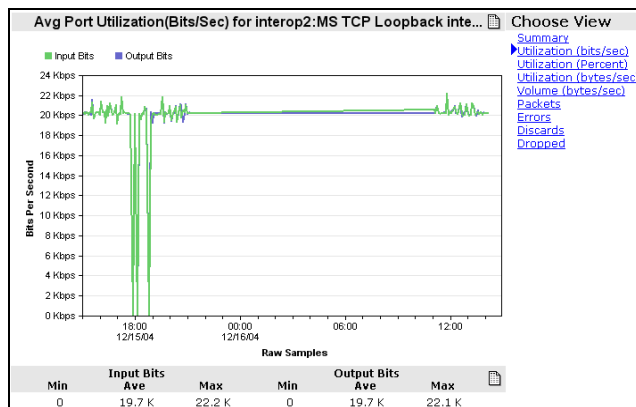
Top 5 Availability Response				Top 5 Interface Input Percent			
Node	Instance	Resp. Time		Node	Instance	Input Util	
cisco	Poll	6.36 ms	<div style="width: 100%;"></div>	cisco	Serial0	0.40 %	<div style="width: 100%;"></div>
interop2	Web	2.43 ms	<div style="width: 100%;"></div>	Vaio	MS TCP Loopb...	0.34 %	<div style="width: 100%;"></div>
207.212.33.196	Poll	2 ms	<div style="width: 100%;"></div>	interop2	MS TCP Loopb...	0.19 %	<div style="width: 100%;"></div>
interop2	Poll	2 ms	<div style="width: 100%;"></div>	cisco	Ethernet0	0.07 %	<div style="width: 100%;"></div>
interop2	Smtp	1.03 ms	<div style="width: 100%;"></div>	Vaio	NETGEAR WAG5...	0 %	<div style="width: 100%;"></div>

Top 5 Availability				Top 5 Interface Output Percent			
Node	Instance	Downtime		Node	Instance	Output Util	
207.212.33.196	Poll	86.6 %	<div style="width: 100%;"></div>	cisco	Serial0	0.43 %	<div style="width: 100%;"></div>
cisco	Poll	86.6 %	<div style="width: 100%;"></div>	Vaio	MS TCP Loopb...	0.34 %	<div style="width: 100%;"></div>
interop2	Poll	86.6 %	<div style="width: 100%;"></div>	interop2	MS TCP Loopb...	0.19 %	<div style="width: 100%;"></div>
Vaio	Poll	86.2 %	<div style="width: 100%;"></div>	cisco	Ethernet0	0.06 %	<div style="width: 100%;"></div>
Vaio	Smtp	0 %	<div style="width: 100%;"></div>	Vaio	NETGEAR WAG5...	0.01 %	<div style="width: 100%;"></div>

Each report is represented by a **mini report view** that includes the device name, table instance name, one statistic column and a bar graphic representing the statistic value. There are several mini views available for each of the related trend reports, representing the different statistic variables in each report.

Select any instance or statistic value to show a zoomed-in graph view. A formatted graph will be shown for the associated built-in report.

The example at right shows an Interface Report graph, which would be shown if you select any of the Top-N Interface mini-view links.



Use the **Formatted/Design** button to show the configuration screen for the Summary view.

Use the **Mini View** pull-down lists to select which report mini-views you want included in the summary.

Use the **Top N** pull-down lists to select how many entries to show in each mini-view.

Select a view name from the **Subnet View** or **Map View** lists to optionally optionally show a graphical map display above the summaries.

Press the **Save as Default** button to save your changes. Press the **Formatted/Design** button to view the summary selection without saving.

Subnet View

Root Subnet ▾

Map View

- None - ▾

Summary Selection

Availability Response ▾	Top N: 5 ▾
Availability ▾	Top N: 5 ▾
Quality of Service ▾	Top N: 5 ▾
Interface Input Percent ▾	Top N: 5 ▾
Interface Output Percent ▾	Top N: 5 ▾
Interface Dropped Packets ▾	Top N: 5 ▾
Server CPU ▾	Top N: 5 ▾
Server Disk ▾	Top N: 5 ▾
Cisco CPU ▾	Top N: 5 ▾
Cisco Memory ▾	Top N: 5 ▾

Save as Default

Node Summary

Select any **Node Name Link** in any view (map, event, trend report) to show a report summary for that node. The **Node Summary** view includes some basic information about the node, two dials showing poll response and CPU usage (for Server and Cisco systems), a summary of each trend report for the node, and a display of active events for the node. The following is an example Node Summary view.

<p>Node: 207.212.33.196 Address: 207.212.33.196 Status: ● Normal Response: 10.000% Description: Hardware: x86 Family 6 Model 3 Stepping 4 AT/JAT COMPATIBLE - Software: Windows NT Version 4.0 (Build Number: 1381 Uniprocesso Group: Unknown Subnet: 207.212.33</p>	<p>Response Time(MS)</p> <p>6.367 Milliseconds Average</p>	<p>CPU Usage</p> <p>3.046 Percent Average</p>												
<p>OnLine Availability</p> <table border="1" style="width: 100%; border-collapse: collapse;"> <thead> <tr> <th>Service</th> <th>Response</th> <th>Uptime</th> </tr> </thead> <tbody> <tr> <td>Poll</td> <td>2 ms <div style="width: 100%; height: 10px; background-color: green;"></div></td> <td>10 % <div style="width: 10%; height: 10px; background-color: red;"></div></td> </tr> </tbody> </table>			Service	Response	Uptime	Poll	2 ms <div style="width: 100%; height: 10px; background-color: green;"></div>	10 % <div style="width: 10%; height: 10px; background-color: red;"></div>						
Service	Response	Uptime												
Poll	2 ms <div style="width: 100%; height: 10px; background-color: green;"></div>	10 % <div style="width: 10%; height: 10px; background-color: red;"></div>												
<p>OnLine Interface BPS</p> <table border="1" style="width: 100%; border-collapse: collapse;"> <thead> <tr> <th>Interface</th> <th>Input Usage</th> <th>Output Usage</th> <th>Dropped</th> </tr> </thead> <tbody> <tr> <td>3Com 3C90x Ethernet ...</td> <td>658 bps <div style="width: 100%; height: 10px; background-color: green;"></div></td> <td>327 bps <div style="width: 100%; height: 10px; background-color: blue;"></div></td> <td>0 %</td> </tr> <tr> <td>MS TCP Loopback inte...</td> <td>0 bps</td> <td>0 bps</td> <td>0 %</td> </tr> </tbody> </table>			Interface	Input Usage	Output Usage	Dropped	3Com 3C90x Ethernet ...	658 bps <div style="width: 100%; height: 10px; background-color: green;"></div>	327 bps <div style="width: 100%; height: 10px; background-color: blue;"></div>	0 %	MS TCP Loopback inte...	0 bps	0 bps	0 %
Interface	Input Usage	Output Usage	Dropped											
3Com 3C90x Ethernet ...	658 bps <div style="width: 100%; height: 10px; background-color: green;"></div>	327 bps <div style="width: 100%; height: 10px; background-color: blue;"></div>	0 %											
MS TCP Loopback inte...	0 bps	0 bps	0 %											
<p>OnLine Interface Util(%)</p> <table border="1" style="width: 100%; border-collapse: collapse;"> <thead> <tr> <th>Interface</th> <th>Input Util</th> <th>Output Util</th> <th>Dropped</th> </tr> </thead> <tbody> <tr> <td>3Com 3C90x Ethernet ...</td> <td><0.001 % <div style="width: 100%; height: 10px; background-color: green;"></div></td> <td><0.001 % <div style="width: 100%; height: 10px; background-color: blue;"></div></td> <td>0 %</td> </tr> <tr> <td>MS TCP Loopback inte...</td> <td>0 %</td> <td>0 %</td> <td>0 %</td> </tr> </tbody> </table>			Interface	Input Util	Output Util	Dropped	3Com 3C90x Ethernet ...	<0.001 % <div style="width: 100%; height: 10px; background-color: green;"></div>	<0.001 % <div style="width: 100%; height: 10px; background-color: blue;"></div>	0 %	MS TCP Loopback inte...	0 %	0 %	0 %
Interface	Input Util	Output Util	Dropped											
3Com 3C90x Ethernet ...	<0.001 % <div style="width: 100%; height: 10px; background-color: green;"></div>	<0.001 % <div style="width: 100%; height: 10px; background-color: blue;"></div>	0 %											
MS TCP Loopback inte...	0 %	0 %	0 %											
<p>Current Events</p> <table border="1" style="width: 100%; border-collapse: collapse;"> <thead> <tr> <th>Cur Date/Time</th> <th>Node</th> <th>Event</th> </tr> </thead> <tbody> <tr style="background-color: #e0ffe0;"> <td>12/16/04 10:59:28</td> <td>207.212.33.196</td> <td>Device Responding to Poll</td> </tr> </tbody> </table> <p style="text-align: center;">Search...</p>			Cur Date/Time	Node	Event	12/16/04 10:59:28	207.212.33.196	Device Responding to Poll						
Cur Date/Time	Node	Event												
12/16/04 10:59:28	207.212.33.196	Device Responding to Poll												

Select any active link in this view to display the associated full view. The node summary is a particularly useful view to use as a shortcut, whereby you can create a list of quick links for your most important nodes.

Router and Server Dashboards

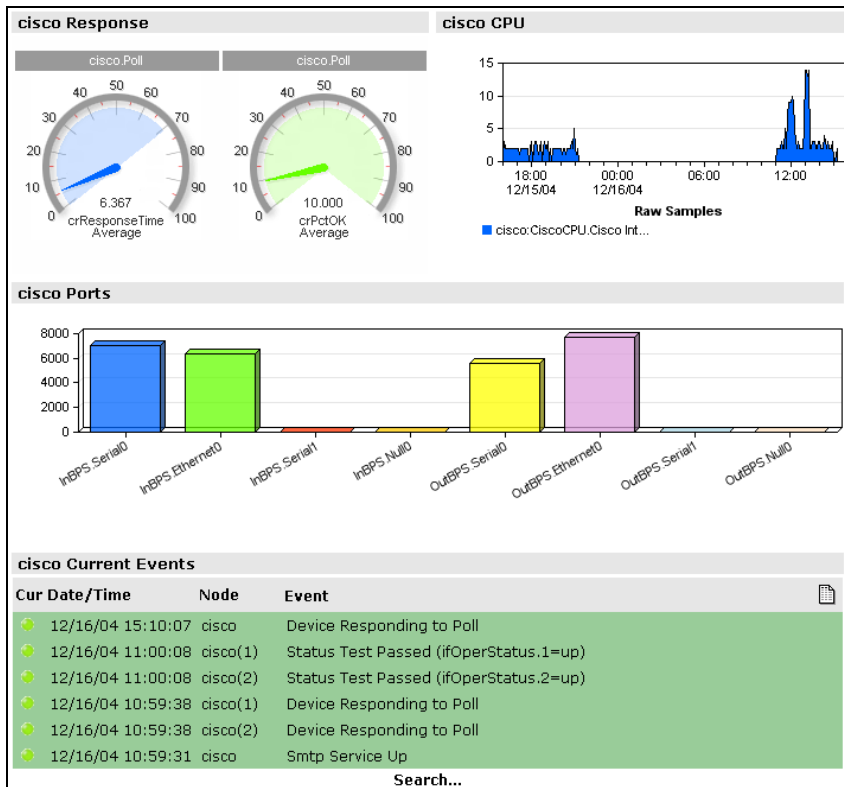
Introduction

Dashboard Views include a customizable collection of **Mini-Views** of map, event, and trend report views. Dashboard views can be added to any trend report group (*SNMPC Trend Reports* and below) and are shown in *italics* immediately beneath the report group **Summary** link.

SNMPC OnLine creates two example dashboards, one for a Cisco Router and one for a Microsoft Server. If you do not have devices of one or both of these types then these dashboards will not be created. Note that these dashboards are for demonstration purposes only. You must manually create any other dashboards, as described in the **Custom Dashboard Views** section later in this document.

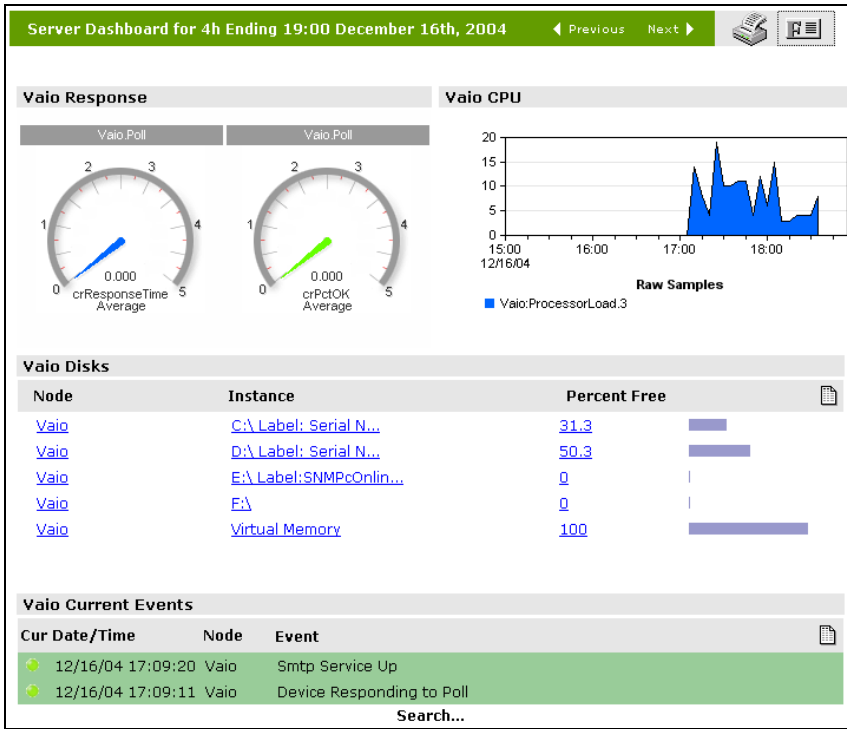
Router Dashboard

The **Router Dashboard** includes a selection of useful views for a Cisco router. At the top are two dials showing **Response Time** and **Percent Uptime**, followed by an area graph of **CPU usage**. In the center is a bar graph for **Interface BPS Usage** and at the end is a **Current Event View** for the router. The following shows an example of the Router Dashboard.



Server Dashboard

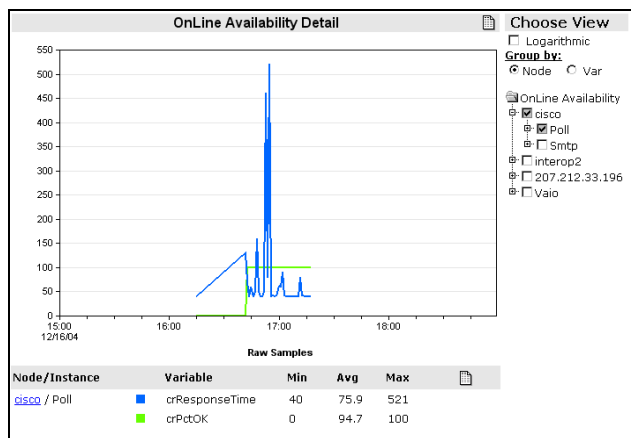
The *Server Dashboard* includes a selection of useful views for a Microsoft server. At the top are two dials showing *Response Time* and *Percent Uptime*, followed by an area graph of *CPU usage*. In the center is a table of disk drive *Percent Free Space* and at the end is a *Current Event View* for the server. The following shows an example of the Server Dashboard.



Click on any link or graph in a dashboard mini-view to show an expanded view.

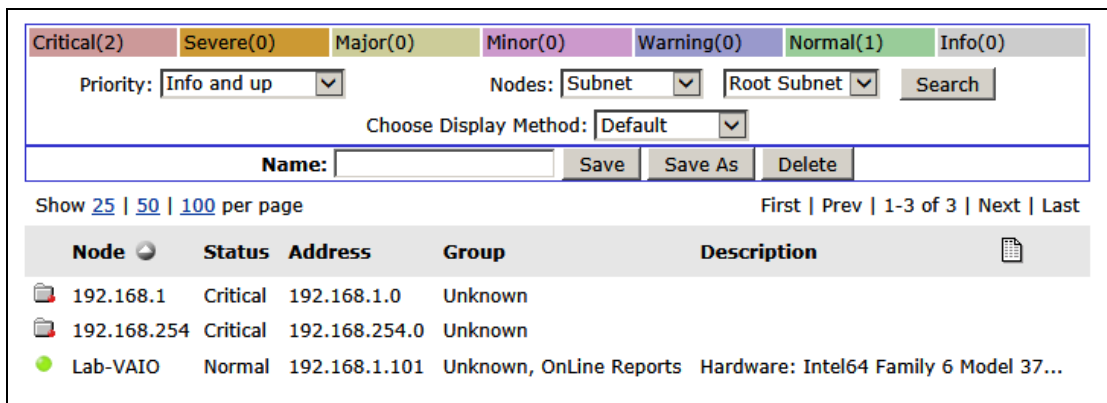
Dashboard mini-views only work with specific variables and instances so there is no direct connection to a formatted built-in report. Therefore the expanded graph view is always shown in the generic style.

The image at right shows an example expanded view for the *Response Time* dial.



Custom Map Views

Use the *<Add>* link in the *Map Views* group to show an advanced map search dialog. From this dialog you can specify various search criteria to show a map view that matches your requirements. For example, you can display nodes that have active critical events, nodes that match a name pattern string, or nodes contained in a particular subnet or node group.



Node	Status	Address	Group	Description
192.168.1	Critical	192.168.1.0	Unknown	
192.168.254	Critical	192.168.254.0	Unknown	
Lab-VAIO	Normal	192.168.1.101	Unknown, OnLine Reports	Hardware: Intel64 Family 6 Model 37...

The row of colored rectangles at the top shows the different event priorities and how many active events of each type exist. Beneath are two pull-down lists for event priority and node match criteria.

Depending on which node match style you select another pull-down or text box will be displayed to let you enter additional matching criteria. For names you can use the asterisk (*) character as a wildcard.

Selecting from a pull-down list will perform the search automatically. If you are entering text in an edit box, press the *Search* button to start the search. Use the browser *Back* button to return to the search dialog and make further changes. Alternatively, use the *Formatted/Design* button to switch between the search results and search dialog.

Select the *Graphic* style from the *Choose Display Method* list to show a Graphical Image (i.e., SNMPc Map Window) display versus the default List display style.

Enter a name in the *Name* edit box and press the *Save* button to save your search for future use. The custom view names are shown in *italics* in the Map Views group.

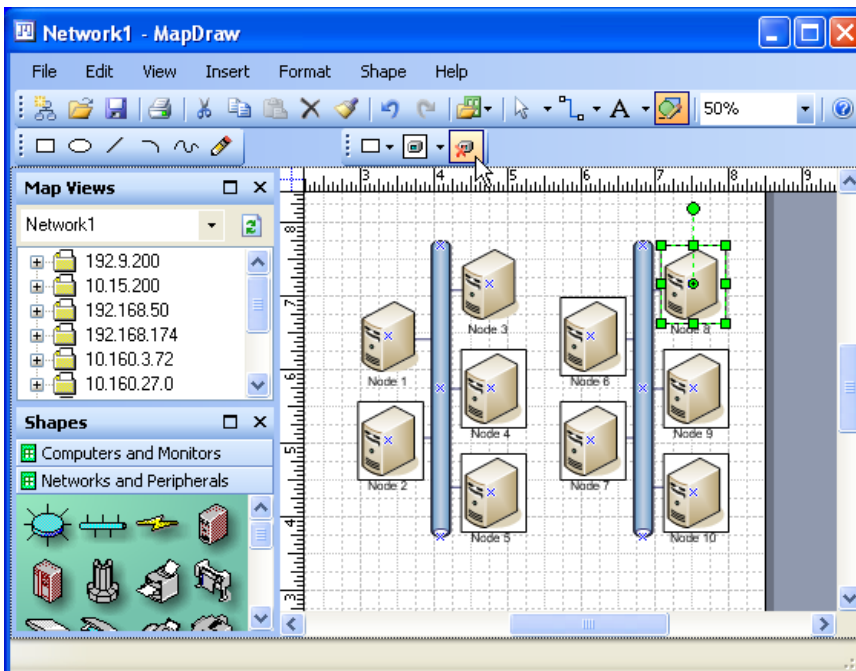
To edit a custom map view, first display the view and then use the *Formatted/Design* button to show the search dialog for that view. Make your changes and press *Save*. Or press the *Delete* button to remove the custom view.

Adding a Visio Drawing to a Map View

After creating a Map View, use the **MapDraw** tool to associate it with a Visio graphic image. Unlike the main SNMPc OnLine web interface, MapDraw is a Windows application that you can only run on the computer where your web server is running and SNMPc OnLine is installed.

- From the SNMPc Console running at the server system, use the **Tools/MapDraw** menu to run the MapDraw tool.
- Select the name of a Map View from the **Map Views** drop-down list to create an empty drawing on the workspace.
- Use the **File/Import** menu to import an existing Visio drawing. Alternatively, drag symbols from the Shapes area at left onto the workspace.
- To associate an icon in the workspace with an SNMPc node, simply drag the SNMPc node name onto a shape to associate the node with the shape.

The following shows a Map View drawing named Network1 being created in MapDraw.



When you are done, use the **File/Save** menu to save the Map View drawing. This drawing will be associated with the Map View that you originally selected and can now be displayed in the SNMPc OnLine web interface.

Displaying a Visio Map View Drawing

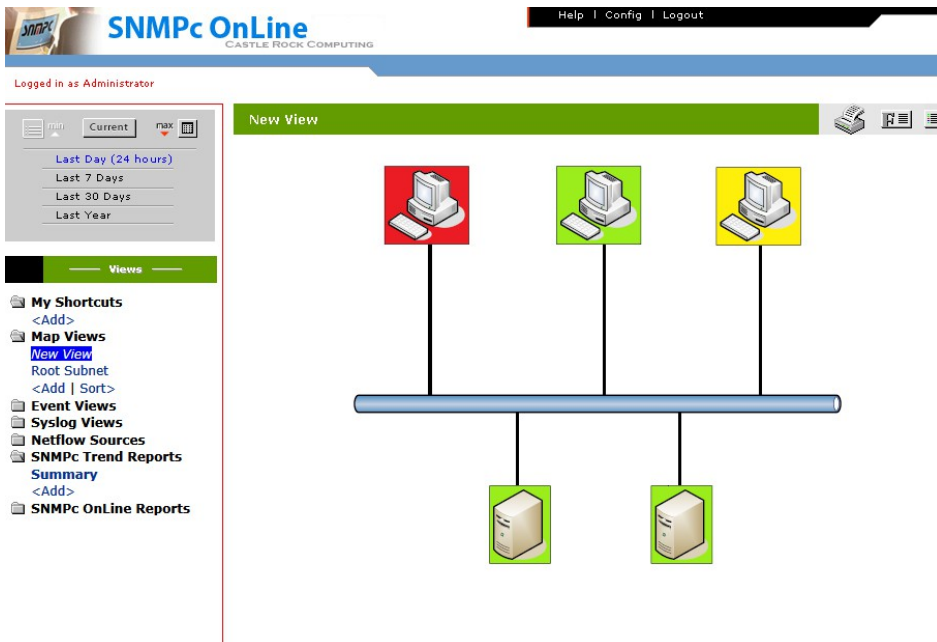
From the **Map Views** group, select the Map View name for which you have created a Visio Map Drawing. At the far right of the **View Display Title and Controls** bar you see the **Show Drawing** button.



will

The Show Drawing button is only shown for Map Views that represent an SNMPc Subnet view or those that have an associated Visio Map Drawing. Use the Show Drawing button to toggle between the List Display style and the Graphical Image Display style.

The following shows an example Visio Map Drawing display:



You can also configure a Map View to show the associated Visio Drawing by default. Use the **Formatted/Design** button to show the search dialog. Select **Graphic** from the **Choose Display Method** pulldown list. Press the **Save** button to save the new setting. Now when you select a Map View name the Visio drawing will be displayed instead of the list/tree format.

Since custom dashboards can include a Map View frame, it is possible to create a customized page that includes a Visio Map Drawing and other SNMPc OnLine elements such as graphs, charts, data tables, and event log views.

Custom Event Views

Use the **<Add>** link in the **Event Views** group to show an advanced event log search dialog. From this dialog you can specify various search criteria to show an event view that matches your requirements. For example, you can display events for nodes that have active critical events, for nodes that match a name pattern string, or for nodes contained in a particular trend report or node group.

The following shows the Event Search selection dialog.

Cur	Date/Time	Node	Message
●	01/22/14 10:32:11	castlerock	Device Responding to Poll
●	01/22/14 10:32:11	Lab-VAIO(21)	Device Responding to Poll
●	01/22/14 10:32:11	MF8500C-Series	Device Responding to Poll
●	01/22/14 10:32:11	192.168.254.6	Device Responding to Poll
●	01/22/14 10:32:11	192.168.254.250	Device Responding to Poll
●	01/22/14 10:32:11	192.168.1.5	Device Responding to Poll

The row of colored rectangles at the top shows the different event priorities and how many active events of each type exist. Use the pull-down lists and edit boxes below to specify your event matching criteria.

Use the **Summary** checkbox to display an event summary instead of a list of events. The event summary shows each event type once with a count of duplicate events in a new column at left.

Press the **Search** button to display the results of your match criteria. You can use the browser **Back** button to return to the search dialog and make further changes. Alternatively, use the **Formatted/Design** button to switch between the search results and search dialog.

Enter a name in the **Name** edit box and press the **Save** button to save your search for future use. The custom view names are shown in **italics** in the Map Views group.

To edit a custom event view, first display the view and then use the **Formatted/Design** button to show the search dialog for that view. Make your changes and press **Save**. Or press the **Delete** button to remove the custom view.

Custom Dashboard Views

Dashboard Views include a customizable collection of **Mini-Views** of a Map View (Tree or Drawing), Event Views, and Trend Report Views. Dashboard views can be added to any trend report group (i.e., *SNMPc Trend Reports* and below) and are shown in **italics** immediately beneath the report group **Summary** link.

- To **Create** a new dashboard, use the **<Add>** link at the end of any trend report group.
- To **Edit** an existing dashboard, first select a dashboard view name such as the **Router** or **Server** dashboards in the **SNMPc OnLine Reports** group. Then use the **Formatted/Design** button to show the dashboard configuration screen.

Use the controls in the configuration screen to add and delete components of the dashboard, to rearrange the layout, or to modify individual cells. The following is an example of a dashboard configuration screen for the demonstration Server dashboard.

Add Row: Single Double		Order: <input type="text" value="2"/>	Name: <input type="text" value="Server Dashb"/>	<input type="button" value="Save"/>	<input type="button" value="Save As"/>	<input type="button" value="Delete"/>
<p>Title: Vaio Response</p> <p>Type: Dial - Range(Average)</p> <p>Time: User</p> <p>Variables: OnLine Availability (crResponseTime, crPctOK)</p> <p>Instances: <input checked="" type="checkbox"/> Vaio : Poll</p> <p>Options: Click for details</p>		<p>Title: Vaio CPU</p> <p>Type: Area(Average)</p> <p>Time: User</p> <p>Variables: OnLine Server CPU (ProcessorLoad)</p> <p>Instances: <input checked="" type="checkbox"/> Vaio : All Instances</p> <p>Options: Click for details</p>		<p>Delete</p> <p>Copy</p> <p>Bigger</p> <p>Single</p> <p>Move Down</p>		
<p>Title: Vaio Disks</p> <p>Type: Table(Average)</p> <p>Time: User</p> <p>Variables: OnLine Server Disk (StoragePctFree)</p> <p>Instances: <input checked="" type="checkbox"/> Vaio : All Instances</p> <p>Options: Click for details</p>				<p>Move Up</p> <p>Delete</p> <p>Copy</p> <p>Bigger</p> <p>Double</p> <p>Move Down</p>		
<p>Title: Vaio Current Events</p> <p>Type: Log</p> <p>Time: User</p> <p>Select Nodes: Name = Vaio*</p> <p>Options: Priority: Normal and up Event Type: All Status: Current Mode: Normal</p>				<p>Move Up</p> <p>Delete</p> <p>Copy</p> <p>Bigger</p> <p>Double</p>		

Adding and Arranging Cells

A dashboard is divided into multiple independent cells arranged in a symmetrical grid. Each row in a dashboard can have one or two cells. Each row can be small or large height. All cells in the same row must be the same height.

The topmost frame is always displayed and contains controls that make global changes to the dashboard as follows:

- Use the **Single** link to add a small row with one cell.
- Use the **Double** link to add a small row with two cells.
- Use the **Order** pull-down list to set the order of the dashboard name in the report group.
- Set a name for the dashboard in the **Name** edit box.
- Use the **Save** button to save your changes to the current dashboard.
- Use the **Save As** button to save the dashboard to a new name (i.e., make a copy)
- Use the **Delete** button to delete the dashboard.

After adding some cells to the configuration screen, use the links at right to resize and rearrange them as follows:

- Use the **Move Up** and **Move Down** links to move the row up or down one level.
- Use the **Delete** link to remove the entire row.
- Use the **Copy** link to make a new row with the same attributes.
- Use the **Bigger** link to change all cells in the row to the large height size.
- Use the **Smaller** link to change all cells in the row to the smaller height size.
- Use the **Double** link to split a single cell row into two cells. The second cell will have the same attributes as the original.
- Use the **Single** link to convert a row of two cells into two rows of full width cells.

Use the **Formatted/Design** button to switch between the view and configuration modes. This lets you view your changes before committing to save them permanently. Note that if you select a different view to display (e.g., map, event, trend report) without pressing the **Save** or **Save As** button, your changes will be lost.

Changing Individual Cells

Each cell in a dashboard is completely independent of all others and can display data in a variety of formats for one or more nodes and one or more variable instances. Use the controls inside the cell to specify what the cell displays and the format of the display. Each control shows a wizard screen to help you make your selections.

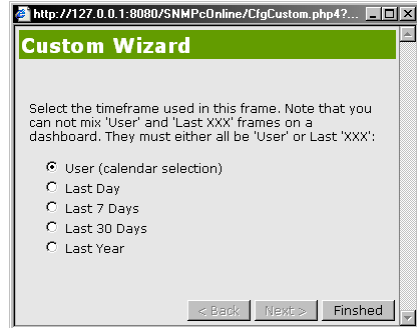
- Use the **Title** link to change the name of the cell.
- Use the **Time** link to set the time period used by the cell (fixed or calendar based).
- Use the **Type** link to set the display type (map, log, table, pie, dial, etc.)
- Use the **Variables** link to set the SNMP variables used in the cell.
- Use the **Instances** link to add node and variable instances to the cell

- Use the **Select Nodes** link to set the nodes used in a Map or Log cell.
- Use the **Options** link to set display options for different cell Types.

Setting the Time Period for a Cell

Use the **Time** link to set the cell time period. The time period can either be fixed for all cells or calendar based (User selection) for all cells. However, in the fixed case, each cell can use a different fixed period.

In general you would use different fixed periods for different cells that otherwise have the same attributes. For example, you could have two graphs of an interface usage report that shows the last day and last month to provide a current and historical view for the same port.

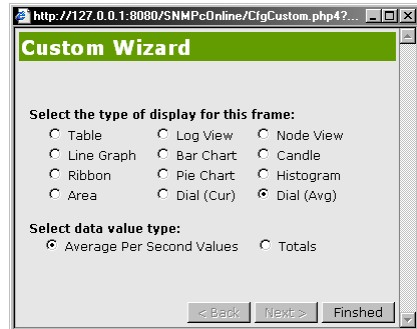


Setting the Display Type

Use the **Type** link to set the cell display type. The basic types are **Table**, **Log View**, **Node (Map) View**, and **Graph**.

For Graph types there are further subtypes of line graph, bar chart, dial and so on.

Select the data value type as **Average Per Second** for graphs such as line and ribbon, or **Totals** for styles such as pie and bar charts.

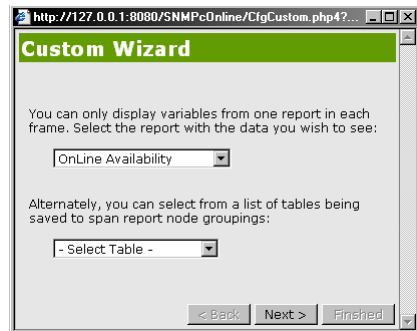


Setting the Variables

Use the **Variables** link to set the SNMP variables used in the cell.

Select a trend report from the first pull-down list to only show nodes and variables from that report. This list only includes reports in the group where you are adding the dashboard.

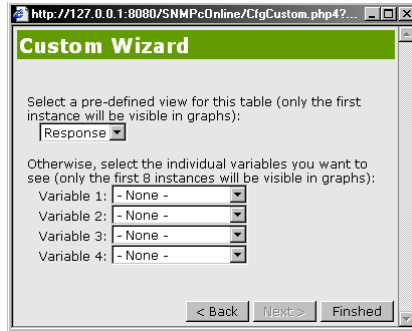
Select an SNMP table from the second pull-down list if you want to include nodes from different reports in the cell.



After selecting the base report or table press the **Next** button to move to select specific variables to display in the cell.

The next screen in this wizard lets you select from a list of built-in *Mini-Views* for the report or individual variables contained in the report.

The mini-views are only available for SNMPc OnLine built-in reports. If you are using a legacy SNMPc trend report or a report that uses a manually selected SNMP table, you will need to select specific variables from the four *Variable* pull-down lists.



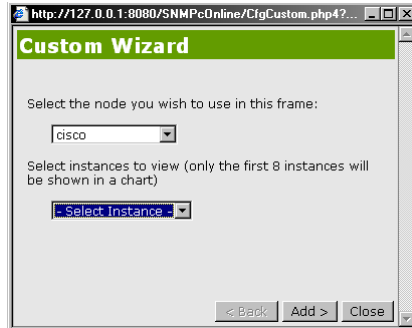
Setting the Device and Variable Instances

Use the *Instances* link to specify the nodes and variable instances to show in the cell.

Select a node name from the first pull-down list. Only nodes that have data saved for the selected report or variables will be available.

Select an instance name from the second pull-down list.

Press the *Add* button to add the selected node/instance pair. This will close the wizard.

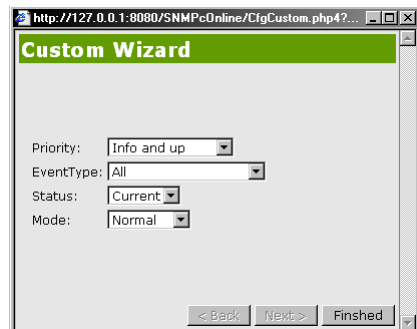


For graph displays you can have up to eight instances per cell. Use the *Instances* link to add more instances. Each node/instance pair is listed in the cell configuration screen. Use the *Delete Graphic* to the left of the node/instance name to remove an instance from the cell.

Setting Display Options

Depending on what attributes you have selected for the cell, there may be optional styles you can set. Use the Options link to view the available options.

- Event log options include the event priority, event type, active status and table/summary style.
- Graph options include line colors for different variable instances.
- Table options include sorting variable and direction.



Scheduled Email Reports

Use the Email button on the Title Bar to immediately send the displayed view display data to an email address or to schedule the report view to be automatically emailed on a daily, weekly or monthly basis.

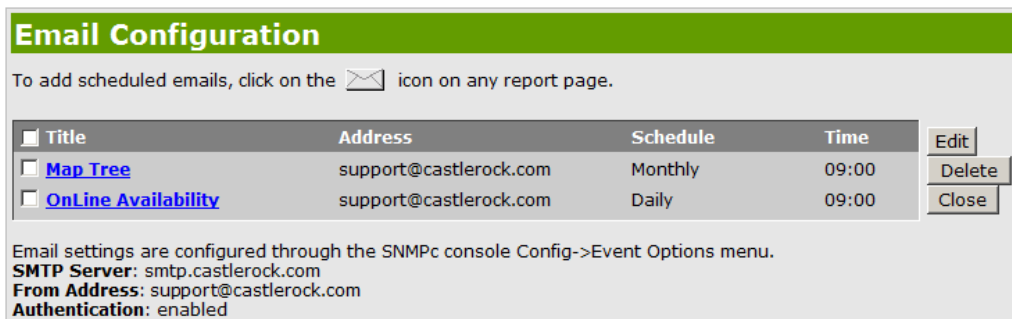


You can email any type of report view including tables, detailed graphs, dashboards or event views. Map list views can be emailed but graphical map displays are not supported.

The Email Properties wizard will prompt you for the following information:

- Destination Email Address
- Schedule (Immediate, Daily, Weekly or Monthly)
- Time of Day to deliver the email.
- Day of Week or Day of Month to deliver Weekly and Monthly emails.
- Report period (Daily, Last 24hr, Weekly, Last 7 Days, etc.).

After the Wizard has finished the email will either be sent immediately or the Email Configuration page will be displayed. The following is an example of the Email Configuration page:

The screenshot shows a web interface titled "Email Configuration" with a green header. Below the header, there is a text instruction: "To add scheduled emails, click on the [envelope icon] icon on any report page." A table lists two scheduled email reports. The table has columns for Title, Address, Schedule, and Time. To the right of the table are buttons for Edit, Delete, and Close. Below the table, there is a section for email settings: "Email settings are configured through the SNMPc console Config->Event Options menu." followed by "SMTP Server: smtp.castlerock.com", "From Address: support@castlerock.com", and "Authentication: enabled".

Title	Address	Schedule	Time	
<input type="checkbox"/> Map Tree	support@castlerock.com	Monthly	09:00	Edit Delete
<input type="checkbox"/> OnLine Availability	support@castlerock.com	Daily	09:00	Close

Email settings are configured through the SNMPc console Config->Event Options menu.
SMTP Server: smtp.castlerock.com
From Address: support@castlerock.com
Authentication: enabled

You can access this page at any time from the **Email** selection of the **Config** menu at the top right of the SNMPc OnLine main window. Select one or more entries and press the Edit button to change schedule settings or press the Delete button to remove the entry.

SNMPc OnLine uses Email Server information from the SNMPc Management Server as follows:

- **SMTP Server** address in the SNMPc Console **Config/Event Options** Menu.
- **Email From** address in the SNMPc Console **Config/Event Options** Menu.
- **Authentication Password** from the **AuthPass=** setting in the SNMPc Server **snmpc.ini** file.

Configuring Netflow Reports

Use the *Netflow* selection of the *Config* menu at the top right of the SNMPc OnLine main window to configure Traffic Flow reports. The following is an example of the Netflow Configuration page:

Netflow Configuration

Enter UDP listening ports here for NetFlow and sFlow packets. Separate multiple ports with commas.

Traffic Flow UDP Configuration

NetFlow Listening Ports	2055
sFlow Listening Ports	6343

Enter probe report parameters here. The probe name must not be left blank. New probes sending data will be added to this list automatically. [See the help for more information.](#)

Traffic Flow Sources

Probe Name	Source Address	Flow Type	UDP Port	Last Flow Received*		
csco2811	192.168.253.66	Netflow	2055	06/27 15:01	<input type="button" value="Change"/>	<input type="button" value="Delete"/>
192.168.254.7	192.168.254.7	Netflow	2055	12/31 16:00	<input type="button" value="Change"/>	<input type="button" value="Delete"/>

Enter TCP/UDP protocol monitoring parameters here. Separate port ranges with a dash (-) character and multiple ports/ranges with the or (!) character. Changes will not take effect until you restart the SNMPc OnLine Netflow monitoring service. [See the help for more information.](#)

Monitored Protocols

Name	TCP/UDP Port		
FTP	20 21	<input type="button" value="Change"/>	<input type="button" value="Delete"/>
HTTP	80 443 3128	<input type="button" value="Change"/>	<input type="button" value="Delete"/>
DNS	42 53	<input type="button" value="Change"/>	<input type="button" value="Delete"/>
Login	23 513 22	<input type="button" value="Change"/>	<input type="button" value="Delete"/>
NetBios	137 138 139 445	<input type="button" value="Change"/>	<input type="button" value="Delete"/>
Mail	109 110 1109 25 143 465 585 993 995	<input type="button" value="Change"/>	<input type="button" value="Delete"/>
DHCP	67 68	<input type="button" value="Change"/>	<input type="button" value="Delete"/>
SNMP	161 162	<input type="button" value="Change"/>	<input type="button" value="Delete"/>
NNTP	119 563	<input type="button" value="Change"/>	<input type="button" value="Delete"/>
NFS/AFS	1110 2049 7000-7009	<input type="button" value="Change"/>	<input type="button" value="Delete"/>
VoIP	5060 2000 54045	<input type="button" value="Change"/>	<input type="button" value="Delete"/>
X11	6000-6010	<input type="button" value="Change"/>	<input type="button" value="Delete"/>
Skype	41652	<input type="button" value="Change"/>	<input type="button" value="Delete"/>
eDonkey	4661-4665	<input type="button" value="Change"/>	<input type="button" value="Delete"/>
BitTorrent	6881-6999 6969	<input type="button" value="Change"/>	<input type="button" value="Delete"/>
Messenger	1863 5000 5001 5190-5193	<input type="button" value="Change"/>	<input type="button" value="Delete"/>
<input type="text"/>	<input type="text"/>	<input type="button" value="Add"/>	

Enter a list of comma separated UDP ports that SNMPc should listen for Netflow and SFlow data in the first two edit boxes. The defaults are 2055 and 6343, respectively.

Flow Sources are added automatically when data is received from a probe. Use the Delete button to remove an entry for a probe that has been configured to stop sending data to SNMPc. Use the Change button to update the name for the probe source.

Use the *Monitored Protocols* list to define the Application names used in Traffic Flow Reports. Each entry specifies a set of TCP/UDP ports separated by a vertical bar (‘|’) or a range of ports separated by a dash (‘-’).

Ports which are not in this list are aggregated as the Unknown application name. Use the **More (nn Total)...** link under the **Applications Total** table on a report summary page to see a full list of unknown application protocol numbers.

The Netflow Config page also includes settings to specify how much database space is used for traffic flow data and how often to age the data.

NetFlow Easy Setup Configuration Tool

After installing SNMPc OnLine a new program is added to the SNMPc Console interface for configuring Cisco Netflow devices. This tool is only available on the SNMPc Server computer where you installed SNMPc OnLine.

Select a Cisco device icon in the SNMPc Console map view. Then use the right click **Router / Cisco / Netflow Configuration** menu. The following dialog is displayed.

NetFlow Config

Collectors

Address	Port	
72.165.116.53	2056	
72.165.116.55	2055	

Max Collectors: 2

Address: 192.168.1.129 Port: 2055

Buttons: Add, Change, Delete

Interfaces

Interf...	Name	Alias	Direc...
1	Fa0/0	internet	Ingress
2	Fa0/1	subnet	Ingress
4	Nu0		None
5	Tu0	Hurricane Electric IPv6 ...	None

Buttons: None, Ingress, Egress, Both

NetFlow Packet: 5

Close

Note that the Cisco icon definition must include the correct Read and Write SNMP community strings in order for the tool to operate. You can edit the community string by right-clicking on the icon and selecting **Properties**. The Community Strings are settable via the **Access** tab.

The Tool will display any existing NetFlow configuration on the Cisco Device. You can **Add**, **Change** or **Delete** Collectors and specify which version of NetFlow to enable. If this is an initial configuration then you will need to **Add** the IP address of the SNMPc server. As default the SNMPc collector is listening on port 2055.

For each interface on the device you can specify whether NetFlow is monitoring Ingress, Egress or both traffic directions.

How to Buy SNMPc OnLine

SNMPc OnLine is sold together with SNMPc Enterprise as the *SNMPc Network Manager*. Please visit the *How to Buy* page at www.castlerock.com for purchasing options.

Please email any pre-sales questions to sales@castlerock.com or call 408-366-6540.