

HP OpenView Performance Insight

IP Access Rate Report Pack User Guide

Software Version: 3.0

Reporting and Network Solutions 7.0



November 2004

© Copyright 2004 Hewlett-Packard Development Company, L.P.

Legal Notices

Warranty

Hewlett-Packard makes no warranty of any kind with regard to this document, including, but not limited to, the implied warranties of merchantability and fitness for a particular purpose. Hewlett-Packard shall not be held liable for errors contained herein or direct, indirect, special, incidental or consequential damages in connection with the furnishing, performance, or use of this material.

A copy of the specific warranty terms applicable to your Hewlett-Packard product can be obtained from your local Sales and Service Office.

Restricted Rights Legend

Use, duplication, or disclosure by the U.S. Government is subject to restrictions as set forth in subparagraph (c)(1)(ii) of the Rights in Technical Data and Computer Software clause in DFARS 252.227-7013.

Hewlett-Packard Company
United States of America

Rights for non-DOD U.S. Government Departments and Agencies are as set forth in FAR 52.227-19(c)(1,2).

Copyright Notices

© Copyright 2002–2004 Hewlett-Packard Development Company, L.P., all rights reserved.

No part of this document may be copied, reproduced, or translated into another language without the prior written consent of Hewlett-Packard Company. The information contained in this material is subject to change without notice.

Trademark Notices

OpenView is a U.S. registered trademark of Hewlett-Packard Development Company, L.P.

Java™ is a U.S. trademark of Sun Microsystems, Inc.

Oracle® is a registered U.S. trademark of Oracle Corporation, Redwood City, California.

UNIX® is a registered trademark of The Open Group.

Windows® and Windows NT® are U.S. registered trademarks of Microsoft Corporation.

Support

Please visit the HP OpenView web site at:

<http://www.managementsoftware.hp.com/>

This site provides contact information and details about the products, services, and support that HP OpenView offers. To reach the Support site, click **Support**. The Support site provides a fast and efficient way to access interactive technical support tools needed to manage your business. As a valuable support customer, you can benefit by using the support site to:

- Search for documents of interest
- Submit and track progress on support cases
- Manage a support contract
- Look up HP support contacts
- Review information about available services
- Join online discussions with other software customers
- Research and register for software training

Most of the support areas require you to register as an HP Passport user and log in. You may also require a support contract.

To find more information about access levels, go to the following URL:

http://support.openview.hp.com/access_level.jsp

To register for an HP Passport ID, go to:

<https://passport.hp.com/hpp2/newuser.do>

contents

Chapter 1	Overview	7
	OVPI and QoS Reporting	7
	Ways to Customize Reports	9
	Package Version History	10
	Sources for Additional Information	10
Chapter 2	Package Installation	11
	Guidelines for a Smooth Install	11
	Installing IP Access Rate 3.0	13
	Accessing Deployed Reports	15
	Package Removal	15
Chapter 3	Distributed Systems	17
	Configuring the Central Server	17
	Configuring a Satellite Server	18
	System Clocks	19
Chapter 4	Sample Reports from the Demo Package	21
Chapter 5	Editing Tables and Graphs	29
	View Options for Tables	29
	View Options for Graphs	31
Glossary		37
Index		39

Overview

This chapter covers the following topics:

- [OVPI and QoS Reporting](#)
- [Ways to Customize Reports](#)
- [Sources for Additional Information](#)

OVPI and QoS Reporting

QoS refers to the capability of a network to provide better service to select traffic on IP-routed networks. The primary goals of QoS are to:

- Dedicate bandwidth to particular traffic types
- Control jitter and latency (necessary for real-time, interactive traffic)
- Improve loss characteristics

A rate-limited object (RLO) is a uni-directional traffic policing rule. A byte or package that exceeds a rate limit will be dropped (filtered) at the interface. If the ratio of filtered traffic is high and stays high, the level of service may be incorrect for this customer.

IP Access Rate Report Pack

The IP Access Rate Report Pack monitors the performance of interfaces configured with RLOs. Use the reports in this package to identify interfaces with high ratios of filtered traffic. If you know which interfaces have high ratios of filtered traffic, you know which service levels require modification in order to avoid congestion on the backbone.

IP Access Rate 3.0 is a supplement to the Interface Reporting Report Pack. The Interface Reporting Report Pack is a prerequisite. IP Access Rate 3.0 contains four reports:

Near Real Time Activity. Highlights interfaces with high filtering ratios, based on rate data collected over the previous six hours. Identifies switched bytes, filtered bytes, and burst rate. Any interface that appears in this report had to have at least some activity over the previous six hours.

Recent Activity. Filtering activity within the most recent summarized hour for managed devices, split by customer. Shows switched/filtered activity per device on an hourly basis over the previous few days.

Historical Activity Report. A list of managed devices, split by customer, highlighting devices that are doing the most filtering. Ranks devices by percentage of filtered traffic. Use this report to find out where device utilization is above the allowed service level.

Inventory. A list of every interface in the network, with RLO configuration details. Use this list to examine customer configurations or to compare interfaces on different devices.

Data Collection

IP Access Rate 3.0 uses one datapipe, the Cisco IPAccessRate Datapipe. This datapipe polls the CISCO-CAR-MIB for the following metrics:

- Switched bytes
- Filtered bytes
- Burst rate
- Discards
- Errors

Adding and Modifying Properties

There is no separate property import for the reports in IP Access Rate 3.0. The property information that pertains to an interface, such as interface speed, customer, location, and device name, is inherited from two external sources:

- The property import utility bundled with the Interface Reporting Report Pack
- Common Property Tables

For more information about how to modify property data inherited from these two sources, refer to the following manuals:

- *Interface Reporting Report Pack 4.6 User Guide*
- *Common Property Tables 3.5 User Guide*

Thresholding and Alarms for NNM

If you install the optional thresholds sub-package that comes with IP Access Rate, OVPI will respond to packet-drop ratio exceptions. The value for package drop ratio is inherited from the Interface Reporting Report Pack. When OVPI detects an exception, it will send a threshold trap to NNM. The trap received by NNM appears as an alarm in the NNM alarm browser.

The thresholds sub-package has a prerequisite package, the Threshold and Event Generation Module, also known as the Thresholds Module. You can install the Thresholds Module before you install report packs, or you can let Package Manager install the Thresholds Module when you install IP Access Rate 3.0. The Thresholds Module requires no configuration. However, if you want to modify the default destination for threshold traps (your NNM server), or modify the action that OVPI takes in response to an exception, configuration is necessary.

Ways to Customize Reports

You can change the contents of a report by applying group filters (not related to traffic filtering mentioned above), by updating property information, by applying constraints, and by editing tables and graphs. For details about view options for tables and graphs, see [Chapter 5, Editing Tables and Graphs](#).

Group Filters

If you want to share reports with your customers, you must configure OVPI to produce customer-specific reports. Here is an overview of the steps involved:

- Use Common Property Tables to import customer names and device locations
- Create a group account for all the users affiliated with each customer
- Create a group filter for each group account

For more information about creating filters for group accounts, refer to the *Performance Insight 5.0 Administration Guide*.

Applying Constraints

When you edit a parameter, you apply a constraint to the report. If you edit the Customer Name parameter, data for all customers except the customer you typed in the Customer Name field will drop from the report. If you edit the Source Location, data for all locations except the location you typed in the Source Location field will drop from the report.

IP Access Rate 3.0 supports the following parameters:

- Customer Name
- Customer ID
- Device Name
- Interface Name
- Admin Status
- Location Name

You can apply multiple constraints at once. If you are viewing the report remotely (using the Web Access Server), apply a constraint by clicking the edit parameters icon at the bottom right-hand corner of the report. When the Edit Parameters window opens, enter the constraint in the field and click **Submit**.

If you are using Report Viewer, select **Edit > Parameter Values** from the menu bar. When the Modify Parameter Values window opens, click the **Current Value** field. Type a new value and click **OK**.

Package Version History

The following table outlines recent enhancements to the IP Access Rate Report Pack.

Version	RNS Version and Date	Enhancements
1.0	RNS 3.0 - May 2003	4 reports, no forms; Sybase support
2.0	RNS 4.0 - October 2003	OVPI Object Manager support Thresholds sub-package
3.0	RNS 5.0 - April 2004	OVPI 5.0 support Oracle support
3.0	RNS 6.0 - August 2004	Upgrade package (to_3.0)
3.0	RNS 7.0 - November 2004	No changes

Sources for Additional Information

The demo package that comes with IP Access Rate contains a sample of each report in the package. If you have access to the demo package and you want to know what fully-populated reports look like, install the demo package. Demo reports are interactive. Selection tables and graphs are linked and you can experiment with constraints and view options.

For information about the latest changes to this package and any known problems, refer to:

- *IP Access Rate Report Pack 3.0 Release Statement*

For details about related packages, refer to the following documents:

- *IP QoS Statistics Report Pack 3.0 User Guide*
- *Interface Reporting Report Pack 4.6 User Guide*
- *Common Property Tables 3.5 User Guide*
- *RNS 7.0 Release Notes, November 2004*

Manuals for the core product, OVPI, and manuals for the reporting solutions that run on OVPI are posted to the following web site:

<http://www.hp.com/managementsoftware>

Select **Support > Product Manuals** to open the **Product Manual Search** page. Manuals for OVPI are listed under **Performance Insight**. Manuals for report packs, datapipes, NNM SPIs, and NNM correlators are listed under **Reporting and Network Solutions**.

The manuals listed under **Reporting and Network Solutions** indicate the month and year of publication. If a user guide is revised and reposted, the date of publication will change even if the software version number does not change. Since we post revised user guides on a regular basis, you should visit this site for updates before using an outdated manual.

Package Installation

This chapter covers the following topics:

- [Guidelines for a Smooth Install](#)
- [Installing IP Access Rate 3.0](#)
- [Accessing Deployed Reports](#)
- [Package Removal](#)

Guidelines for a Smooth Install

The RNS 7.0 CD contains components for NNM as well as report packs and datapipes for OVPI. When you select OVPI report packs for installation, the install script on the CD extracts every OVPI package from the CD and copies the results to the Packages directory on your system. When the extract and copy process finishes, the install script will prompt you to launch Performance Insight and start Package Manager. Before running Package Manager, review the following guidelines.

Prerequisites for Installation

Version 3.0 of IP Access Rate has a combination of core-product requirements and package-level requirements. The core product requirements are as follows:

- OVPI 5.0
- Any available OVPI 5.0 service pack

You can find information about each service pack, including installation instructions, in the release notes for the service pack. The package-level prerequisites are as follows:

- Common Property Tables 3.0 or higher
- Interface Reporting 4.0 or higher
- Interface Discovery Datapipe 2.0 or higher
- Interface Reporting ifEntry Datapipe 2.0 or higher

Common Property Tables

If you are running Common Property Tables 2.2, you must upgrade to version 3.0. If you are running Common Property Tables 3.0, you have the option to upgrade to Common Property Tables 3.5. Installing either upgrade package is no different from installing other upgrade package; however, do not install an upgrade for Common Property Tables *and* other packages at the same time. Install the upgrade package for Common Property Tables and *only* the upgrade package for Common Property Tables.

Upgrading to IP Access Rate 3.0 from Version 2.0

If you are currently running IP Access Rate version 1.0 or version 2.0, you can upgrade to version 3.0 by installing the “to_3.0” upgrade package. Datapipes cannot be upgraded, so in addition to installing the upgrade package, you also need to delete the existing datapipe. Follow these steps to upgrade from your existing version to version 3.0:

- 1 Start Package Manager; delete Cisco IPAccessRate Datapipe 2.0.
- 2 Exit Package Manager.
- 3 Start Package Manager; install UPGRADE_IPAccessRate_Reporting_to_3.0 (by itself, no other packages)
- 4 Exit Package Manager.
- 5 Start Package Manager; install Cisco IPAccessRate Datapipe 3.0.
- 6 Exit Package Manager.

Distributed Environments

If you are running IP Access Rate as a distributed system across multiple servers, the central server, every satellite server, and every remote poller must be running OVPI 5.0 and the same set of service packs for OVPI 5.0. Following is a summary of the install procedure for distributed environments:

- Disable trendcopy on the central server.
- Install IP Access Rate 3.0 on the central server; enable the Deploy Reports option.
- Install the following packages on each satellite server:
 - IP Access Rate 3.0; do not deploy reports
 - IPAccessRate_Reporting_Thresholds (optional)
 - Cisco IPAccessRate Datapipe 3.0
- Re-enable trendcopy on the central server.

When you finish installing packages, you must configure each server by following the steps in Chapter 3, Distributed Systems. If you recently upgraded from OVPI 4.6 to OVPI 5.0, you must repeat the configuration steps you performed when you installed version 2.0. Repeating these steps is necessary because the technique for setting up connections with satellite servers changed in OVPI 5.0.

The Optional Thresholds Sub-Package

If you have already integrated OVPI with NNM, you have the option of launching IP Access Rate reports from NNM. To enable this feature, install the thresholds sub-package, `IPAccessRate_Reporting_Thresholds`.

The thresholds sub-package cannot operate without the Threshold and Event Generation Module, commonly known as the Thresholds Module. If you select the thresholds sub-package for installation, Package Manager will select and install the Thresholds Module for you.

Installing IP Access Rate 3.0

Perform the following tasks to install IP Access Rate Reporting 3.0:

- Task 1: Stop OVPI Timer and extract packages from the RNS CD
- Task 2: If necessary, upgrade to Common Property Tables 3.0
- Task 3: Install the following packages:
 - *IP Access Rate 3.0*
 - *Cisco IPAccessRate Datapipe 3.0*
 - *IPAccessRate_Reporting_Thresholds* (optional)

Task 1: Stop OVPI Timer and extract packages from the RNS CD

- 1 Log in to the system. On UNIX systems, log in as root.
- 2 Stop OVPI Timer and wait for processes to terminate.

Windows: Select **Control Panel > Administrative Tools > Services**

UNIX: As root, do one of the following:

HP-UX: **sh /sbin/ovpi_timer stop**

Sun: **sh /etc/init.d/ovpi_timer stop**

- 3 Insert the RNS CD. On Windows, a Main Menu displays automatically. On UNIX, the CD may or may not mount automatically; if it does not mount automatically, navigate to the top level directory on the CD, and run the **/setup** command.
- 4 Type **1** in the choice field and press **Enter**. The install script displays a percentage complete bar. When the copy is complete, the install script starts Package Manager. The Package Manager install wizard opens.

When the copy to the Packages directory is complete, you have the option of navigating to the Packages directory to see the results. The Packages directory contains separate folders for the report pack and the datapipe. The following folders appear under IP Access Rate:

- *IPAccessRate_Reporting.ap*
- *IPAccessRate_Reporting_Demo.ap*
- *IPAccessRate_Reporting_Thresholds.ap*
- *UPGRADE_IPAccessRate_Reporting_to_3.0*

The following folder appears under Cisco IPAccessRate Datapipe:

- *Cisco_IPAccessRate_Datapipe.ap*

Task 2: Upgrade Common Property Tables 3.0 or higher

IP Access Rate 3.0 requires Common Property Tables 3.0 or higher. If you are currently using an earlier release, start Package Manager and upgrade Common Property Tables. When Package Manager indicates that installation of the upgrade package is complete, click **Done** to return to the Management Console.

If you are not currently running any version of Common Property Tables, skip this task. Package Manager will install the latest version of Common Property Tables for you, automatically.

Task 3: Install IP Access Rate, the datapipe, and the optional thresholds package

- 1 Start Package Manager. The Package Manager install wizard opens.
- 2 Click **Next**. The Package Location window opens.
- 3 Click **Install**. Approve the default installation directory or use the browse feature to select a different directory if necessary.
- 4 Click **Next**. The Report Deployment window opens. Accept the default for Deploy Reports; accept the defaults for application server name and port; type your user name and password for the OVPI Application Server.
- 5 Click **Next**. The Package Selection window opens.
- 6 Click the check box next to the following packages:
IPAccessRate_Reporting
IPAccessRate_Reporting_Thresholds (optional)
IPAccessRate_Reporting_Demo
Cisco_IPAccessRate_Datapipe
- 7 Click **Next**. The Type Discovery window opens. Keep the default and click **Next**. The Selection Summary window opens.
- 8 Click **Install**. The Install Progress window opens. When installation finishes, an install complete message appears.
- 9 Click **Done** to return to the Management Console.
- 10 Restart OVPI Timer.

Windows: Select **Control Panel > Administrative Tools > Services**

UNIX: As root, do one of the following:

HP-UX: **sh /sbin/ovpi_timer start**

Sun: **sh /etc/init.d/ovpi_timer start**

Accessing Deployed Reports

When you installed IP Access Rate, you enabled the Deploy Reports option. As a result, the reports in this package (as well as any forms associated with the package) were deployed to the OVPI Application Server. Once reports reside on the OVPI Application Server, you have two ways to view them:

- OVPI clients
- Web browser

If the client components are installed on your system, you have access to Report Viewer, Report Builder, and the Management Console. If the client components are not installed on your system, using a web browser is the only way you can view reports.

For more information about the client components, refer to the *Performance Insight Installation Guide*. For more information about the Management Console, including how to use the Object/Property Management view to launch reports specific to a selected object, refer to the *Performance Insight Administration Guide*.

Package Removal

If you uninstall a report pack, the associated tables and all the data in those tables will be deleted. If you want to preserve the data in those tables, archive the data before removing the package.

Follow these steps to uninstall IP Access Rate and the Cisco IP Access Rate Datapipe:

- 1 Log in to the system. On UNIX systems, log in as root.
- 2 Stop OVPI Timer and wait for processes to terminate.

Windows: Select **Control Panel > Administrative Tools > Services**

UNIX: As root, do one of the following:

HP-UX: **sh /sbin/ovpi_timer stop**

Sun: **sh /etc/init.d/ovpi_timer stop**

- 3 Start Package Manager. The Package Manager window opens.
- 4 Click **Next**. The Package Location window opens.
- 5 Click **Uninstall**. Keep the defaults.
- 6 Click **Next**. The Package Selection window opens.
- 7 Click the check box next to the following packages:

IPAccessRate_Reporting

IPAccessRate_Reporting_Thresholds (if installed)

IPAccessRate_Reporting_Demo (if installed)

Cisco_IPAccessRate_Datapipe

- 8 Click **Next**. The Selection Summary window opens.
- 9 Click **Uninstall**. The Progress window opens. When the removal finishes, a removal complete message appears.

10 Click **Done** to return to the Management Console.

11 Restart OVPI Timer.

Windows: Select **Control Panel > Administrative Tools > Services**

UNIX: As root, do one of the following:

HP-UX: **sh /sbin/ovpi_timer start**

Sun: **sh /etc/init.d/ovpi_timer start**

Distributed Systems

If you intend to run IP Access Rate as a distributed system, and you followed the instructions in the previous chapter, the central server is running IP Access Rate and each satellite server is running IP Access Rate, the thresholds sub-package, and the Cisco IPAccessRate Datapipe. Your next task is to configure the central server and each satellite server. This chapter covers the following topics:

- Configuring the central server
- Configuring each satellite server
- System clocks

Configuring the Central Server

Perform these tasks to configure the central server:

- Set up connections with satellite server databases
- Switch off hourly processing on the central server
- Configure trendcopy pull commands for hourly data
- Configure trendcopy pull commands for rate data (optional)

In addition to performing these tasks, it is important to verify that the system clock on the central server is synchronized with system clocks on the satellite servers.

Task 1: Set up connections with satellite server databases

- 1 Start the Management Console.
- 2 Click the **Systems** icon on the lower left. The System/Network Administration pane opens.
- 3 Right-click the **Databases** folder. When prompted, select **Add OVPI Database**. The Add Database Wizard opens.
- 4 Click **Next**.
- 5 Type the host name and port number for the database you want to add; click **Next**.
- 6 Review the Summary. Repeat Steps 4 and 5 for each additional database.
- 7 Click **Finish** when you are done.

Task 2: Switch off hourly processing on the central server

- 1 Modify the hourly process file; open the following file:
`$DPIPE_HOME/scripts/IPAR_Hourly_Process.pro`
- 2 Comment out block1 by adding the comment sign (“#”) before the word **begin** and the word **end**.

Task 3: Configure trendcopy pull commands for hourly data

- 1 Open the following file:
`$DPIPE_HOME/scripts/IPAR_Hourly_Process.pro`
- 2 Modify block2 as follows:
 - Remove “#” before the word **begin** and before the word **end**
 - Replace *SATELLITE_SERVER_1_DATABASE* with the satellite server name
 - Replace *THIS_MACHINE_DATABASE* with the central server name
- 3 If there is more than one satellite server, create a copy of block2 for each satellite server and repeat step 2 for each copy of block2.

Task 4: Configure trendcopy pull commands for rate data (optional)

If you want to view the Near Real Time report from the central server, you need to copy rate data from each satellite server to the central server. To do that, configure trendcopy pull commands from the central server for each satellite server.

- 1 Open the following file:
`$DPIPE_HOME/scripts/IPAR_Hourly_Process.pro`
- 2 Modify block3 as follows:
 - Remove “#” before the word **begin** and before the word **end**
 - Replace the *SATELLITE_SERVER_1_DATABASE* with the satellite server name
 - Replace *THIS_MACHINE_DATABASE* with the central server name
- 3 If there is more than one satellite server, create one copy of block3 for each satellite server and repeat Step 2 for each copy of block3.



Pulling rate data from satellite servers increases traffic between satellite servers and the central server and increases the processing load on the central server.

Configuring a Satellite Server

Follow these steps to configure a satellite server.

- 1 Switch off daily aggregations by commenting out the lines referencing *IPAR_DMF_Process.pro* in the *\$DPIPE_HOME/lib/trendtimer.sched* file.
- 2 Modify the *IPAR_Hourly_Process.pro* *trendtimer* entry in the *\$DPIPE_HOME/lib/trendtimer.sched* file.

By default, this process starts at 40 minutes after the hour. Since you want the satellite server to complete its hourly summarizations before the central server begins its hourly summarizations, change the start time from 1:00+40 to 1:00+25.

- 3 Configure polling policies for the Cisco IPAccessRate Datapipe. Make sure that each interface is polled by one satellite server only.

System Clocks

Make sure that the system clock on each satellite server is synchronized with the system clock on the central server.

Sample Reports from the Demo Package

This chapter describes reports and provides a sample of each.

Near Real Time Interface Activity

Highlights RLO interfaces with a high proportion of filtered traffic. The entries in the selection table sort according to the filtered/switched ratio, highest to lowest. If you see an interface with a high proportion of filtered traffic, you can inspect the rate limiting rules that apply to the interface.

The graphs provide details for the ratio of filtered traffic to all traffic (in bytes), the ratio of filtered traffic to switched traffic, and the current burst traffic rate. The graphs contain rate data, for the previous six hours, for (1) switched and filtered traffic, and (2) burst rate. The graph at the bottom of the report shows utilization, errors, and discards over the previous six hours.

Recent IP Access Rate Activity

Provides a list of managed devices, split by customer, and filtering activity within the most recent summarized hour. In addition, you can see hourly activity on a device over the previous few days.

Historical IP Access Rate Activity

Looks at yesterday's filtering activity and sorts devices by filtering from highest to lowest. The list of devices indicates totals for switched packages, filtered packets, switched bytes, and filtered bytes. Drill down on a selected device to display a list of rate limited interfaces. Use this report to determine which devices are exceeding rate limits and which customers may be transmitting more data than their service level can accommodate. Use the hourly chart at the bottom of the report to find out exactly when filtering took place. Compare the hourly chart to the daily and monthly charts to find out whether yesterday's filtering activity was an isolated incident or part of a longer-term trend.

Inventory Report

Provides a list of all the interfaces in the network and the rate limit objects configured for each interface. Use this report to examine customer configurations or to compare individual interfaces on different devices. The details about interfaces and rate limit objects are updated after every poll cycle. The list of customers is refreshed every evening.

IP Access Rate Reporting

Near Real Time Interface Activity



The IP Access Rate Near Real Time report provides a detailed look at the performance of individual IP Access Rate Limit Objects and the interfaces on which they reside, up to the last poll cycle. Select an interface from the list to see filtered and switched metrics per Rate Limit object along with utilization, discards and error counts for the parent interface over the previous 6 hours.

Rate Limiting Interfaces

Active Interfaces With Rate Limits Over Previous 6 Hours

Device	Interface	ifSpeed	Admin Status	Customer	Filtered / Switched	Filtered %
63.237.13.1	Hssi1/0	In: 44.2 Mb/s Out: 44.2 Mb/s	Up	Customer 2	305.9 Mb : 677.7 Mb	31
64.214.129.1	Serial5/0/0	In: 44.2 Mb/s Out: 44.2 Mb/s	Up	Customer Unassigned	2.3 Mb : 50.5 Mb	4
64.214.130.1	Serial5/0/0	In: 44.2 Mb/s Out: 44.2 Mb/s	Up	Customer Unassigned	2.3 Mb : 50.5 Mb	4
63.238.176.1	Serial1/0:19	In: 512.0 Kb/s Out: 512.0 Kb/s	Up	Customer Unassigned	11.4 Mb : 376.0 Mb	3
65.211.170.1	Ethernet0/1	10 Mb/s	Up	Customer Unassigned	1.6 Mb : 69.0 Mb	2
65.171.113.1	FastEthernet0/0	100 Mb/s	Up	Customer Unassigned	441.0 Kb : 31.4 Mb	1
63.238.176.1	Serial1/0:5	In: 512.0 Kb/s Out: 512.0 Kb/s	Up	Customer Unassigned	3.0 Kb : 3.3 Mb	0
66.205.94.1	FastEthernet5/0/0	100 Mb/s	Up	Customer 4	0 bytes : 206.5 Kb	0
63.238.176.1	Serial1/0:1	In: 256.0 Kb/s Out: 256.0 Kb/s	Up	Customer Unassigned	0 bytes : 0 bytes	0
65.214.100.1	Serial1/0:0	In: 4.528 Mb/s Out: 4.528 Mb/s	Up	Customer Unassigned	0 bytes : 0 bytes	0

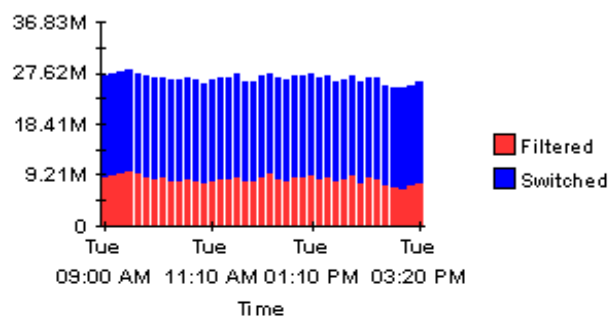
Rate Limit Objects on '63.237.13.1: Hssi1/0' Over Previous 6 Hours

Dir	RateIndex	Conform Act.	Exceed Act.	Limit	Rate	ExtLimit	Type	Accldx	Filtered / Switched	Filter %
Output	2	Continue	drop	64,000	256,000	64,000	All	-	305.9 Mb : 677.7 Mb	31.101



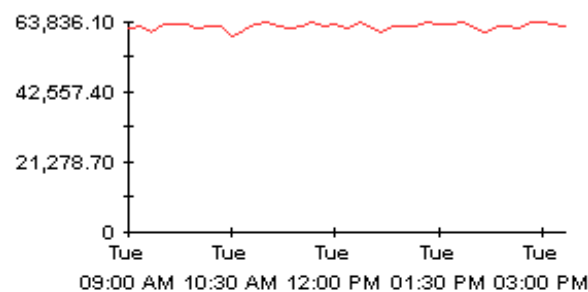


**Filtered / Switched Bytes
Over Previous 6 Hours**



Burst Rate | Permitted Prob

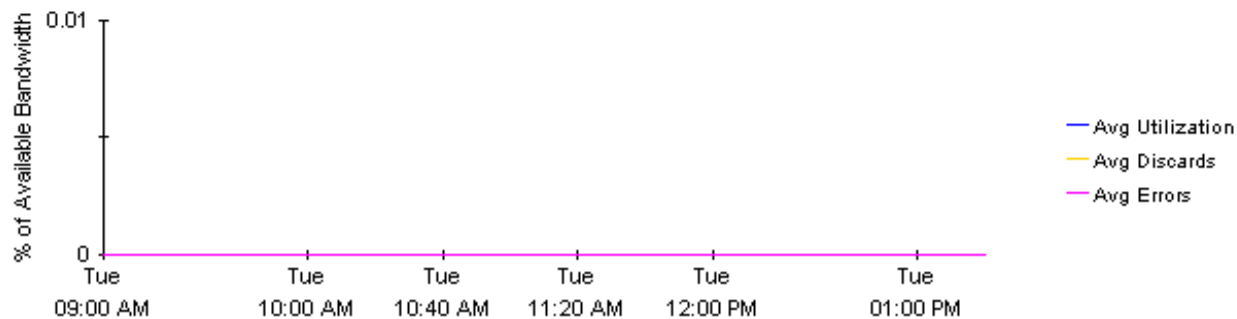
Burst Rate



bound | Outbound | Both (Half Duplex Only)

Average Inbound Utilization, Discards and Errors for 63.237.13.1: Hssi1/0

% of Available Bandwidth in the Previous 6 hours



IP Access Rate Reporting

Recent IP Access Rate Activity



The Recent IP Access Rate Devices Activity provides lists of managed devices, split by customer, and focuses on filtering activity within the most recent summarized hour. An 'X' to the left of a device name indicates that a summary has not been performed recently and it should be investigated. Use this report to look at hourly activity on a device over the previous few days. Use the lower selection lists to narrow in on exactly which Rate Limit is dropping the traffic.

Customer		Device Rate Limit Figures			
Id		For Most Recent Summarized Hour			
Customer Unassigned		-2			
Hewlett Packard		4			
Huge Corp		2			
		Device	Location	Volume Filtered/Switched	Filtered %
		65.171.113.1	Location Unassigned	8.1 Mb : 88.9 Mb	8.375
		66.205.94.1	Location Unassigned	8.4 Mb : 99.6 Mb	7.771
		64.214.130.1	Location Unassigned	137.1 Kb : 2.4 Mb	5.282
		64.214.129.1	Location Unassigned	137.1 Kb : 2.4 Mb	5.275
		65.194.90.1	Location Unassigned	0 bytes : 38.5 Kb	0.000
		65.194.91.1	Location Unassigned	0 bytes : 38.5 Kb	0.000
		63.238.176.1	Location Unassigned	0 bytes : 630.6 Kb	0.000
		65.207.187.1	Location Unassigned	0 bytes : 38.5 Kb	0.000
		65.211.170.1	Location Unassigned	0 bytes : 3.6 Mb	0.000
		65.212.180.1	Location Unassigned	0 bytes : 0 bytes	0.000
		65.216.159.1	Location Unassigned	0 bytes : 38.5 Kb	0.000

Sys Contact

N/A

Sys Name

ICS-327Main

Sys Location

N/A

Sys Descr

Cisco Internetwork O ...



Rate Limiting Interface Data

For Most Recent Summarized Hour

Interface	ifSpeed	Admin Status	Protocol	Filtered / Switched	Filtered %
FastEthernet0/0	100 Mb/s	Up	ethernet-sona	8.1 Mb : 88.9 Mb	8.375

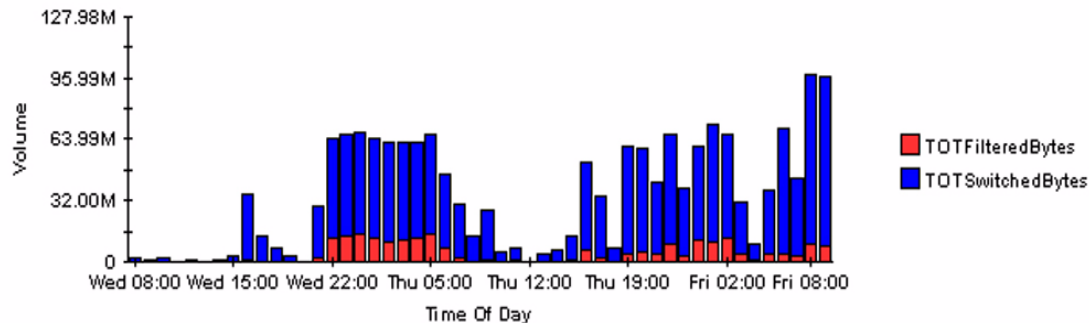
Rate Limit Objects on '65.171.113.1: FastEthernet0/0'

For Most Recent Summarized Hour

Dir	RateIndex	Conform Act.	Exceed Act.	Limit	Rate	ExtLimit	Type	Accldx	Filtered / Switched	Filter %
Output	1	Transmit	Drop	8,000	128,000	8,000	All	-	4.3 Mb : 43.5 Mb	9.049
Input	1	Transmit	Drop	8,000	128,000	8,000	All	-	3.8 Mb : 45.3 Mb	7.719

Devices | Interfaces | Rate Limits

Hourly Filtering for 65.171.113.1: -2



IP Access Rate Reporting

Historical IP Access Rate Activity



The Historical IP Access Rate Devices Activity provides lists of managed devices, split by customer, and focuses on those devices which are filtering the highest proportion of their traffic due to Rate Limit objects. Use the report to decide which devices are more heavily utilized than their current service level allows. Filter the display using the built in parameters.

Device Rate Limit Figures For Yesterday

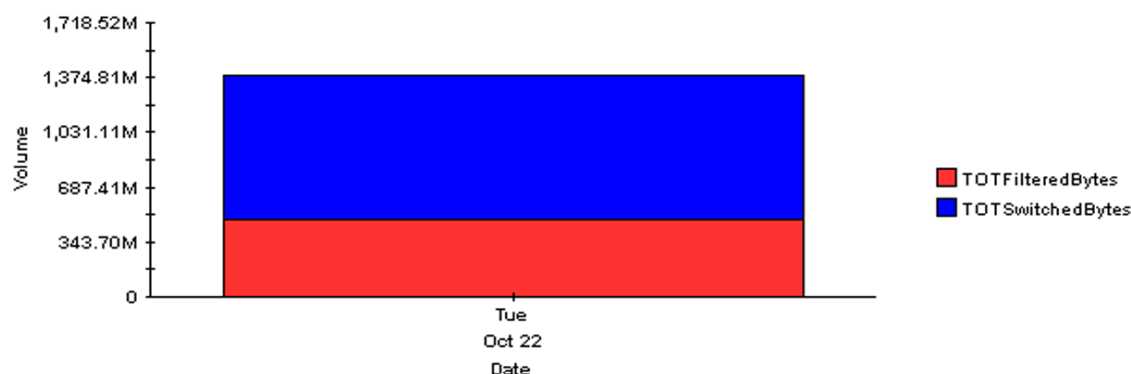
Customer	Id	Device	Vendor	Volume	Packets	Filtered %
All Customers	-1		Name	Filtered/Switched	Filtered/Switched	
Customer Unassigned	-2	63.237.13.1	Cisco 3640	479.5 Mb : 912.5 Mb	820049 : 15291143	34
Hewlett Packard	4	65.171.113.1	Cisco 2620	55.8 Mb : 301.5 Mb	42603 : 297332	16
Huge Corp	2	64.214.130.1	Cisco 7513z	4.4 Mb : 130.0 Mb	3353 : 441922	3
		64.214.129.1	Cisco 7513z	4.4 Mb : 130.1 Mb	3353 : 441931	3
		63.238.176.1	Cisco 7204	8.9 Mb : 365.8 Mb	8156 : 878962	2
		65.211.170.1	Cisco 2611	7.7 Mb : 515.8 Mb	5672 : 957606	1
		65.194.90.1	Cisco 2620	0 bytes : 1.8 Mb	0 : 24645	0
		65.194.91.1	Cisco 2620	0 bytes : 1.8 Mb	0 : 24645	0
		66.205.94.1	Cisco 7507	0 bytes : 201.4 Kb	0 : 1614	0
		65.207.187.1	Cisco 2620	0 bytes : 1.8 Mb	0 : 24645	0
		65.212.180.1	Cisco 2620	0 bytes : 0 bytes	0 : 0	0
		65.216.159.1	Cisco 2620	0 bytes : 1.8 Mb	0 : 24643	0

Rate Limiting Interfaces

Interface	ifSpeed	Admin Status	Protocol
Hssi1/0	In: 44.2 Mb/s Out: 44.2 Mb/s	Up	propPointToPointSerial

Daily | Hourly | Monthly

Daily Filtering for 63.237.13.1: All



IP Access Rate Reporting

IP Access Rate Inventory



The IP Access Rate Inventory report provides a list of all interfaces on the network with Rate Limiting Objects configured. Use the report to examine the configurations for entire customers or to compare individual interfaces on different devices. The interface and Rate Limit object details are updated after every poll cycle. The Customer list is refreshed every evening.

Customer	Customer Id
Customer 2	2
Customer 4	4
Customer Unassigned	-2

Rate Limiting Interfaces


Device	Interface	ifSpeed	Admin Status	Protocol
63.237.13.1	Hssi1/0	In: 44.2 Mb/s Out: 44.2 Mb/s	Up	propPointToPointSerial

Rate Limit Objects on '63.237.13.1: Hssi1/0'

Dir	RateIndex	Conform Act.	Exceed Act.	Limit	Rate	ExtLimit	Type	Accldx
Output	2	Continue	Drop	64,000	256,000	64,000	All	-

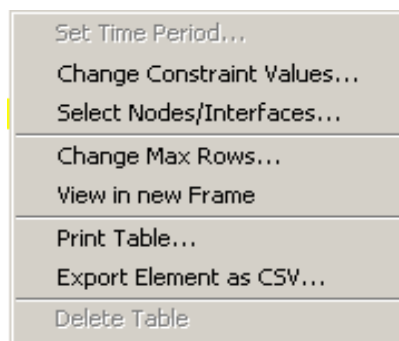
Editing Tables and Graphs

Any table or graph can be viewed in several ways. While the default view is usually adequate, you can easily change to a different view. If you are using Report Viewer, right-click the object to display a list of view options. If you are using the Web Access Server, follow these steps to change the default view of a table or graph:

- 1 Click **Preferences** on the links bar.
- 2 Expand **Reports** in the navigation frame.
- 3 Click **Viewing**.
- 4 Select the **Allow element editing** box.
- 5 Click **Apply**.
- 6 Click  (the Edit icon) next to the table or graph.

View Options for Tables

Right-clicking a table, or selecting the Edit Table icon if you are using the Web Access Server, opens a list of table view options.



Select **Set Time Period** to alter the relative time period (relative to now) or set an absolute time period. The Set Time Period window opens.

You may shorten the period of time covered by the table from, for example, 42 days to 30 days or to 7 days. If you are interested in a specific period of time that starts in the past and stops *before* yesterday, click **Use Absolute Time** and select a Start Time and an End Time.

Select **Change Constraint Values** to loosen or tighten a constraint, thereby raising or lowering the number of elements that conform to the constraint. The Change Constraint Values window opens. To loosen a constraint, set the value lower; to tighten a constraint, set the value higher.

The **Select Nodes/Interfaces** allows you to change the scope of the table by limiting the table to specific nodes, specific interfaces, or a specific group of nodes or interfaces. The Select Node Selection Type window opens.

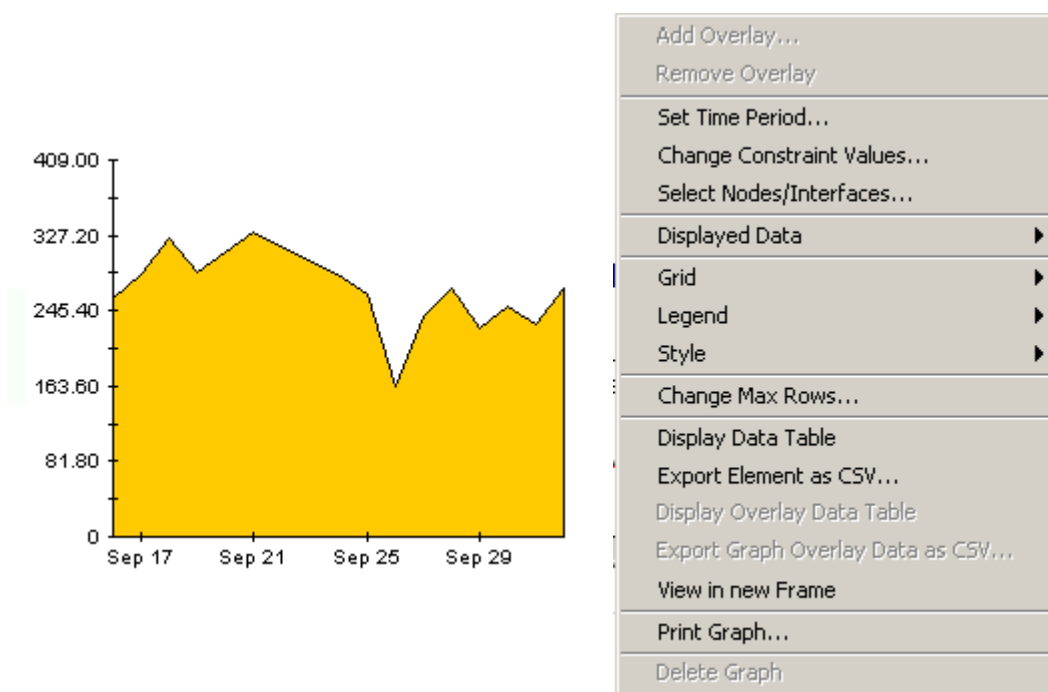
Change Max Rows increases or decreases the number of rows in a table. The default is 50. If you expand the default, the table may take more time to open. If you are trending a large network, using the default ensures that the table opens as quickly as possible.

View in new Frame opens the table in a Table Viewer window, shown below. If necessary, make the data in the table more legible by resizing the window.

Polled IP QoS Statistics Data - Input					Time Period
Over Previous 6 Hours					
Direction	IpPrecedence	Switched Bytes	Switched Pkts		
Input	0	105,688	675		Tue Oct 29 07:00 AM
Input	1	0	0		Tue Oct 29 07:00 AM
Input	2	0	0		Tue Oct 29 07:00 AM
Input	3	0	0		Tue Oct 29 07:00 AM
Input	4	0	0		Tue Oct 29 07:00 AM
Input	5	0	0		Tue Oct 29 07:00 AM
Input	6	600	5		Tue Oct 29 07:00 AM
Input	7	0	0		Tue Oct 29 07:00 AM
Input	0	98,334	638		Tue Oct 29 06:45 AM
Input	1	0	0		Tue Oct 29 06:45 AM
Input	2	0	0		Tue Oct 29 06:45 AM
Input	3	0	0		Tue Oct 29 06:45 AM
Input	4	0	0		Tue Oct 29 06:45 AM
Input	5	0	0		Tue Oct 29 06:45 AM
Input	6	0	0		Tue Oct 29 06:45 AM
Input	7	0	0		Tue Oct 29 06:45 AM
Input	0	97,539	648		Tue Oct 29 06:30 AM
Input	1	0	0		Tue Oct 29 06:30 AM
Input	2	0	0		Tue Oct 29 06:30 AM
Input	3	0	0		Tue Oct 29 06:30 AM
Input	4	0	0		Tue Oct 29 06:30 AM
Input	5	0	0		Tue Oct 29 06:30 AM
Input	6	120	1		Tue Oct 29 06:30 AM
Input	7	0	0		Tue Oct 29 06:30 AM
Input	0	90,744	564		Tue Oct 29 06:15 AM
Input	1	0	0		Tue Oct 29 06:15 AM
Input	2	0	0		Tue Oct 29 06:15 AM
Input	3	0	0		Tue Oct 29 06:15 AM
Input	4	0	0		Tue Oct 29 06:15 AM
Input	5	0	0		Tue Oct 29 06:15 AM
Input	6	0	0		Tue Oct 29 06:15 AM
Input	7	0	0		Tue Oct 29 06:15 AM
Input	0	103,775	656		Tue Oct 29 06:00 AM
Input	1	0	0		Tue Oct 29 06:00 AM
Input	2	0	0		Tue Oct 29 06:00 AM
Input	3	0	0		Tue Oct 29 06:00 AM
Input	4	0	0		Tue Oct 29 06:00 AM

View Options for Graphs

Right-clicking a graph, or clicking the Edit Graph icon if you are using the Web Access Server, opens the following list of view options.



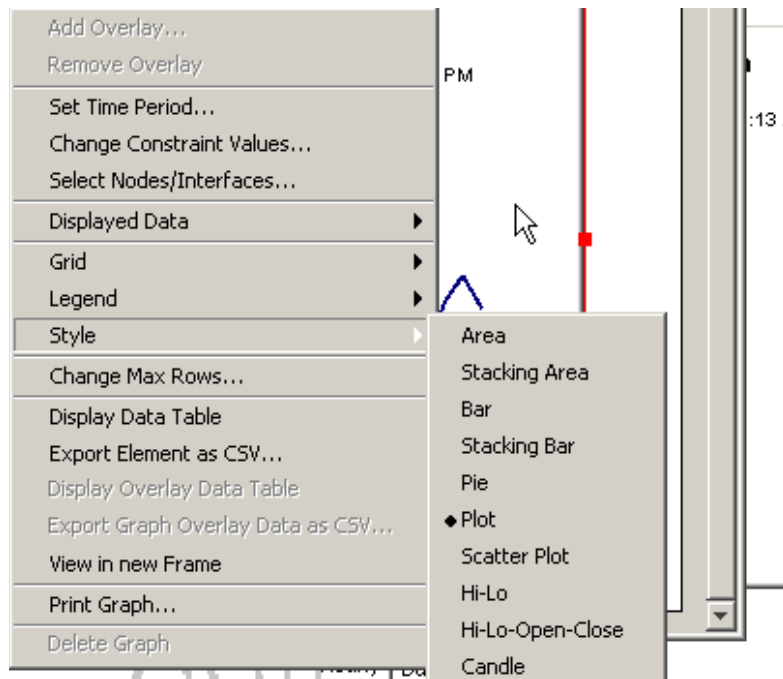
The following table provides details about each option.

Option	Function
Set Time Period	Same as the table option shown above.
Change Constraint Values	Same as the table option shown above.
Select Nodes/Interfaces	Same as the table option shown above.
Displayed Data	For every point on a graph, display data in a spreadsheet.
Grid	Add these to the graph: X axis grid lines Y axis grid lines X and Y axis grid lines
Legend	Delete or reposition the legend.
Style	See the illustrations below.
Change Max Rows...	Same as the table option shown above.
Display Data Table	See below.

Option	Function
Export Element as CSV...	Same as the table option shown above.
View in New Frame	Opens graph in a Graph Viewer window.
Print Graph	Same as the table option shown above.

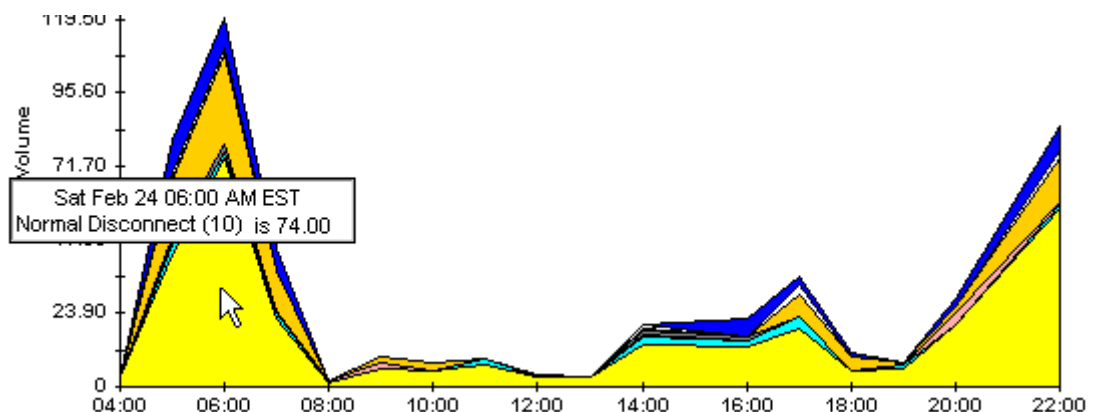
Style Options

Select **Style** to display a list of seven view options for graphs.



Style > Area

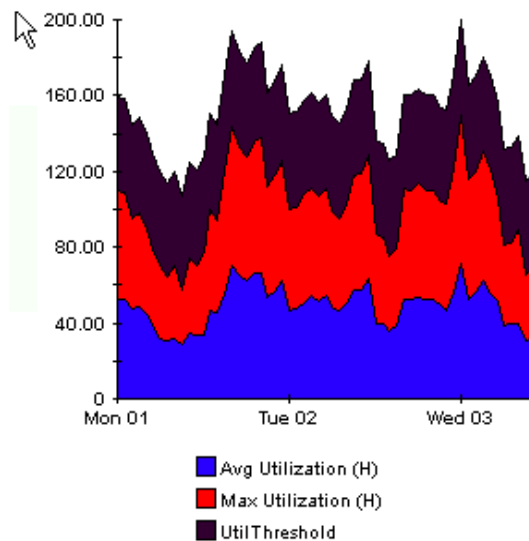
The plot or bar chart changes to an area graph. While relative values and total values are easy to view in this format, absolute values for smaller data types may be hard to see. Click anywhere within a band of color to display the exact value for that location



To shorten the time span of a graph, press SHIFT+ALT and use the left mouse button to highlight the time span you want to focus on. Release the mouse button to display the selected time span.

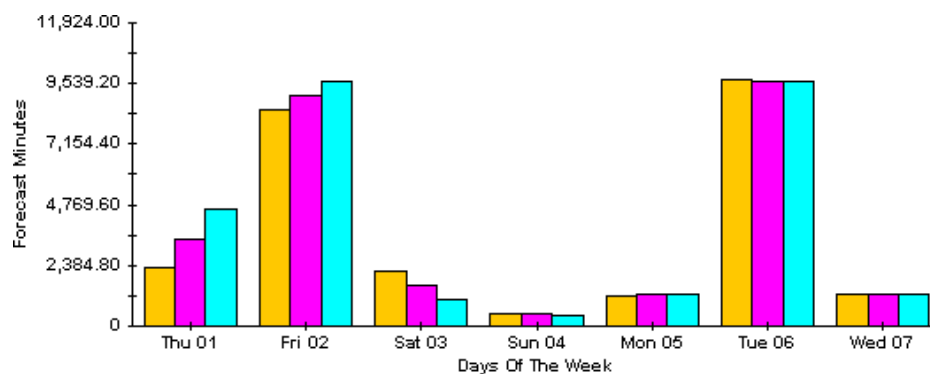
Style > Stacking Area

The area or plot graph changes to a stacking area graph. This view is suitable for displaying a small number of variables.



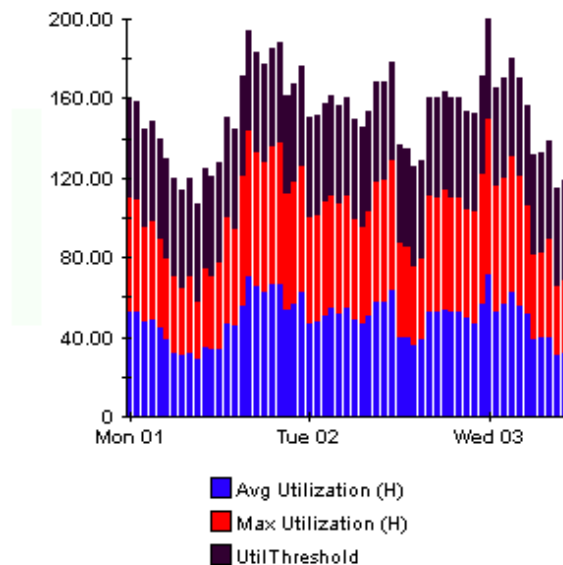
Style > Bar

The graph changes to a bar chart. This view is suitable for displaying relatively equal values for a small number of variables. There are three variables in the graph below.



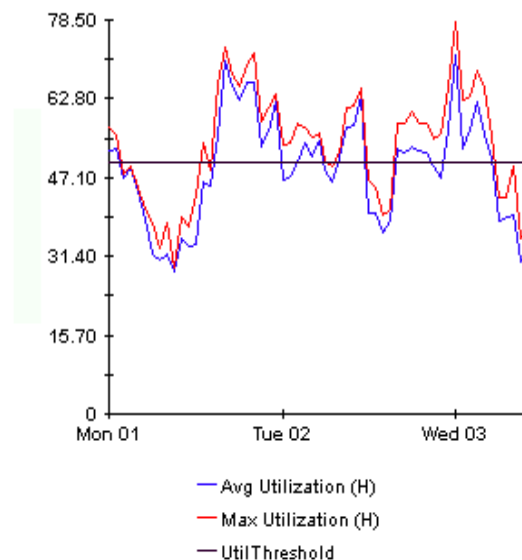
Style > Stacking Bar

The plot or area graph changes to a stacking bar chart. If you increase the width of the frame, the time scale becomes hourly. If you increase the height of the frame, the call volume shows in units of ten.



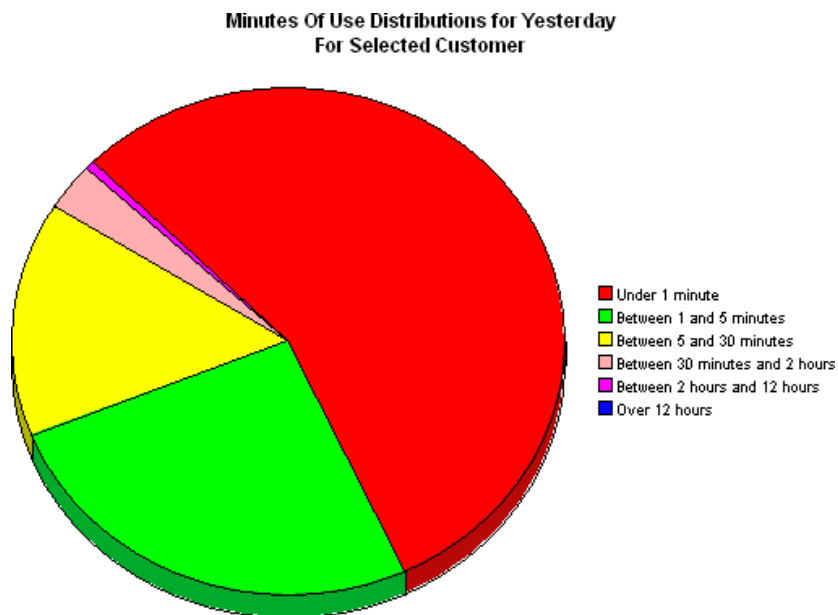
Style > Plot

Bands of color in an area graph change to lines. If you adjust the frame width, you can make the data points align with hour; if you adjust the frame height, you can turn call volume into whole numbers.



Style > Pie

An area graph becomes a pie chart. Bands in an area graph convert to slices of a pie and the pie constitutes a 24-hour period. This view is helpful when a small number of data values are represented and you are looking at data for one day.



If you are looking at data for more than one day, you will see one pie graph for each day.

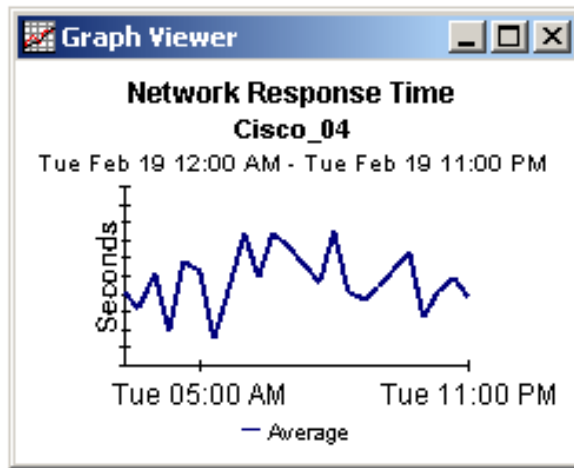
Display Data Table

This option changes a graph into a spreadsheet.

Data table for 8.1	
X Axis	Average
Tue Feb 19 ...	0.809
Tue Feb 19 ...	0.621
Tue Feb 19 ...	1.026
Tue Feb 19 ...	0.362
Tue Feb 19 ...	1.171
Tue Feb 19 ...	1.051
Tue Feb 19 ...	0.284
Tue Feb 19 ...	0.826
Tue Feb 19 ...	1.483
Tue Feb 19 ...	0.967
Tue Feb 19 ...	1.471
Tue Feb 19 ...	1.308
Tue Feb 19 ...	1.123
Tue Feb 19 ...	0.93
Tue Feb 19 ...	1.497
Tue Feb 19 ...	0.806
Tue Feb 19 ...	0.725

View in New Frame

The graph opens in a Graph Viewer window. Improve legibility by resizing the window.



acldx

Access List Number. The index to the access list if Rate Limit Type is either quickAcc or standardAcc.

conform act

Conform Action. The action taken for those packets that conformed with the rate limit.

exceed act

Exceed Action. The action taken for those packets that exceeded the rate limit.

ext limit

Extended limit. The excess burst size in bytes. The amount of traffic, in bytes, in excess of the burst limit that may be permitted by the rate limit rule.

filtered

A byte or packet that exceeded the rate limit and was dropped at the interface.

filtered/switched ratio

A low ratio indicates that few packets are being dropped, a high ratio indicates that many packets are being dropped. The end user wants to keep the ratio low. The service provider wants to prevent congestion on the backbone to a minimum. A high ratio could indicate that a customer needs a different service level.

limit

Traffic above the CIR that is instantly permitted by the rate limit rule. Synonymous with normal burst size measured in bytes.

Near Real Time (NRT)

A report containing a rolling average for performance over the last six hours. The most recent data in this report was collected by the most recent poll, which probably took place within the last 15 minutes.

rate data

This is an OVPI term. Rate data is data as it was collected; the actual samples, without summarizing the data by hour. Rate data appears in Near Real Time reports.

rate index

An arbitrary index for rate limit objects. It will increase as the list is traversed, but may skip.

rate

Transmission rate or sustained rate permitted by the rate limit rule.

rate limit object

A rule or regulator applied to traffic at the interface level, moving in a given direction. Rate limiters are defined by a series of settings and actions. Typically, lower priority traffic will pass by multiple limiters, while higher priority traffic will be subject to one limiter only.

switched

A byte or packet that was transmitted normally and was not dropped.

A

Add Database Wizard, **17**
applying constraints, **9**

B

burst rate, **21**

C

change max rows option, **31**
customer-specific reports, **9**

D

demo package, **10**
Display Data Table, **31**
displayed data option, **31**
distributed environments, **12**

E

editing parameters, **9**
exceptions (packet-drop ratio), **8**

G

graph view options, **29**
grid options, **31**
group accounts, **9**
group filters, **9**

H

Historical Activity Report, **8**

I

integration with NNM, **13**
Inventory Report, **8**
IPAccessRate_Reporting_Thresholds, **14**

IPAccessRate_Reporting_Thresholds, **13**
IPAR_DMFPProcess.pro, **18**
IPAR_Hourly_Process.pro, **18**

L

legend options, **31**

N

Near Real Time Activity, **7**
Near Real Time Interface Activity, **21**

P

packet-drop ratio, **8**

R

Recent Activity Report, **7**

S

style options for graphs, **31**
system clocks, **19**

T

table view options, **29**
Thresholds Module, **13**
trendcopy pull commands, **18**

U

upgrading an earlier version of IP Access Rate, **14**
Use Absolute Time, **29**

V

view in new frame, **30**

