

HP OpenView Performance Insight

Report Pack for Frame Relay User Guide

Software Version: 4.0

Reporting and Network Solutions



April 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 1999–2004 Hewlett-Packard Development Company, L.P.

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 Company. Windows® is a U.S. registered trademark of Microsoft® Corp. UNIX® is a registered trademark of The Open Group.

All other product names are the property of their respective trademark or service mark holders and are hereby acknowledged.

Support

Please visit the HP OpenView website at:

<http://openview.hp.com/>

There you will find contact information and details about the products, services, and support that HP OpenView offers.

You can go directly to the HP OpenView eCare website at:

<http://support.openview.hp.com/>

The eCare support site includes:

- Downloadable documentation
- Troubleshooting information
- Patches and updates
- Problem reporting
- Training information
- Support program information

contents

- Chapter 1 Overview** 7
 - Features and Enhancements 7
 - Folders and the Reports Inside 8
 - Ways to Customize Reports 9
 - Integration with Network Node Manager (NNM) 10
 - Sources for Additional Information 11

- Chapter 2 Installing and Uninstalling Packages** 13
 - Guidelines for a Smooth Installation 13
 - Prerequisite Tasks for Upgrade or Installation 15
 - Procedure for Upgrading an Earlier Version 17
 - Procedure for a New Installation 19
 - Viewing Reports 20
 - Procedure for Uninstalling Packages 21

- Chapter 3 Package Configuration** 23
 - Configuring Distributed Systems 23
 - Using Forms to Update Property Data 25
 - Bulk Property Imports (Provisioning) 29
 - Default Values for Thresholds 33

- Chapter 4 PVC EndPoint QuickView and Snapshot** 35

- Chapter 5 Port NRT QuickView and Snapshot** 39

- Chapter 6 Port Executive Summary** 43

- Chapter 7 PVC Configuration Problems** 47

- Chapter 8 Top Ten PVC Endpoints** 49

- Chapter 9 PVC Endpoint Forecast** 53

- Chapter 10 PVC Endpoint Availability** 57

Chapter 11 Editing Tables and Graphs	59
View Options for Tables	59
View Options for Graphs	61
Glossary	67
Index	71

Overview

Frame relay networks eliminate error checking at the link layer by assigning responsibility for packet retransmission to higher level protocols. To avoid congestion, and the discards that result from congestion, the nodes in a frame relay network forward flow-control alerts to neighboring nodes and, when necessary, alter the discard-eligibility status of individual packets.

Although detailed reports about a frame relay network cannot prevent the frame format errors and the discards that result from such errors, detailed reports can detect congestion and put network operators in a position to respond to troublesome conditions faster than was possible without this information. A faster response to congestion means fewer discards; fewer discards means fewer retransmissions; and fewer retransmissions means that the committed information rate (CIR) is safe and reliable.

This chapter covers the following topics:

- Features and enhancements
- Folders and the reports inside
- Ways to customize reports
- Integration with Network Node Manager (NNM)
- Sources for additional information

Features and Enhancements

The reports in the Frame Relay Report Pack display performance data for frame relay interfaces and permanent virtual circuits (PVCs). Reports about frame relay interfaces, also known as ports, display the following statistics:

- Number of frames sent/received
- Number of octets sent/received
- Number of frames discarded
- Number of frames discarded due to errors
- Utilization

Reports about PVCs display the following statistics:

- Number of committed-burst frames (color-coded green)
- Number of excess-burst frames (color-coded amber)
- Number of ODE frames (color-coded red)
- Number of frames indicating forward congestion (FECN)
- Number of frames indicating backward congestion (BECN)

This package includes Near Real Time reports, hourly reports, daily reports, monthly reports and reports that forecast performance 30, 60, and 90 days into the future. They also support multiple collection mechanisms (datapipes). The following datapipes are available:

- Frame Relay CPE Datapipe (for MIBs compliant with RFC2115)
- Ascend Frame Relay Datapipe (Lucent)
- Newbridge Frame Relay Datapipe (Alcatel)
- Stratacom Frame Relay Datapipe (Cisco WAN)

Frame Relay Report Pack version 4.0 provides support for Oracle as well as Sybase database software.

Folders and the Reports Inside

When you install this package, reports are created in the FrameRelay_Service directory. This directory has two child directories: Port and PVC. Reports in the Port directory relate to the logical port on the device, often equating to an entry in the ifTable of MIB-II. Reports in the PVC directory are one level more granular and show information about PVC endpoints or pairs of endpoints. An alphabetical list of reports follows, with a brief purpose statement for each type of report.

Availability. Highlights ports and PVCs reporting low availability for yesterday. The selection table is followed by hourly analysis of availability for a selected port or PVC.

Capacity Planning. Highlights Ports and PVCs that are expected to be either underutilized or overutilized 30 days from now.

Daily/Monthly QuickView. A list of overutilized ports and PVCs, followed by analysis of average and peak utilization for a specific port or PVC.

Daily/Monthly Snapshot. Same as the Daily QuickView, but limited in scope to specific ports or PVCs identified by the user just after launching the report.

Executive Summary/Executive Summary by Region. A comparison of baseline performance to F30 for all ports or all PVCs, followed by monthly, daily, and hourly analysis of aggregated volume and aggregated errors. The report begins with either a list of customers or a list of regions.

Forecast. Highlights ports and PVCs that are expected to have the highest utilization levels 30 days into the future. Rate of growth is calculated by dividing the F30 value by the baseline average. The baseline average is an average of daily busy hour values. Busy hour is defined in the Special Terms section of this chapter.

Hot Spots. Highlights ports and PVCs with high exceptions. The PVC version looks at utilization, congestion, and GOS exceptions; the port version looks at utilization, error, and discard exceptions.

NRT QuickView. A list of the most utilized ports and PVCs based on data collected (and averaged) over the last six hours. The selection table is followed by (1) analysis of peak and average utilization, (2) analysis of errors and discards, and (3) Grade of Service.

NRT Snapshot. Same as the NRT QuickView but limited in scope to ports or PVCs selected by the user when launching the report.

PVC Configuration Problems. A list of PVCs that have missing or incorrect CIR values. Any PVC with a CIR value of NULL or 0 will appear in this report.

Round Trip Delay. One version only of this report, for PVCs. Provides a list of PVCs experiencing the longest round trip delay. Not all datapipes collect this metric. See the release statement for the datapipe for details.

Top Ten. Identifies PVC endpoints and ports experiencing high utilization. Consists of two tables. The top table looks at yesterday's performance; the bottom table looks at performance for the previous 30 days.

Ways to Customize Reports

You can customize reports by applying group filters, by updating property data, and by editing parameters, tables, and graphs. In general, if you apply a group filter, your goal is to change the way the entire package appears to a group of users. If you edit a parameter, table, or graph, you are making a temporary change; any user is able to make this kind of change. For more information about editing tables and graphs, also known as selecting a different view option for tables and graphs, see [Chapter 11, Editing Tables and Graphs](#).

Group Filters

If you intend to share your reports with customers, or let divisions within your enterprise see division-specific performance data, you will want these reports to be customer-specific, containing data limited to one customer. Creating customer-specific reports is an administrator task that involves the following steps:

- Adding customer names and device locations using the import utility (or the forms) that come with the Common Property Tables package
- Creating a group account for all of the users affiliated with a particular customer
- Creating a group filter for the group account

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

Updating Property Data

For information on modifying PVC endpoint property data to be displayed in Frame Relay reports, see “[Using Forms to Update Property Data](#)” on page 25 and “[Bulk Property Imports \(Provisioning\)](#)” on page 29.

Report Parameters

If you edit a parameter, you are applying a constraint to the report with the intention of eliminating data you do not want to see. For example, 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; similarly, 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.

Constraining the contents of a report by editing parameters is completely optional and you may apply multiple constraints at once. Frame Relay 4.0 supports the following parameters:

- Customer Name
- Customer ID
- Location Name
- Location ID
- Device Name
- Port
- Dlci
- Make
- Model

Some reports support every parameter in this list, while most reports support a subset of this list. To edit parameters, click the **Edit Parameters** icon at the bottom right-hand corner of the report. When the **Edit Parameters** window opens, type the constraint in the appropriate field and then click **Submit**.

Tables and Graphs

By editing a table you can change the constraints, change the number of rows in the table, and display the contents of the table in a spreadsheet. The data in graphs is sometimes constrained by the amount of space available on the report. This problem can be easily overcome by re-displaying the graph in a new frame. These and other editing options for tables and graphs are covered in [Chapter 11, Editing Tables and Graphs](#).

Integration with Network Node Manager (NNM)

The threshold-oriented reports in the Frame Relay Report Pack (in practice this means the Near Real Time reports) can be launched from NNM in response to an alarm. If you want to implement this feature, you must install the integration package before proceeding with the installation of the Frame Relay Report Pack. The integration package synchronizes devices and interfaces between NNM and OpenView Performance Insight (OVPI) and modifies various menu options on NNM, making it possible for the NNM operator to perform context-based report launching.

In addition to installing the integration package on the NNM server, you will need to install the Thresholds Module and the thresholds sub-package that comes with the Frame Relay Report Pack. The Thresholds Module monitors the database for threshold breaches, while the thresholds sub-package responds to a threshold breach by taking one of several possible actions. The default action is to send a threshold trap to the NNM server.

Sources for Additional Information

The following documents are related to this manual:

- *Frame Relay CPE Datapipe 4.0 User Guide*
- *Interface Discovery Datapipe 2.0 User Guide*
- *Thresholds Module 5.0 User Guide*
- *Performance Insight / NNM Integration Module 2.0 User Guide*
- *Frame Relay Newbridge Datapipe 4.0 Release Statement*
- *Frame Relay Stratacom Datapipe 4.0 Release Statement*
- *Frame Relay Ascend Datapipe 4.0 Release Statement*
- *Newbridge Preprocessor 3.0 User Guide*
- *Newbridge Preprocessor 3.0 Release Statement*
- *Stratacom Preprocessor 3.0 User Guide*
- *Stratacom Preprocessor 3.0 Release Statement*

The following documents are good sources for information about OVPI, the platform for HP OpenView reporting solutions:

- *OpenView Performance Insight 5.0 Administration Guide*
- *OpenView Performance Insight 5.0 Guide to Building and Viewing Reports*
- *OpenView Performance Insight 5.0 Installation Guide*

Manuals for OVPI and the reporting solutions that run on OVPI can be downloaded from the following web site:

<http://support.openview.hp.com>

Select **Technical Support** > **Product Manuals** to reach the **Product Manuals Search** page. The user guides for OVPI are listed under **Performance Insight**. The user guides for reporting solutions are listed under **Reporting and Network Solutions**.

Each title under **Reporting and Network Solutions** indicates a date of publication. Because we post updated user guides to the **Product Manuals Search** page on a regular basis, be sure to check for updates on the web before using on older PDF that may no longer be current.

Installing and Uninstalling Packages

This chapter covers the following topics:

- Guidelines for a Smooth Installation
- Prerequisite Tasks for Upgrade or Installation
- Procedure for Upgrading an Earlier Version
- Procedure for a New Installation
- Viewing Reports
- Procedure for Uninstalling Packages

Guidelines for a Smooth Installation

When you select OVPI components for installation from the Reporting and Network Solutions (RNS) 5.0 CD, the install script will copy every OVPI package to the Packages directory on your system. When this process is complete, the install script will prompt you to run Package Manager, which enables you to select the packages you want to install. Before beginning to install packages, become familiar with the following guidelines.

Software Prerequisites

Version 4.0 of Frame Relay Report Pack has the following prerequisites:

- OVPI 5.0
- Any available Service Pack for OVPI 5.0
- Common Property Tables 3.0
- Interface Reporting Report Pack 4.0

Remove or Upgrade?

In general, if you are running an older version of any package you are about to install, you must either remove that older package or install the upgrade package. Typically, datapipes get removed because there is no upgrade path, while report packs get upgraded because there

is an upgrade path. Therefore, if you are running an older version of Frame Relay, you must install the appropriate upgrade package. If you are currently running an older version of a datapipe, you must uninstall the older version before installing the new version.

Datapipes

The following datapipes are available for Frame Relay data collection:

- Frame Relay CPE Datapipe (FRSCPE_Datapipe)
- Ascend Frame Relay Datapipe
- Newbridge Frame Relay Datapipe
- Stratacom Frame Relay Datapipe

You must install at least one datapipe. If you are already running an older version of a datapipe in this list, uninstall the older version before installing the new version.

Common Property Tables

The Frame Relay Service Report Pack 4.0 requires Common Property Tables version 3.0.

- If you are not currently running any version of Common Property Tables, simply let Package Manager install the correct version for you.
- If you are running an older version of Common Property Tables, upgrade to the appropriate version by installing the appropriate upgrade package. Do this *before* installing or upgrading the Frame Relay Service Report Pack.

Installing the upgrade package(s) for Common Property Tables is easy, but if you need assistance with the installation or if you want to know more about how this package operates, refer to the *Common Property Tables 3.0 User Guide*.

Integration with NNM: Threshold Alarms

If OVPI is integrated with NNM, you will probably want to install the optional thresholds sub-package, `FrameRelay_Service_Thresholds`.

This sub-package comes with the Frame Relay Report Pack. The thresholds sub-package contains customized threshold conditions specific to Frame Relay networks. When a threshold is breached, the thresholds sub-package responds by taking an action. If you have integrated OVPI with NNM, the action taken by the thresholds sub-package is to send an alarm to the NNM server.

If you select the thresholds sub-package for installation, Package Manager will automatically select the Thresholds Module, a package required by the thresholds sub-package. The Thresholds Module controls the actions that can be taken in response to a threshold condition. For information about configuring additional actions, refer to the *Thresholds Module User Guide*.

Distributed Environments

Keep these guidelines in mind when upgrading/installing the Frame Relay Report Pack on a distributed system:

- Make sure you have installed OVPI 5.0 on the central server and on each satellite server.
- Upgrade/install the report pack on the central server and on each satellite server.
- Upgrade/install the appropriate datapipe(s) on each server that polls for data. If the central server does not poll, do not upgrade/install the datapipe(s) on the central server.

After you have installed the Frame Relay Report Pack in a distributed environment, you must edit various process files that govern the way data is pulled from satellite servers by the central server. This task is covered in [Chapter 3, Package Configuration](#).

Prerequisite Tasks for Upgrade or Installation

Complete the following tasks before upgrading or installing the Frame Relay Report Pack:

- [Task 1: Extract the Packages](#)
- [Task 2: Upgrade to Common Property Tables 3.0](#)
- [Task 3: Uninstall Datapipes \(if necessary\)](#)

Task 1: Extract the Packages

To extract the Frame Relay Service Report Pack packages from the RNS CD to the Packages directory on your system, do the following:

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

On Windows, do the following:

- a Select **Control Panel > Administrative Tools > Services** .
- b Select OVPI Timer from the list of services.
- c From the Action menu, select **Stop**.

On 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.

Windows: The Main Menu automatically displays.

UNIX:

- a Mount the CD (if the CD does not mount automatically).
- b Navigate to the top level directory on the CD.
- c Run `./setup` .

- 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 Welcome window opens.

- 5 Do one of the following:

- If you want to upgrade Frame Relay now, complete tasks 2 and 3, then go to [“Procedure for Upgrading an Earlier Version”](#) on page 17.
- If you want to install Frame Relay for the first time now, go to [“Procedure for a New Installation”](#) on page 19.
- If you do not want to install or upgrade at this time, go to [Step 6](#).

- 6 Restart OVPI Timer.

On Windows, do the following:

- a Select **Control Panel > Administrative Tools > Services** .
- b Select OVPI Timer from the list of services.
- c From the Action menu, select **Start**.

On UNIX, as root, do one of the following:

- HP-UX: `sh /sbin/ovpi_timer start`
- Sun: `sh /etc/init.d/ovpi_timer start`

Task 2: Upgrade to Common Property Tables 3.0

The Frame Relay Service Report Pack requires Common Property Tables 3.0. Upgrade to Common Property Tables 3.0 *before* upgrading the Frame Relay Service Report Pack. If you need help with the upgrade, refer to the *Common Property Tables 3.0 User Guide*.

If this is a new installation of the Frame Relay Service Report Pack, install Common Property Tables 3.0 with the report pack. (This task is described in [“Procedure for a New Installation”](#) on page 19.)

Task 3: Uninstall Datapipes (if necessary)

If you already have an older version of one or more datapipes that you want to upgrade, you must first uninstall the old version. The following procedure explains how to remove an old version of a datapipe. You can install the latest version of any datapipe when you install or upgrade the report pack, as explained later in this chapter.

To remove the old version of a datapipe, do the following:

- 1 Log in to the system. On UNIX systems, log in as root.
- 2 If it is not already stopped, stop OVPI Timer and wait for processes to stop running.

On Windows, do the following:

- a Select **Control Panel > Administrative Tools > Services** .
- b Select OVPI Timer from the list of services.
- c From the Action menu, select **Stop**.

On UNIX, as root, do one of the following:

- HP-UX: `sh /sbin/ovpi_timer stop`
- Sun: `sh /etc/init.d/opvi_timer stop`

3 Start Package Manager.

- a** Launch OVPI and select **Management Console**.
- b** Select **Tools > Package Manager**.

The Package Manager Welcome window opens.

4 Click **Next**.

The Packages Location window opens.

5 Click the **Uninstall** button and click **Next**.

The Report Undeployment window opens.

6 Click **Next**.

The Package Selection window opens.

7 Click the check box next to the name of each datapipe that you want to uninstall, for example, Ascend_FR_Datapipe or FRSCPE_Datapipe.

8 Click **Next**.

The Selection Summary window opens.

9 Click **Uninstall**.

The Progress window opens. When removal is complete, a message appears.

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

Now that you have completed the prerequisite tasks, do one of the following:

- To upgrade Frame Relay Service Report Pack, go to [“Procedure for Upgrading an Earlier Version”](#) on page 17.
- To install Frame Relay Service Report for the first time, go to [“Procedure for a New Installation”](#) on page 19.

Procedure for Upgrading an Earlier Version

You have several upgrade options for Frame Relay, and each option is easy to perform. Your choices are listed in the following table.

Existing Installation	Upgrade Package To Use	Finished Installation
Frame Relay 2.0	UPGRADE_FRS_2.x_to_3.0	Frame Relay 3.0
Frame Relay 2.5	UPGRADE_FRS_2.x_to_3.0	Frame Relay 3.0
Frame Relay 3.0	UPGRADE_FRS_3.x_to_4.0	Frame Relay 4.0



If you are currently running version 2.0 or 2.5, you must perform the upgrade procedure twice: once to upgrade to version 3.0 and a second time to upgrade to version 4.0.

You must complete the tasks in “[Prerequisite Tasks for Upgrade or Installation](#)” on page 15 before beginning the following procedure. If Package Manager is already running, begin this procedure at [Step 5](#).

- 1 Log in to the system. On UNIX systems, log in as root.
- 2 If your system is distributed, disable trendcopy.
- 3 Launch OVPI and select **Management Console**.
- 4 From the Tools menu, select **Package Manager**.
The Package Manager Welcome window opens.
- 5 Click **Next**.
The Packages Location window opens.
- 6 Click the **Install** button.
- 7 Approve the default installation directory or select a different directory if necessary.
- 8 Click **Next**.
The Report Deployment window opens.
- 9 Type your username and password for the OVPI Application Server.
- 10 Click **Next**.
The Package Selection window opens.
- 11 Click the check box for the upgrade package you require. Package Manager may require you to upgrade other dependent packages at this stage.
You can also select the datapipe(s) you want to install at this time, or you can install them later. Data to populate the reports will be collected only after you install a current datapipe.
- 12 Click **Next**.
The Type Discover window opens.
- 13 To run Discover immediately after package installation, accept the default and click **Next**.
The Selection Summary window opens.
- 14 Verify that the contents of this window are correct and click **Install** to begin the installation process.
The Installation Progress window opens. When installation is complete, a message appears.
- 15 Click **Done** to return to the Management Console.

16 Restart OVPI Timer.

On Windows, do the following:

- a** Select **Control Panel > Administrative Tools > Services** .
- b** Select OVPI Timer from the list of services.
- c** From the Action menu, select **Start**.

On UNIX, as root, do one of the following:

- HP-UX: `sh /sbin/ovpi_timer start`
- Sun: `sh /etc/init.d/ovpi_timer start`

Procedure for a New Installation

You must complete the tasks in “[Prerequisite Tasks for Upgrade or Installation](#)” on page 15 before beginning the following procedure. If Package Manager is already running, begin this procedure at [Step 5](#).

- 1** Log in to the system. On UNIX systems, log in as root.
- 2** If your system is distributed, disable trendcopy.
- 3** Launch OVPI and select **Management Console**.
- 4** From the Tools menu, select **Package Manager**.
The Package Manager Welcome window opens.
- 5** Click **Next**.
The Packages Location window opens.
- 6** Click the **Install** button.
- 7** Approve the default installation directory or select a different directory if necessary.
- 8** Click **Next**.
The Report Deployment window opens.
- 9** Type your username and password for the OVPI Application Server.
- 10** Click **Next**.
The Package Selection window opens.
- 11** Click the check box for the following packages:
 - FrameRelay_Service
 - At least one of the following datapipes:
 - Ascend_FR_Datapipe
 - FRSCPE_Datapipe
 - Newbridge_FR_Datapipe
 - Stratacom_FR_Datapipe
 - If you are implementing thresholding, select the FrameRelay_Service_Thresholds sub-package.

12 Click **Next**.

The Type Discover window opens.

13 To run Discover immediately after package installation, accept the default and click **Next**.

The Selection Summary window opens.

14 Verify that the contents of this window are correct, then click **Install** to begin the installation process.

The Installation Progress window opens. When installation is complete, a message appears.

15 Click **Done** to return to the Management Console.**16** Restart OVPI Timer.

On Windows, do the following:

- a** Select **Control Panel > Administrative Tools > Services** .
- b** Select OVPI Timer from the list of services.
- c** From the Action menu, select **Start**.

On UNIX, as root, do one of the following:

- HP-UX: `sh /sbin/ovpi_timer start`
- Sun: `sh /etc/init.d/ovpi_timer start`

Most report packs include a demo package. The demo package is independent of other packages and can be installed at any time. Demo reports are static; the data does not change from day to day, but the linking works. Tables are linked to graphs, and you can experiment with various options for viewing tables and graphs.

Viewing Reports

Before reports can be viewed using a web browser, they must be deployed. When you installed the Frame Relay Report Pack, you enabled the Deploy Reports option. As a result, Frame Relay reports are deployed to the Application Server and are now available for viewing on the web.

If the client component of OVPI was installed on your system, you have access to the Report Viewer and Report Builder applications, and you can use these applications to display reports. If the client component was not installed on your system, web access to reports is your only means of access. You can find more information about the client component in the *OpenView Performance Insight Installation Guide*.

Seeing Performance Data

Some reports populate with data sooner than others. The first report to populate with data is the Near Real Time report. You will begin to see data in this report immediately after the first data collection completes.

Any report that begins with an analysis of yesterday's performance will need at least one full day's worth of data before results are viewable. You will begin to see forecast data soon, within a few days. However, reliable forecast data will not be available for several weeks.

Procedure for Uninstalling Packages

If you remove 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 the Frame Relay Report Pack and any datapipe that depends on the report pack:

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

On Windows, do the following:

- a Select **Control Panel > Administrative Tools > Services** .
- b Select OVPI Timer from the list of services.
- c From the Action menu, select **Stop**.

On UNIX, as root, do one of the following:

- HP-UX: `sh /sbin/ovpi_timer stop`
- Sun: `sh /etc/init.d/ovpi_timer stop`

- 3 Open the Management Console.
- 4 From the Tools menu, select **Package Manager**.
The Package Manager Welcome window opens.
- 5 Click **Next**.
The Packages Location window opens.
- 6 Select the **Uninstall** button and click **Next**.
The Report Undeployment window opens.
- 7 Keep the defaults and click **Next**.
The Package Selection window opens.
- 8 Click the check box next to the package named `FrameRelay_Service`.
Any dependent packages will be selected automatically.
- 9 Click **Next**.
The Selection Summary window opens.
- 10 Click **Uninstall**.
The Progress window opens. When removal is complete, a message appears.
- 11 Click **Done** to return to the Management Console.
- 12 Restart OVPI Timer.

On Windows, do the following:

- a Select **Control Panel > Administrative Tools > Services** .
- b Select OVPI Timer from the list of services.
- c From the Action menu, select **Start**.

On UNIX, as root, do one of the following:

- HP-UX: `sh /sbin/ovpi_timer start`
- Sun: `sh /etc/init.d/ovpi_timer start`

Package Configuration

This chapter covers the following topics:

- [Configuring Distributed Systems](#)
- [Using Forms to Update Property Data](#)
- [Bulk Property Imports \(Provisioning\)](#)
- [Default Values for Thresholds](#)

Skip the [Configuring Distributed Systems](#) section if you are running the Frame Relay package on a stand-alone system.

Configuring Distributed Systems

If you are running the Frame Relay Report Pack in a distributed system, you installed the report pack, the Thresholds Module, Common Property Tables, and Interface Reporting packages on the central server. If the central server is polling, you also installed one or more Frame Relay datapipes and the packages they depend upon.

On each satellite server you installed the report pack, a set of datapipes, and the required dependency packages. You now need to configure the central server and each satellite server. This is done by editing various files on the central server and each satellite server.

Configuring the Central Server

To configure the central server, perform the following tasks:

- Task 1: Set up connections with satellite server databases
- Task 2: Configure trendcopy pull commands and modify the entry in OVPI Timer

Task 1: Set up connections with satellite server databases

- 1 Select **HP OpenView > Performance Insight > 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 hostname 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 finish adding databases.

Task 2: Configure trendcopy pull commands

- 1 Open the following file:
`$DPIPE_HOME/scripts/FrameRelay-Switch_trendsum_hourly.pro`
- 2 Comment out the pvc and port summaries by adding the comment sign (“#”) before the **begin** and **end** statements.
- 3 Configure trendcopy pull commands from the central server for each satellite server. That is, uncomment the copy commands in the `hourly_copy` block and modify them as follows:
 - Replace `SATELLITE_SERVER_1_DATABASE` with the satellite server name
 - Replace `THIS_MACHINE_DATABASE` with the central server name
- 4 If there is more than one satellite server, create and configure new hourly copy commands for each additional machine.
- 5 If you want to copy rate data from satellite servers to the central server, configure trendcopy pull commands from the central server for each satellite server. Within the same file (`$DPIPE_HOME/scripts/FrameRelay-Switch_trendsum_hourly.pro`), uncomment the copy commands in the `rate_copy` block and modify them as follows:
 - Replace `SATELLITE_SERVER_1_DATABASE` with the satellite server name
 - Replace `THIS_MACHINE_DATABASE` with the central server name
- 6 If there is more than one satellite server, create and configure new hourly copy commands for each additional machine.

➤ Copying polled rate data from each satellite server every hour increases traffic between satellite servers and the central server; copying polled rate data from each satellite server also increases the central server’s processing load.

- 7 Make sure that all system clocks are synchronized.

➤ Step 7 is extremely important. In a distributed environment, linked processes must execute in exact sequence across independent machines.

Configuring a Satellite Server

Follow these steps to configure a satellite server.

▶ Do not perform this procedure if the satellite server is performing local reporting or if the thresholds sub-package is not installed on the satellite server.

- 1 Switch off daily aggregations by commenting out the lines referencing *FrameRelay-Switch_Daily.pro* in the *\$DPIPE_HOME/lib/trendtimer.sched* file.
- 2 Modify the *FameRelay-Switch_Hourly.pro* trendtimer entry in the *\$DPIPE_HOME/lib/trendtimer.sched* file. By default, this process starts at 40 minutes after the hour. To make sure the satellite server completes hourly summarizations before the central server begins hourly summarizations, change the start time from 1:00+40 to 1:00+25.
- 3 Configure polling policies for the Frame Relay CPE Datapipe, making sure that each network device is polled by one satellite server only.
- 4 Make sure that all system clocks are synchronized.

▶ Step 4 is extremely important. In distributed environments, linked processes must execute in exact sequence across independent machines.

Using Forms to Update Property Data

This section discusses the following forms:

- Change PVC Endpoint Customer
- Change PVC Endpoint Location
- Change PVC Endpoint Description
- Change PVC Endpoint Configuration

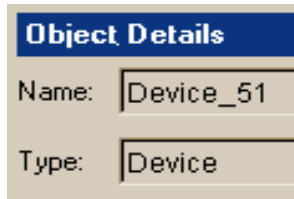
These forms are used to modify PVC property objects. Forms are available with OVPI 4.6 and higher. Forms do not allow you to create new PVCs, only to modify existing ones.

Forms are context-sensitive and will display a list of every PVC that was selected in the object manager before the form was launched. The only PVCs that will be updated by the form are the PVCs that were highlighted. Use the forms carefully. Assigning the same property value to multiple PVCs is easy to do, but are you sure that is what you want to do?

▶ To create new nodes, locations, or customers, or to modify existing nodes, locations, or customers, use the forms that come with the Common Property Tables package. For details, see the *Common Property Tables User Guide*.



The Frame Relay forms modify properties for PVCs that already exist in the database. To launch a form, click the **Objects** icon in the panel on the left side of the Management Console window. The Object/Property Management view opens. Object Manager shows a list of objects. The type of object presented depends on which Object Manager View is open.



The default view is the Device view, showing a list of devices. The Customer view shows a list of customers, the Location view shows a list of locations. To change the view, select **View > Change View** and use the pop-up window to select a different view.

When the type of object you are interested in updating is displayed, select the particular object you would like to update. When you select the object, **Object Specific Tasks** will appear in the window on the right. Double-click the update task to open the

update form.

All OVPI forms are sensitive to the object that is currently selected. When the form opens, the data displayed is limited to the object you selected in the Management Console. The object could be an individual PVC endpoint, or a Device, or some other managed element such as a Customer. The currently selected object is displayed in the Object Details window.

Change PVC Customer

Use the Change PVC Customer form to update the customer assigned to a PVC Endpoint. The selection list will include PVC endpoints for the object you have chosen to modify. Highlight only the endpoints you wish to make the change to. Use the drop down menu to choose a customer. Click **Apply** to save your changes. Note that if you assign a customer to an interface, it will trickle down to the PVC endpoints on that interface after a short time, if those PVC endpoints do not already have a customer assigned to them.

Frame Relay
Change PVC Customer

This form assigns the selected customer name to the list of highlighted PVC endpoints shown below. Be careful not to apply it to too many.

Device	Port	Dci
Device_51	Serial4/1/3:0	200
Device_51	Serial4/1/3:1	201
Device_51	Serial4/1/3:2	202
Device_51	Serial4/1/3:3	203

Customer:


OK Apply Cancel

Change PVC Location

You can use the Change PVC Location form to update the location assigned to a PVC Endpoint. The selection list will include PVC endpoints for the object you have chosen to modify. Highlight only the endpoints you wish to make the change to. Use the drop down menu to choose a location. Click **Apply** to save your changes. Note that if you assign a location to an interface, the location will trickle down to the PVC endpoints on that interface after a short time, if those endpoints do not already have a location assigned to them.

Frame Relay

Change PVC Location



This form assigns the selected location to the list of highlighted PVC endpoints shown below. Be careful not to apply it to too many.

Device	Port	Dlci
Device_51	Serial4/1/3:0	200
Device_51	Serial4/1/3:1	201
Device_51	Serial4/1/3:2	202
Device_51	Serial4/1/3:3	203


Location

Change PVC Description

Use the Change PVC Description form to update the description of a PVC Endpoint. The description is often used to display connectivity or customer-related textual information. The selection list will include PVC endpoints for the object you have chosen to modify. Highlight only the endpoints you wish to make the change to. Use the text entry box to enter a new description. To save your changes, click **Apply**.

Frame Relay

Change PVC Description



This form assigns the selected description to the list of selected PVC endpoints shown below. Be careful not to apply it to too many.

Device	Port	Dlci
Device_51	Serial4/1/3:0	200
Device_51	Serial4/1/3:1	201
Device_51	Serial4/1/3:2	202
Device_51	Serial4/1/3:3	203

Description

Change PVC Configuration

Use the Change PVC Configuration form to update all of the properties relating to a single PVC endpoint. Endpoints with no CIR set will be highlighted in red. Descriptions of each of the attributes is shown on the form. Modify each of the properties for the selected endpoint - to save your changes, click **Apply**.

Bulk Property Imports (Provisioning)

The Frame Relay Report Pack allows you to store details about the PVCs you are managing, referred to as PVC endpoint properties. There are two primary ways to modify the properties of a PVC endpoint. One is to use OVPI forms, as described in “[Using Forms to Update Property Data](#)” on page 25. The alternative method is to use the supplied property import interface. You can use this interface to add the following information to managed PVC endpoints within the OVPI system and, thus, reports:

- Committed Information Rate (CIR)
- PVC endpoint pairs
- Customers and customer IDs
- Locations and location IDs
- PVC threshold percentage values for FECN, BECN and Discard Eligible frame counts.

CIR values are needed to calculate utilization for PVC endpoints, while ifSpeed is needed to calculate port utilization. If you are already collecting these values from all your network elements, and they are correct, you may skip this section. Use the PVC Configuration Problems report to verify if CIR and PVC Id have been set for all of your pvc endpoints.

To add the preceding list of properties to reports, or to correct incorrect properties, do one of the following:

- Use the file format guidelines provided later in this chapter to create your own property import file, then import it.
- Export existing data from the `K_frswitch_pvc` property table, modify it, and then import the new file.

If you choose to export data from OVPI, follow these steps:

- 1 Navigate to the `DPIPE_HOME/scripts` directory.
- 2 Type: `trend_proc -f FrameRelay-Switch_exportdata.pro`

This command calls an OVPI process that generates a tab-delimited flat file and, if the default SourceDirectory has not been changed, stores it in the PropertyData directory under `FrameRelay_Switch.ap`. The tab-delimited flat file has the following name:

```
FrameRelay_Switch_PVC_Property.dat.<timestamp>
```

- 3 Edit the tab-delimited file, adding new values or correcting incorrect values.
- 4 Import the file you just edited.


The export step can take place whenever you want and as often as you want. The import step is actually a scheduled process, it operates automatically every hour, and it operates in the same way whether you are working with a file you created yourself or a file that was exported from OVPI and then edited.

To run the import process automatically, just make sure that your property import file is stored where OVPI expects to find it. If the default has not been changed, the following SourceDirectory path will be used:

{DPIPE_HOME}/data/PropertyData/

FrameRelay Service

Change PVC Configuration



Use this form to update the properties for a PVC.

PVC Id : The unique identifier used to associate PVC endpoints of a PVC. Assign the same value to each endpoint. This value must be set for end to end reports to populate, but is not essential. A value of -2 means it is not currently set.

CIR : The Committed Information Rate for the PVC. Used to calculate utilization in reports. Sometimes provided by the network if the appropriate MIBs are supported by the device. This value must be set for fundamental PVC reporting to function correctly.

FECN % : The percentage of frames which are marked with Forward Error Congestion Notification above which a threshold alarm will be generated.

BECN % : The percentage of frames which are marked with Backward Error Congestion Notification above which a threshold alarm will be generated.

DE In Deviation % : The allowable percentage of inbound frames marked DE (above the average), above which a threshold alarm will be generated.

DE Out Deviation % : The allowable percentage of outbound frames marked DE (above the average), above which a threshold alarm will be generated.

Current PVC Property Settings

Device	Port	Dlci	CIR	PVC Id	FECN %	BECN %	DE In Dev. %	DE Out Dev. %	Avg DE In %	Avg DE Out %
Device_51	Serial4/1/3:0	200	0	Not set	2	2	10	10	0	0
Device_51	Serial4/1/3:1	201	0	Not set	2	2	10	10	0	0
Device_51	Serial4/1/3:2	202	0	Not set	2	2	10	10	0	0
Device_51	Serial4/1/3:3	203	0	Not set	2	2	10	10	0	0

Description

CIR Allowable DE In Deviation %

PVC Id Allowable DE Out Deviation %

Customer Name FECN % Threshold

Location Name BECN % Threshold

OVPI uses a `.teel` file in the `DPIPE_HOME/lib` directory to locate the property import file. The name of the TEEL file is `FrameRelay_Switch_PVC_Property.teel`.

Clearly, the TEEL file must provide the correct `SourceDirectory` path. The `SourceDirectory` path may have been changed after the Frame Relay Report Pack was installed.

To run the import process manually, ahead of the scheduled automatic import process, do the following:

- 1 Navigate to the `DPIPE_HOME/scripts` directory.
- 2 Type: `trend_proc -f FrameRelay-Switch_importdata.pro`

Add a New Row or Modifying an Existing Row?

If you intend to modify an existing entry in a property table, the first three columns in the import file—Node name, Port and DlcI—must match the values of a row in the property table. For example, if you have a Node Name of `router1` with a Port value of `1` and a DlcI of `23` in your PVC property file, there needs to be a matching Node name of `router1` with a Port value of `1` and a DlcI of `23` in the `KV_frswitch_pvc` property table view. If there is no match, a new row will be added to the property table.

File Format Guidelines

If you create your own file, you have to either generate the file automatically from a network provisioning database, or build the file from scratch using a spreadsheet program. If you create your own tab-delimited file, obey these rules:

- Use the formats described below.
- Use all the columns shown in the file format tables.
- Use the columns in the same order.
- Make sure your file does not contain quotation marks.
- Note that if a `cust_id` value is already in use for a different `customer_name`, the existing `customer_name` will not be modified to that which is included in the import file. `cust_id` is the unique field that binds elements to customers.
- Note that if a `location_id` value is already in use for a different `location_name`, the existing `location_name` will not be modified to that which is included in the import file. `location_id` is the unique field that binds elements to locations.
- Note that the `node_name`, `port`, and `DlcI` columns are the unique identifiers of the property table and must contain the same values that exist on the polled PVC.
- If you use a spreadsheet application, export the data from the spreadsheet back into a tab-delimited file when you finish.
- If you have a previously generated PVC import file from a Frame Relay version 2.0 installation, you may use it for your current report pack; the import mechanism will convert it to the new format and add the extra columns required.

The following table describes the format of the PVC property import file.

COLUMN NAME	DESCRIPTION
Node name	The device name for the PVC. Example: 'router1'
Port	The port name for the PVC. Often the ifIndex value, or the unique name of the interface. Example: '101' or 'Serial0/1'. You may refer to an interface by the ifIndex during import if you do not know the unique identifier being used by the application for re-indexing purposes; however, the system will always use the unique name for the export procedure.
Dlci	The numerical Dlci for this PVC endpoint. Example: '123'
CIR	The Committed Information Rate in bits/second Note: The report pack requires this value. Some devices provide it directly from the network. Check the PVC Configuration Problems report to see if any are not set. Example '64000'
RevCIR	Reverse Committed Information Rate in bits/second. Example '64000' Not used in default reports.
cust_id	Unique integer value for each customer name Reserved values include -2 and -1 Value should always be greater than 0. Example: '30'
location_id	Unique integer value for each location name Reserved values include -2 and -1 Value should always be greater than 0. Example: '25'
pvc_id	Unique integer value for a pair of PVC endpoints. Used to associate PVC endpoints together. Check the PVC Configuration Problems report to see if any are not set. The default value of -2 indicates it has not been set. Example: '55'
location_name	Location name associated with location_id value. Example "North London". If the associated location_id already exists with a different location_name then this value will be discarded. Use the Common Properties package to update location_name / location_id value pairs.

COLUMN NAME	DESCRIPTION
customer_name	Customer name associated with cust_id value. Example "Large Corp 1". If associated cust_id already exists with a different customer_name then this value will be discarded. Use the Common Properties package to update customer_name / cust_id value pairs.
dsi_descr	A description for the PVC endpoint Example: "Service Level 1" or "Failover PVC"
FECN Percent	The allowable percentage of packets which can be marked FECN above which a threshold event will be generated.
BECN Percent	The allowable percentage of packets which can be marked BECN above which a threshold event will be generated.
DE In Deviance	The percentage deviation of packets above yesterdays average DE In packet ratio which is considered within normal limits. A ratio of in packets marked DE above (the average value yesterday + this percentage) will result in a threshold event being generated.
DE Out Deviance	The percentage deviation of packets above yesterdays average DE Out packet ratio which is considered within normal limits. A ratio of out packets marked DE above (the average value yesterday + this percentage) will result in a threshold event being generated.

Default Values for Thresholds

The Frame_Relay_Thresholds sub-package imposes a sets of thresholds for PVC endpoints. When performance reaches one of these default thresholds, the thresholds sub-package sends a trap to the network management system. The following tables describes the condition behind each threshold and the severity of the alarm sent in response to the condition.

The following table provides a list of exception thresholds for PVC endpoints

METRIC	THRESHOLD	SEVERITY?
DE_In_Ratio_Exceeded	Dynamic value - N% above yesterdays average DE In ratio. N defaults to 10 if not set by the user (DE In Deviance).	MEDIUM
DE_Out_Ratio_Exceeded	Dynamic value - N% above yesterdays average DE Out ratio. N defaults to 10 if not set by the user (DE Out Deviance).	MEDIUM

METRIC	THRESHOLD	SEVERITY?
FECN_In_Ratio_Exceeded	The ratio of inbound packets marked FECN to the total number of packets has exceeded the allowable threshold during this poll cycle (FECN Percent).	MEDIUM
FECN_Out_Ratio_Exceeded	The ratio of outbound packets marked FECN to the total number of packets has exceeded the allowable threshold during this poll cycle (FECN Percent).	MEDIUM
BECN_In_Ratio_Exceeded	The ratio of inbound packets marked BECN to the total number of packets has exceeded the allowable threshold during this poll cycle (BECN Percent).	MEDIUM
BECN_Out_Ratio_Exceeded	The ratio of outbound packets marked BECN to the total number of packets has exceeded the allowable threshold during this poll cycle (BECN Percent).	MEDIUM

No intervention on your part is necessary to enable the exception threshold values in the preceding tables. However, if you want to enable multiple types of traps or set up multiple trap destinations, you will need to make changes to the Thresholds Module. These changes are explained in the *Thresholds Module User Guide*.

PVC EndPoint QuickView and Snapshot

QuickView and Snapshot reports are available in three time ranges:

- Daily — showing hourly statistics for the previous day
- Monthly — showing daily statistics for the previous month
- Near Real Time — showing averages compiled over the previous six hours.

This type of report focuses on utilization in the selection table but provides Grade of Service, frame type and utilization frequency measurements in the graphs below for the selected element. The selection table at the top drives the contents of the other areas on the report.

The data in the selection table shows averages for yesterday as a whole while the graphs and charts are on an hourly basis for yesterday through to the most recently summarized hour today. The selection table contains average, peak and busy hour utilization values. In the context of this report these columns have the following meaning:

- Average — the average utilization for the entire day
- Peak — the maximum utilization value recorded for a poll cycle during the entire day
- Busy Hour — the hour of day during which the highest hourly average was recorded.

When you select the QuickView version of any report, it displays immediately, the contents are limited only by the parameters you have applied, or by the object model. When you open a Snapshot report, you will be prompted to designate a subset of elements for viewing. In a very large network, using the Snapshot report will reduce the amount of data in the report and allow you to focus on the devices that interest you.

Frame Relay Service

PVC Endpoint Daily QuickView



This report gives you a detailed look at the performance of a single PVC endpoint when just the facts are needed. Drilldowns show utilization, GOS, percentage of congestion, and percentage of frame types. Use the parameters to filter the report contents.

Daily Top Ten PVC Endpoints Based on Utilization

Mon Mar 17 2003

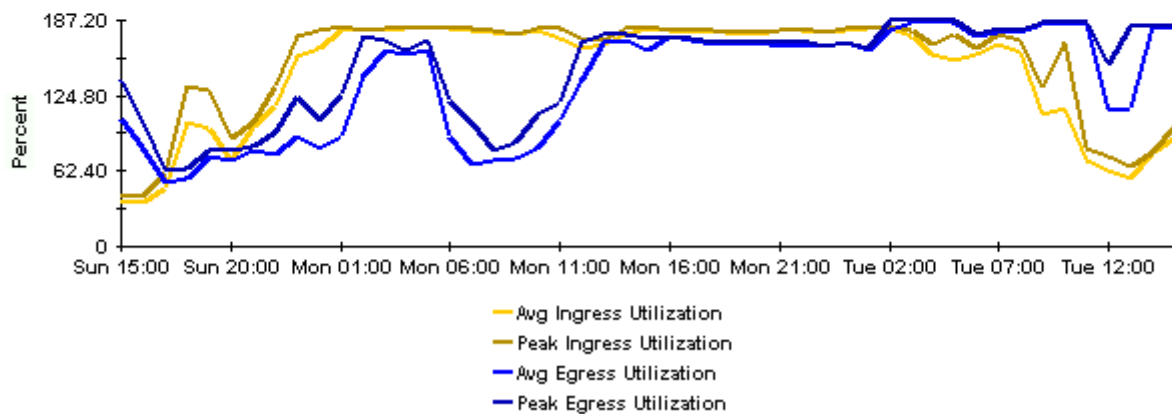
Device Name	Port	DLCI	CIR	Ingress Utilization	Egress Utilization	Peak Ingress Utilization	Peak Egress Utilization	Busiest Ingress Hour	Busiest Egress Hour	Hour
Device_185	2	36	10.0 Kb/s	925.10	275.21	1268.75	1027.73	1262.83	880.12	Mon
Device_185	2	37	10.0 Kb/s	450.69	499.39	981.96	1059.57	737.30	877.08	Mon
Device_185	2	33	10.0 Kb/s	9.42	356.39	181.30	6832.72	148.68	5899.61	Mon
Device_185	2	41	10.0 Kb/s	312.82	84.50	1221.55	1793.23	769.88	821.54	Mon
Device_156	2	16	768.0 Kb/s	176.46	136.34	182.33	176.08	180.73	173.48	Mon
Device_157	2	16	768.0 Kb/s	176.46	136.34	182.37	176.22	180.71	173.47	Mon
Device_164	2	16	768.0 Kb/s	176.46	136.34	182.26	176.06	180.70	173.46	Mon
Device_173	2	16	768.0 Kb/s	176.46	136.34	182.33	176.05	180.74	173.49	Mon
Device_163	2	16	768.0 Kb/s	176.46	136.34	182.27	176.08	180.71	173.51	Mon
Device_161	2	16	768.0 Kb/s	176.46	136.34	182.24	176.12	180.71	173.51	Mon

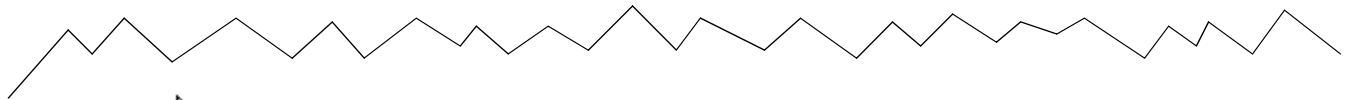
Device Make	Model	Description	PVC Customer Name	Location	ifSpeed
Cisco	7600		Customer Unassigned	Location Unassigned	2048000

Hourly PVC Endpoint Average and Peak Ingress and Egress Utilization

Device_156: 2_16

Sun Mar 16 03:00 PM - Tue Mar 18 03:00 PM

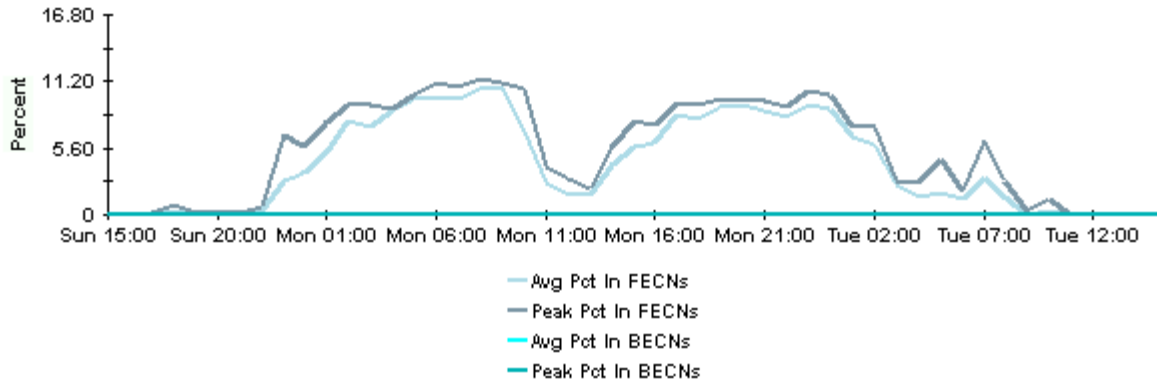




Ingress Congestion | Egress Congestion | Ingress Frame Types | Egress Frame Types

Device_156: 2_16

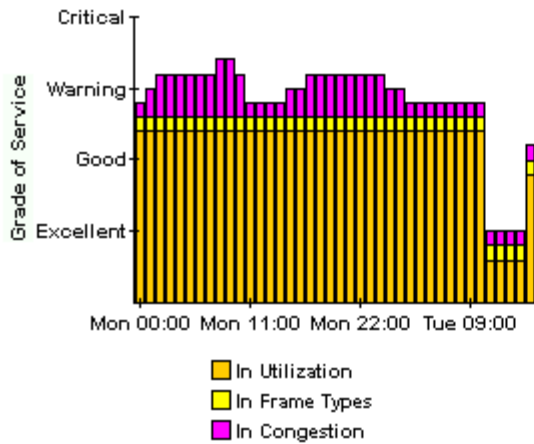
Sun Mar 16 03:00 PM - Tue Mar 18 03:00 PM



Ingress PVC Endpoint Grade of Service

Device_156: 2_16

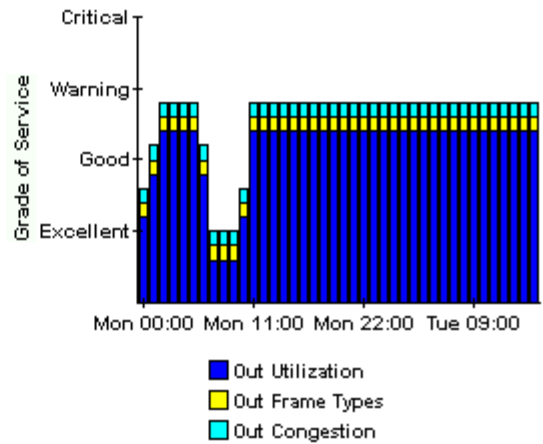
Mon Mar 17 12:00 AM - Tue Mar 18 03:00 PM



Egress PVC Endpoint Grade of Service

Device_156: 2_16

Mon Mar 17 12:00 AM - Tue Mar 18 03:00 PM

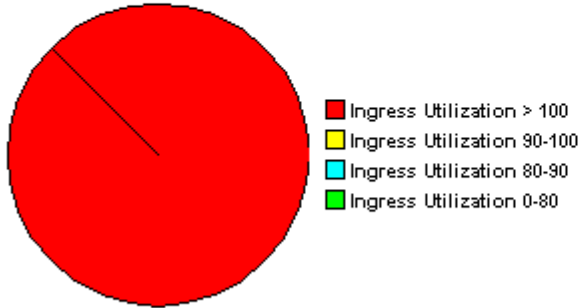




Ingress Frequency Distribution

Device_156: 2_16

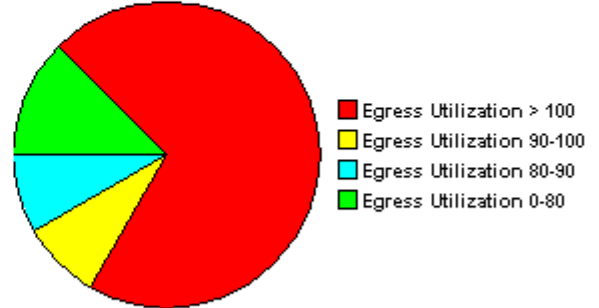
Mon Mar 17 2003 - Mon Mar 17 2003



Egress Frequency Distribution

Device_156: 2_16

Mon Mar 17 2003 - Mon Mar 17 2003



Port NRT QuickView and Snapshot

QuickView and Snapshot reports are available in three time ranges:

- Daily — showing hourly statistics for the previous day
- Monthly — showing daily statistics for the previous month
- Near Real Time — showing averages compiled over the previous six hours.

The top selection table of Near Real Time reports is an aggregate of all the poll cycle values for the previous 6 hours.

The Port NRT QuickView focuses on utilization, discards and errors. The selection table at the top drives the contents of the other areas on the report. The lower graphs and charts use the most granular collections available for the report, showing the highest level of detail.

When you select the QuickView version of any report, it displays immediately. The contents are limited only by the parameters you have applied or the object model. When you open a Snapshot report, a window opens allowing you to select the element or elements you want to view. For a large network this will allow you to reduce the amount of data in the report and only show the devices you are interested in.

If you are using the FRSCPE_Datapipe, the Port reports in the Frame Relay Report Pack use MIB-II ifTable collections for interfaces of type Frame Relay. As such, they represent the same data that is collected in the Interface Reporting Report Pack, the OVPI MIB-II reporting suite. Users may find it useful to examine the Interface reports in that package when looking for port/interface information.

Frame Relay Service Port NRT QuickView



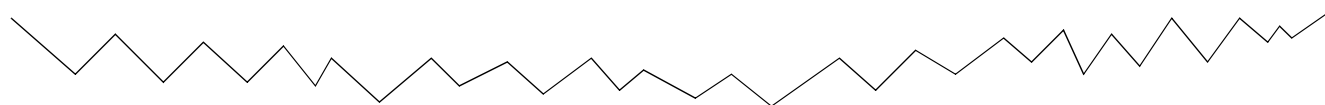
invent

This report gives network managers and members of the NOC team a listing of Frame Relay Service port statistics in near real time. Statistics shown in the "Port Selection List" chart are averages over the last 6 hours. Drilldowns show utilization, errors and discards for the previous 12 hours worth of polled data.

Port Selection List Ports are Sorted by Highest Utilized Direction

Tue Mar 18 04:45 PM - Tue Mar 18 05:00 PM

Device Name	Port	Port Speed	In Utilization	Out Utilization	Pct In Errors	Pct Out Errors	Pct In Discards	Pct Out Discards
65.83.60.1	6	1.5 Mb/s	45.10	101.70	0.00	0.00	0.00	0.00
65.83.60.1	2	1.5 Mb/s	47.11	93.72	0.06	0.00	0.00	6.43
80.48.115.1	2	2.0 Mb/s	32.12	93.42	0.00	0.00	0.00	4.68
80.48.115.1	3	2.0 Mb/s	18.27	93.39	0.00	0.00	0.00	4.66
65.240.80.1	4	1.5 Mb/s	8.09	90.36	0.00	0.00	0.00	0.00
65.240.80.1	1	1.5 Mb/s	8.09	90.36	0.00	0.00	0.00	0.00
67.115.222.1	1	1.5 Mb/s	17.35	56.48	0.00	0.00	0.00	0.02
67.115.222.1	4	1.5 Mb/s	17.35	56.47	0.00	0.00	0.00	0.00
67.115.223.1	1	1.5 Mb/s	17.35	56.47	0.00	0.00	0.00	0.02
67.115.223.1	4	1.5 Mb/s	17.35	56.47	0.00	0.00	0.00	0.00
65.240.51.1	2	1.5 Mb/s	46.45	19.14	0.00	0.00	0.00	0.00
65.240.56.1	2	1.5 Mb/s	46.45	19.14	0.00	0.00	0.00	0.00
65.240.51.1	8	1.5 Mb/s	46.44	19.14	0.00	0.00	0.00	0.00
65.240.56.1	8	1.5 Mb/s	46.44	19.14	0.00	0.00	0.00	0.00
65.166.122.1	2	1.5 Mb/s	17.53	45.89	0.00	0.00	0.00	0.29
65.240.51.1	1	1.5 Mb/s	45.51	22.31	0.00	0.00	0.00	0.00



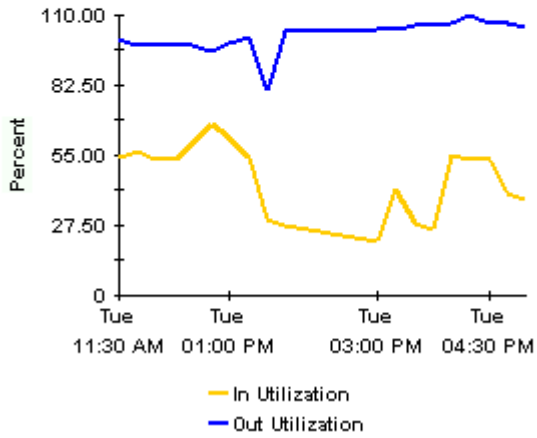


Make Model Description Customer Name Location Name

Port Avg and Peak Utilization

65.83.60.1: Serial0/1.1

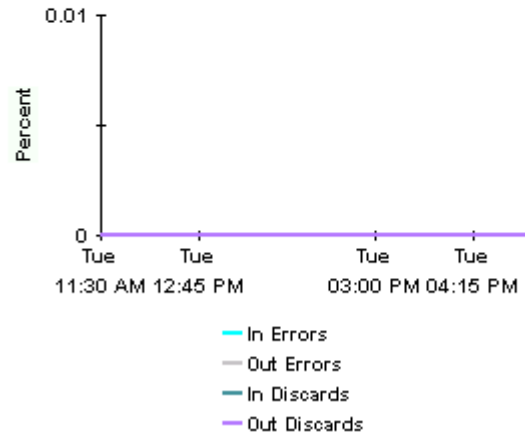
Tue Mar 18 11:30 AM - Tue Mar 18 05:00 PM



Port Avg Percent Errors and Discards

65.83.60.1: Serial0/1.1

Tue Mar 18 11:30 AM - Tue Mar 18 05:00 PM

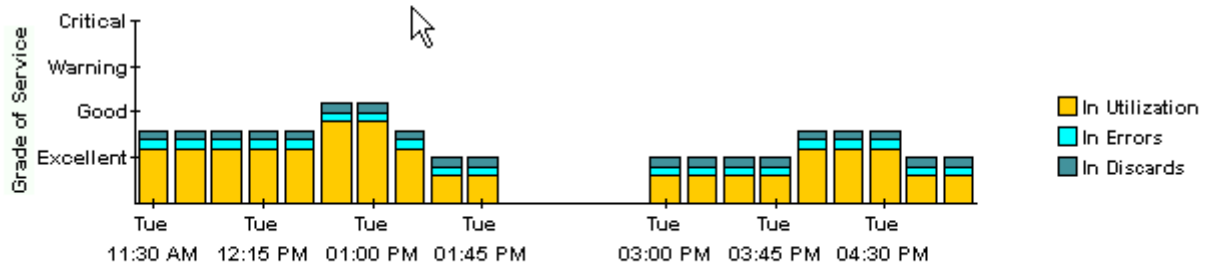


Ingress | Egress

Ingress Port Grade of Service

65.83.60.1: Serial0/1.1

Tue Mar 18 11:30 AM - Tue Mar 18 05:00 PM



Port Executive Summary

The Port Executive Summary report conveys a clear picture of utilization on a customer-by-customer basis. This report aggregates data at the customer level, providing monthly, daily and hourly coverage of volume and error counts. What you will not find in this report are statistics for specific ports.

The Port Executive Summary contains one line graph and the following bar charts:

- Monthly volume for all ports — total volume both in and out for all ports associated with this customer aggregated for monthly periods.
- Monthly error count for all ports — total error counts both in and out for all ports associated with this customer aggregated for monthly periods.
- Daily volume for all ports — total volume both in and out for all ports associated with this customer aggregated for daily periods.
- Daily error counts for all ports — total error counts both in and out for all ports associated with this customer aggregated for daily periods.
- Hourly volume for all ports — total volume both in and out for all ports associated with this customer aggregated for hourly periods.
- Hourly error counts for all ports — total error counts both in and out for all ports associated with this customer aggregated for hourly periods.

▶ The total of in and out traffic can sometimes lead to double counting frame, if both the in and out ports are associated with the same customer.

As explained in Chapter 3, “Configuration,” you can assign a customer to a PVC, and you have two ways of doing it: by importing the customer name as property data, or by using a form. If a customer is assigned to the parent object of a PVC it will trickle down to the PVC level, but only if customers have not been set yet. For example, assume a device has 10 interfaces, and each interface has 2 PVCs on it. If you assign *Customer A* to PVC 1 on Interface 1 and *Customer B* to the device itself, the results will be as follows: Every PVC on the device except PVC 1 on Interface 1 will belong to *Customer B*.

Frame Relay Service Port Executive Summary



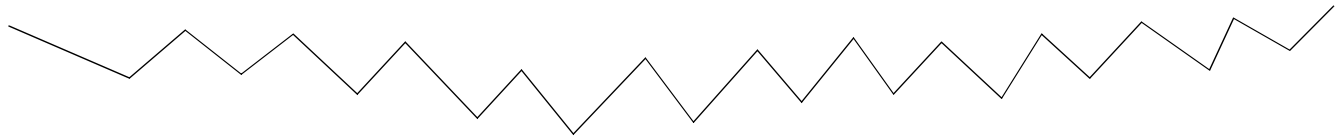
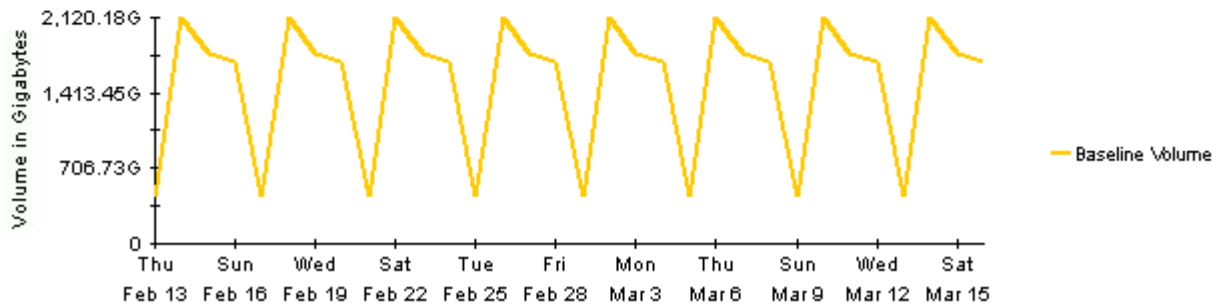
This report provides an overview of the performance of your frame relay ports. Each chart shows key metrics aggregated for all ports. Indicators of performance are shown, including total volume with in and out errors and discards.

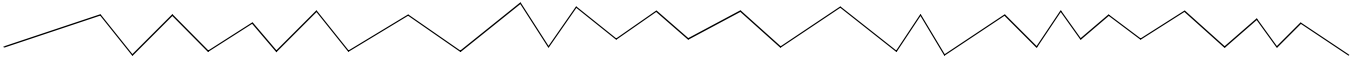
Customers Mon Mar 17 2003

Customer Name	Customer Id
All Customers	-1
Customer Unassigned	-2
New Customer 2	2

Day of Week Baseline and Forecast For All Ports

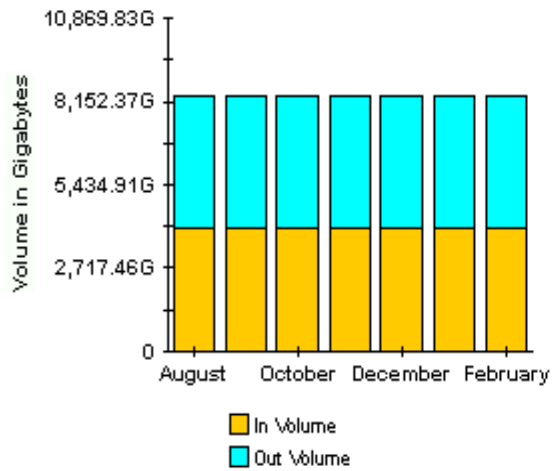
Thu Feb 13 2003 - Sun Mar 16 2003





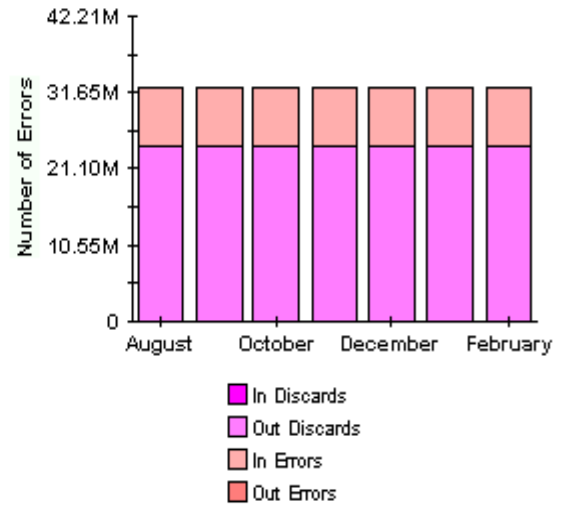
Monthly Volume for All Ports

Aug 2002 - Feb 2003



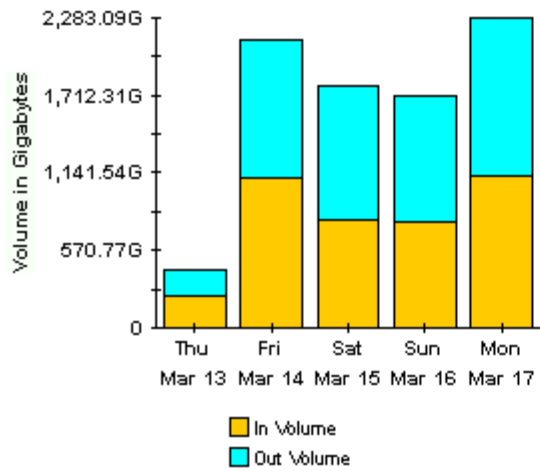
Monthly Error Counts for All Ports

Aug 2002 - Feb 2003



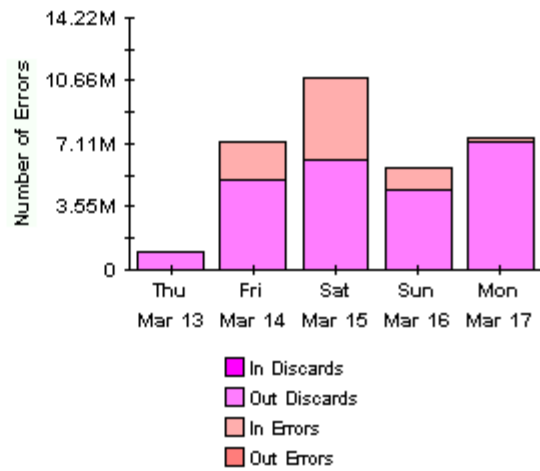
Daily Volume for All Ports

Thu Mar 13 2003 - Mon Mar 17 2003



Daily Error Counts for All Ports

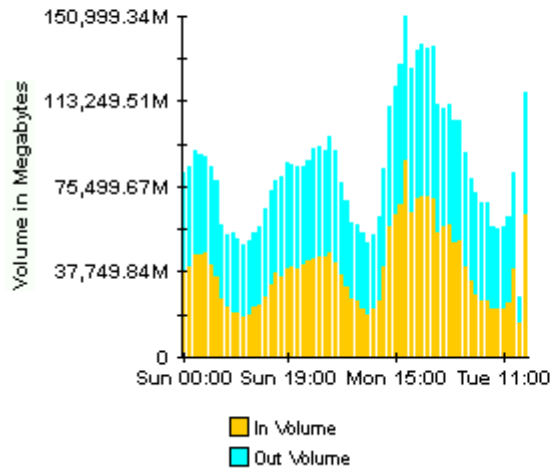
Thu Mar 13 2003 - Mon Mar 17 2003





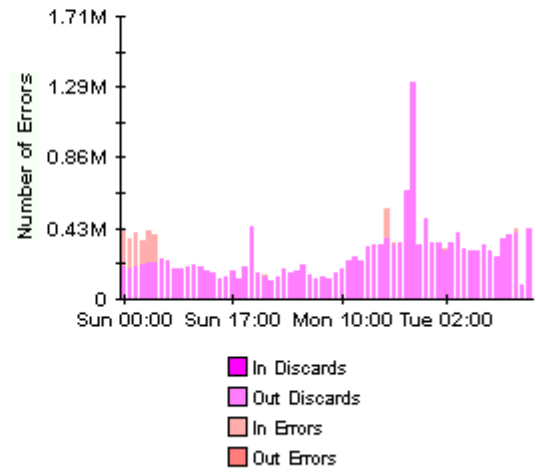
Hourly Volume for All Ports

Sun Mar 16 12:00 AM - Tue Mar 18 03:00 PM



Hourly Error Counts for All Ports

Sun Mar 16 12:00 AM - Tue Mar 18 03:00 PM



PVC Configuration Problems

PVC Configuration Problems is designed to highlight mis-configured PVC objects in your OVPI database. If a PVC appears in this report, that does not indicate that the PVC is incorrectly configured for your network.

This report focuses on two aspects of the PVC object:

- CIR
- PVC Id

Having a valid CIR value is essential if any type of utilization reporting or threshold alarming will be performed for the PVC endpoint. As this forms the core functionality of many of the Frame Relay reports, it is important that the CIR for every PVC endpoint is set correctly. The report pack attempts to gather CIR information from two sources on the network, RFC1315 and the Cisco Frame Relay MIB. If it is not available in either MIB table then the CIR will remain with a NULL setting. It is quite possible that a CIR of 0 bits per second will be provided by the network. This is a valid value in that you may have provisioned a 'best effort' service for the PVC, but it will result in divide by 0 errors when calculating utilization. Rows with this setting are typically not displayed in reports. It is better to assign the full ifSpeed of the interface the PVC terminates on, as this will be the maximum bandwidth available to the PVC.

There are three ways that CIR values can be updated:

- Updated by the network (RFC1315 or the Cisco Frame Relay MIB)
- Updated by the property provisioning file
- Updated by using Object Manager forms

The PVC Id is an integer value which is associated with the two ends of a single PVC. It is used in the End to End reports. Not supplying a PVC Id value for each PVC Endpoint will not effect most reports, but will limit what data can be displayed in the End to End reports. It is advisable, but not essential, to populate this field.

There are two ways to update PVC Id values:

- Property provisioning file
- Object Manager forms

See [Chapter 3, Package Configuration](#), for more information about importing property information, including CIR and PVC Id.

Frame Relay Service PVC Configuration Problems



This report provides a list of PVC endpoints in the Performance Insight system which have not been configured correctly. A missing (NULL) or incorrect CIR (≤ 0) means utilization statistics for the PVC endpoint will not be available. A missing PVC Id value means the endpoint is not associated with any other endpoint and will not be included in some end to end reports. Only endpoints which were polled yesterday will appear in this report. Use the parameters to filter the displayed endpoints.

PVC Endpoints With No CIR Setting

Device Name	Port	DLCI	CIR	Description	Make	Model	Customer
Device_256	10901201_0	603	NULL !		Cisco	7600	Customer Unassigned
Device_256	10901201_0	607	NULL !		Cisco	7600	Customer Unassigned
Device_256	10901201_0	910	NULL !		Cisco	7600	Customer Unassigned
Device_256	10901201_0	998	NULL !		Cisco	7600	Customer Unassigned
Device_267	201102_0	1023	NULL !		Cisco	7600	Customer Unassigned
Device_256	10901201_0	1023	NULL !		Cisco	7600	Customer Unassigned
Device_136	11	16	Value of 0		Cisco	7600	Customer Unassigned
Device_11	2	16	Value of 0		Cisco	7600	Customer Unassigned
Device_187	1	16	Value of 0		Cisco	7600	Customer Unassigned
Device_184	4	16	Value of 0		Cisco	7600	Customer Unassigned
Device_183	29	16	Value of 0		Cisco	7600	Customer Unassigned
Device_47	1	16	Value of 0		Cisco	7600	Customer Unassigned
Device_47	2	16	Value of 0		Cisco	7600	Customer Unassigned

PVC Endpoints Without PVC Id Setting

Device Name	Port	DLCI	PVC Id	Description	Make	Model	Customer
Device_40	2	16	Not set.		Cisco	7600	Customer Unassigned
Device_41	2	16	Not set.		Cisco	7600	Customer Unassigned
Device_42	2	16	Not set.		Cisco	7600	Customer Unassigned
Device_50	1	500	Not set.		Cisco	7600	Customer Unassigned
Device_50	2	500	Not set.		Cisco	7600	Customer Unassigned

Top Ten PVC Endpoints

There are two Top Ten reports, one for ports and one for PVCs. Each provides a list of the top ten elements sorted by average utilization over the time period. The daily section of the report looks at statistics for the previous day and the monthly looks at statistics for the previous calendar month.

The first selection table in the PVC Endpoint report looks at average and peak utilization levels for yesterday. It provides a list, in descending order, of the ten PVC endpoints that reported highest average utilization in either direction, In or Out. In addition to listing the PVC endpoint and CIR, this table indicates utilization values for:

- Average In
- Average Out
- Peak In
- Peak Out

Selecting an endpoint from the list displays additional information about the device itself and the customer and locations associated with the PVC endpoint.

Frame Relay Service PVC Endpoint Top Ten



The Top Ten report lists the ten top utilized PVC endpoints based on highest utilized direction. These reports show in and out average and peak utilization for yesterday and last month. Use the parameters to filter the report contents.

Daily Top Ten PVC Endpoints Based on Highest Utilized Direction Mon Mar 17 2003

Device Name	Port	DLCI	CIR	Avg In Utilization	Avg Out Utilization	Peak In Utilization	Peak Out Utilization
Device_185	2	36	10.0 Kb/s	925.10	275.21	1268.75	1027.73
Device_185	2	37	10.0 Kb/s	450.69	499.39	981.96	1059.57
Device_185	2	33	10.0 Kb/s	9.42	356.39	181.30	6832.72
Device_185	2	41	10.0 Kb/s	312.82	84.50	1221.55	1793.23
Device_156	2	16	768.0 Kb/s	176.46	136.34	182.33	176.08
Device_157	2	16	768.0 Kb/s	176.46	136.34	182.37	176.22
Device_164	2	16	768.0 Kb/s	176.46	136.34	182.26	176.06
Device_173	2	16	768.0 Kb/s	176.46	136.34	182.33	176.05
Device_163	2	16	768.0 Kb/s	176.46	136.34	182.27	176.08
Device_161	2	16	768.0 Kb/s	176.46	136.34	182.24	176.12

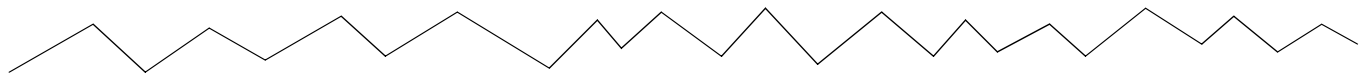
Daily - Device Details for Device_185: 2_33

Device Make	Model	PVC Description	PVC Customer Name	Location
Cisco	7600	N/A	Customer Unassigned	Location Unassigned

Monthly Top Ten PVC Endpoints Based on Highest Utilized Direction Feb 2003

Device Name	Port	DLCI	CIR	Avg In Utilization	Avg Out Utilization	Peak In Utilization	Peak Out Utilization
Device_185	2	36	10.0 Kb/s	815.53	719.51	1270.86	6053.81
Device_185	2	37	10.0 Kb/s	403.17	501.89	1029.72	5476.83
Device_185	2	56	10.0 Kb/s	366.92	312.28	1231.50	6825.31
Device_185	2	59	10.0 Kb/s	44.19	265.45	530.57	3473.06
Device_185	2	33	10.0 Kb/s	7.24	170.89	496.92	6832.72





Device_185	2	33	10.0 Kb/s	7.24	170.89	496.92	6832.72
Device_185	2	41	10.0 Kb/s	158.36	45.90	1221.55	1793.23
Device_185	2	38	10.0 Kb/s	22.01	143.00	236.65	6810.21
Device_156	2	16	768.0 Kb/s	105.04	109.65	182.33	177.94
Device_40	2	16	768.0 Kb/s	105.04	109.64	182.26	178.09
Device_43	2	16	768.0 Kb/s	105.04	109.64	182.35	177.94

Monthly - Device Details for Device_185: 2_41

Device Make	Model	PVC Description	PVC Customer Name	Location
Cisco	7600	N/A	Customer Unassigned	Location Unassigned

PVC Endpoint Forecast

The PVC Endpoint Forecast focuses on growth rates. The growth rate for utilization is calculated by projecting utilization 30 days into the future and dividing the increase by the current baseline average for that day of the week. The higher the difference between the current average and the projected value, the greater the rate of growth. Use this report to identify problems long before they become critical.

Each row in the selection table describes one PVC endpoint. The endpoints are sorted in descending order by rate of growth. In addition to listing endpoints in growth-rate order, this table indicates:

- Day of week
- Projected in utilization 30 days into the future
- Baseline utilization
- Projected out utilization 30 days into the future
- In ratio of growth
- Out ratio of growth

When you highlight an endpoint in the selection table, the following data appears in the tabbed area.

- **Basic:** Compares in and out average utilization for the day to the busy hour utilization for the day.
- **In Util Standard:** Compares IN utilization to median IN utilization. The tab shows the baseline, the median, baseline utilization -1 standard deviation and baseline utilization +1 standard deviation.
- **Out Util Standard:** Compares OUT utilization to median OUT utilization. The tab shows the baseline, the median, baseline utilization -1 standard deviation and baseline utilization +1 standard deviation.
- **In Util Advanced:** Compares baseline IN utilization to forecasted IN utilization 30, 60 and 90 day into the future. The date at the bottom of the tab represents the start date that the forecast calculation data is taken from.
- **Out Util Advanced:** Compares baseline OUT utilization to forecasted OUT utilization 30, 60, and 90 days into the future. The date at the bottom of the tab represents the start date that the forecast calculation data is taken from.

Frame Relay Service PVC Endpoint Forecast



This report details the biggest ratio change between the baseline utilization and the 30 day forecast. Forecast and baseline values are based on the busiest hour of the day. Drilldowns show baseline, median, STD, and 30, 60, 90 day forecasts for utilization.

PVC Endpoints with the Greatest Ratio of Growth Between the Baseline Utilization and the 30 Day Forecast

Tue Feb 04 2003 - Mon Feb 10 2003

Device Name	Port	DLCI	CIR	Day of Week	F30 In Util%	Baseline In Util%	In Ratio	F30 Out Util%	Baseline Out Util%	Out Ratio
Device_185	2	50	10.0 Kb/s	Sat	0.08	0.04	2.20	5.17	5.27	0.98
Device_185	2	50	10.0 Kb/s	Fri	14.98	6.92	2.16	79.67	39.69	2.01
Device_185	2	50	10.0 Kb/s	Thu	11.51	5.35	2.15	67.14	33.84	1.98
Device_185	2	48	10.0 Kb/s	Sun	93.94	43.94	2.14	8.62	7.96	1.08
Device_185	2	48	10.0 Kb/s	Tue	90.02	42.85	2.10	40.55	22.73	1.78
Device_185	2	35	64.0 Kb/s	Thu	4.21	2.11	2.00	66.76	32.15	2.08
Device_185	2	28	192.0 Kb/s	Sun	1.10	0.53	2.06	4.70	2.56	1.83
Device_185	2	59	10.0 Kb/s	Thu	297.40	149.57	1.99	2130.37	1034.83	2.06
Device_185	2	48	10.0 Kb/s	Sat	107.92	52.80	2.04	46.48	27.54	1.69
Device_137	1	24	512.0 Kb/s	Fri	4.93	2.47	2.00	21.06	10.33	2.04
Device_185	2	28	192.0 Kb/s	Tue	0.96	0.47	2.02	4.89	2.68	1.82
Device_185	2	28	192.0 Kb/s	Sat	1.14	0.58	1.97	5.81	3.04	1.91

Device Make

Cisco

Model

7800

Description

PVC Customer Name

Customer Unassigned

Location

Location Unassigned



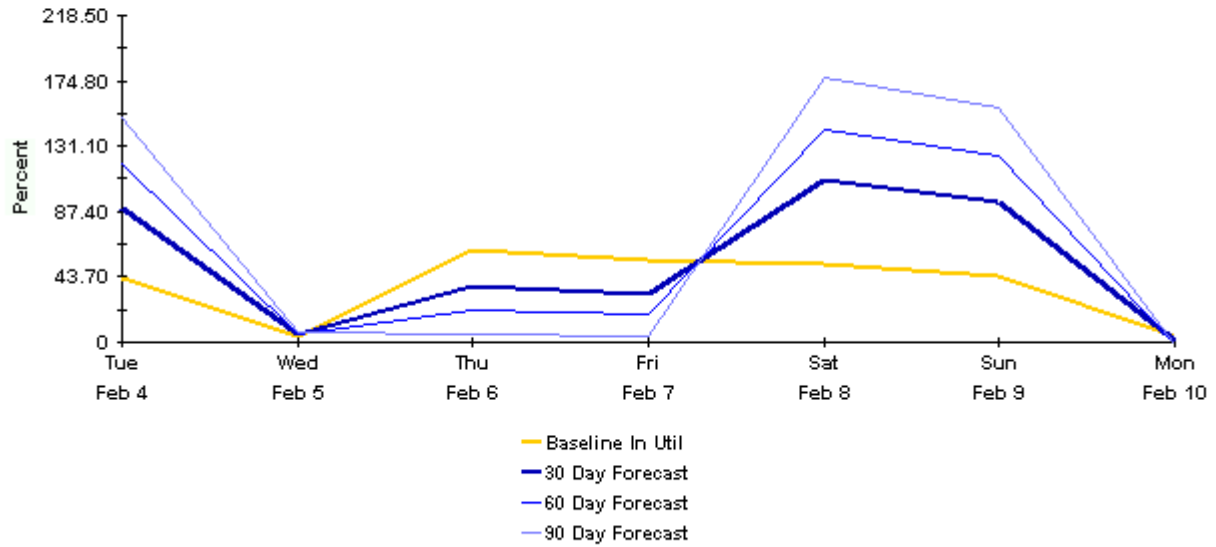


Basic | In Util Standard | Out Util Standard | In Util Advanced | Out Util Advanced |

PVC Endpoint Baseline In Utilization and 30, 60, and 90 Day Forecast

Device_185: 2_48

Tue Feb 04 2003 - Mon Feb 10 2003



PVC Endpoint Availability

The availability report allows you to focus on PVCs and ports that have been unavailable for any reason. In this context, an unavailable PVC is a PVC that is out of operation. Scheduled maintenance as well as failures will take ports and PVCs out of operation.

Availability is measured as a percentage of time over the time period that the port or PVC was considered to be operational based on metrics such as `ifOperStatus`, `sysUpTime`, `ifLastChange` and `Circuit State`, on the device.

The selection tables list PVC endpoints that had less than 100% availability over the day or month, while the hourly and daily bar graphs illustrate when the problems happened and for how long. Each bar in the hourly chart represents one hour in a 24 hour period, the bars in the daily chart represent one day in the previous month.

Frame Relay Service PVC Endpoint Availability



This report informs you of daily and monthly PVC endpoint availability. Use the parameters to filter the PVC endpoints which are shown. Use the Availability_Pct parameter to only show PVCs with an availability above the required level. Focus on endpoints which were partially available by setting this parameter to a value greater than 0.

Daily PVC Endpoint Availability Select a Device to See Availability for the Previous Day

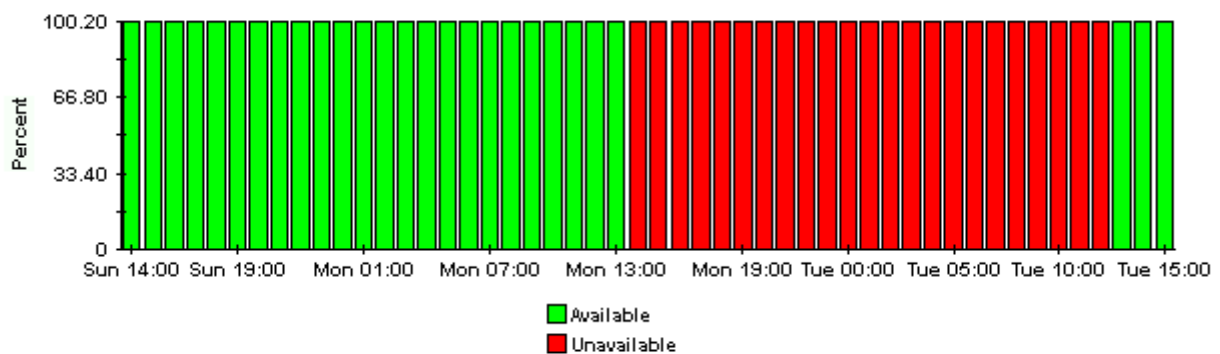
Mon Mar 17 2003

Device Name	Port	DLCI	Description	Availability	Make	Model
Device_137	1	24		58.33	Cisco	7600
Device_6	4	102		94.79	Cisco	7600
Device_6	4	104		94.79	Cisco	7600
Device_7	30	116		95.83	Cisco	7600
Device_8	30	116		95.83	Cisco	7600
Device_9	30	116		95.83	Cisco	7600
Device_37	30	116		95.83	Cisco	7600
Device_38	30	116		95.83	Cisco	7600
Device_39	30	116		95.83	Cisco	7600
Device_139	30	116		95.83	Cisco	7600
Device_6	2	100		96.88	Cisco	7600
Device_6	2	104		96.88	Cisco	7600

Hourly PVC Endpoint Availability

Device_137: 1_24

Sun Mar 16 02:00 PM - Tue Mar 18 03:00 PM



Editing Tables and Graphs

Tables and graphs can be viewed in several ways. Although the default view is usually adequate, you can easily increase the size of tables and you can easily alter the style of graphs by selecting a different view option. If you are using the Report Viewer application, right-click the object and select a different view. If you are looking at a report using the Web Access Server, click the **Edit Table** icon or the **Edit Graph** icon.

View Options for Tables

Right-clicking a table, or clicking **Edit Table**, opens a list of table view options.

Device	Interface	F/H	Customer	Descr.	Baseline Avg.
24.13.17.1	5	F	Concert	Cable5/0	In:2 Out:5
24.13.17.1	5	F	Concert	Cable5/0	In:2 Out:5
24.13.17.1	5	F	Concert	Cable5/0	In:3 Out:5
24.13.17.1	5	F	Concert	Cable5/0	In:2 Out:5
24.13.17.1	5	F	Concert	Cable5/0	In:2 Out:4
24.13.17.1	6	F	Concert	Cable6/0	In:2 Out:5
24.13.17.1	5	F	Concert	Cable5/0	In:2 Out:5
24.13.17.1	6	F	Concert	Cable6/0	In:2 Out:5
24.13.17.1	6	F	Concert	Cable6/0	In:2 Out:5
24.13.17.1	6	F	Concert	Cable6/0	In:2 Out:5

Set Time Period...

Change Constraint Values...

Select Nodes/Interfaces...

Change Max Rows...

View in new Frame

Print Table...

Export Element as CSV...

Delete Table

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.

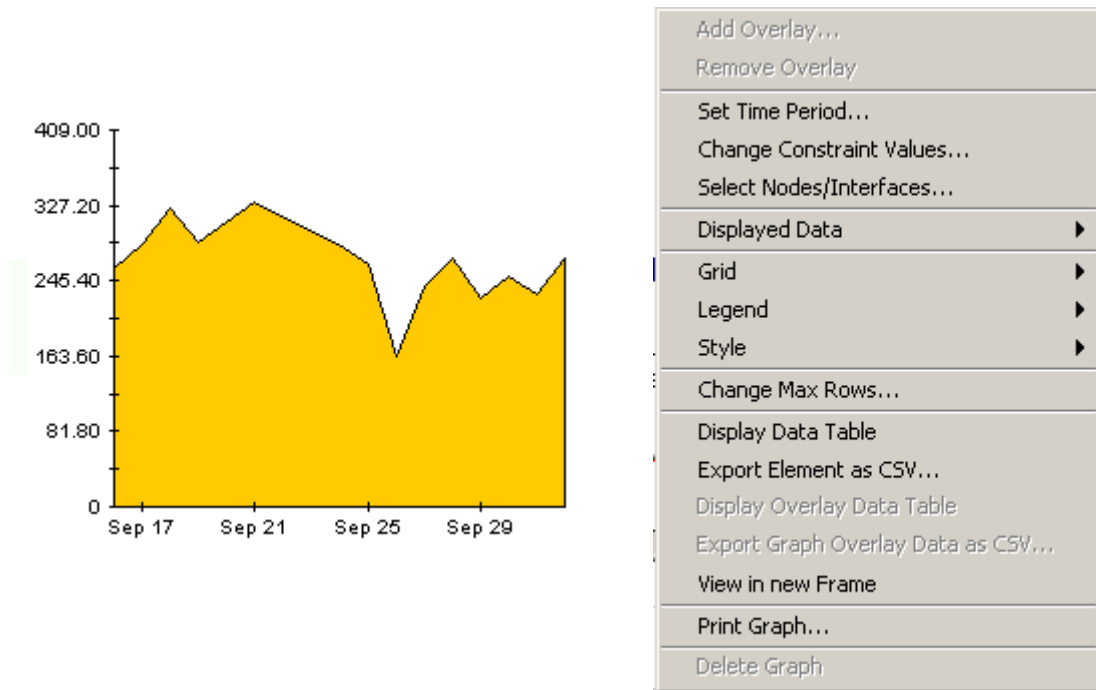
Change Max Rows increases or decreases the number of rows in a table. The default is 50. If you expand the default, the table may take more time to open. If you are trending a large network, using the default ensures that the table opens as quickly as possible.

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 Over Previous 6 Hours				
Direction	IpPrecedence	Switched Bytes	Switched Pkts	Time Period
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
Input	5	0	0	Tue Oct 29 06:00 AM
Input	6	0	0	Tue Oct 29 06:00 AM
Input	7	0	0	Tue Oct 29 06:00 AM

View Options for Graphs

Right-click any graph to open a list of view options.



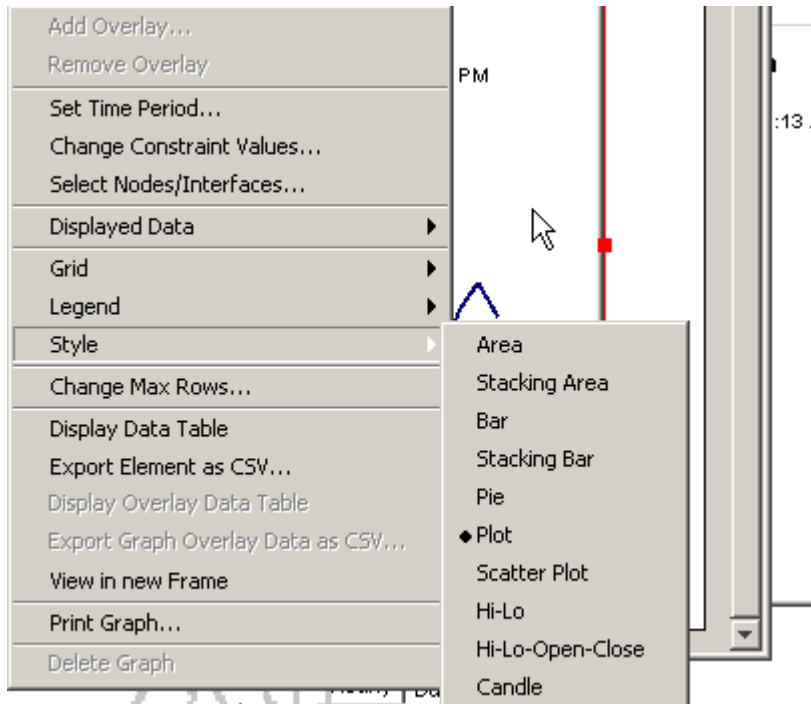
The following table provides details about each option.

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.

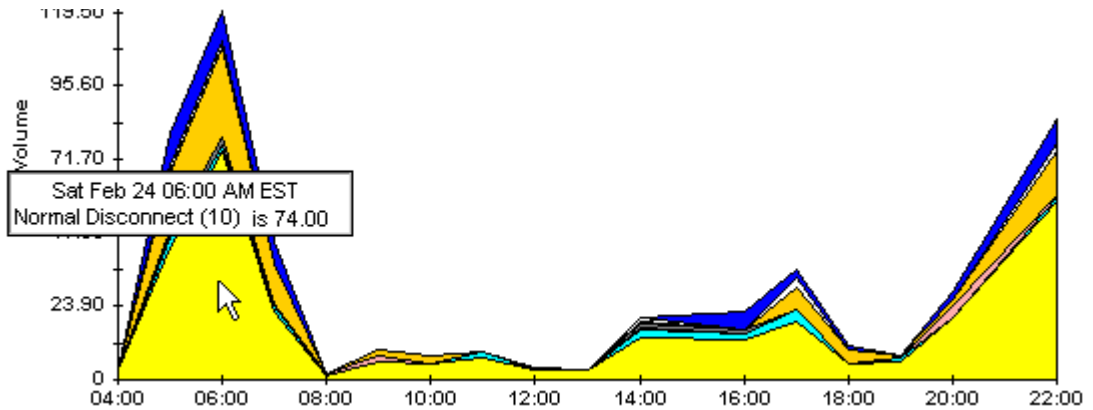
Style Options

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



Style > Area

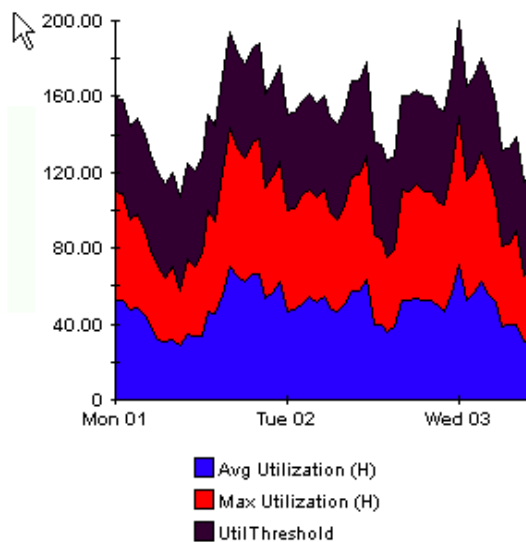
The plot or bar chart changes to an area graph. While relative values and total values are easy to view in this format, absolute values for smaller data types may be hard to see. Click anywhere within a band of color to display the exact value for that location.



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.

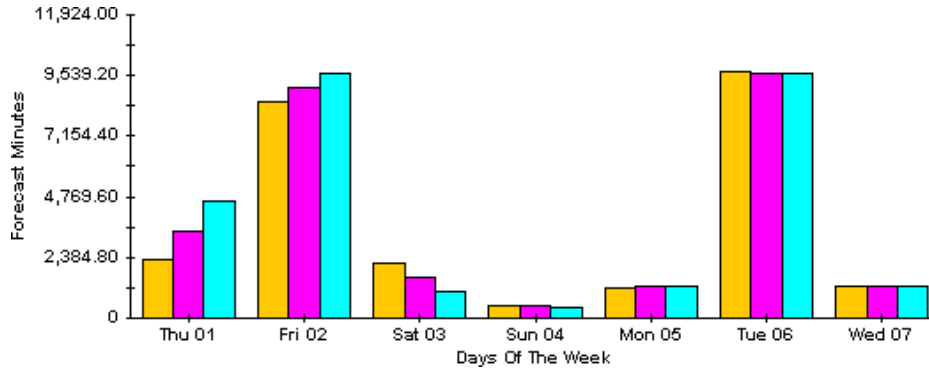
Style > Stacking Area

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



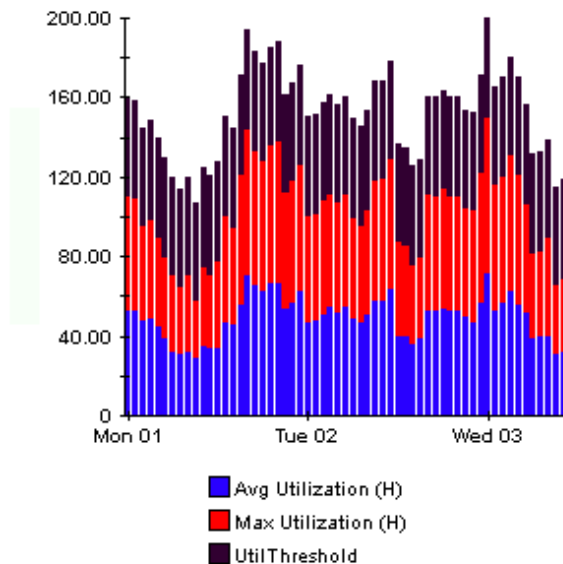
Style > Bar

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.



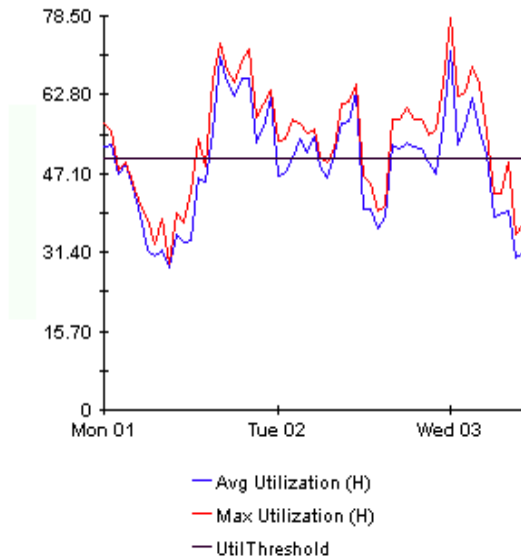
Style > Stacking Bar

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.



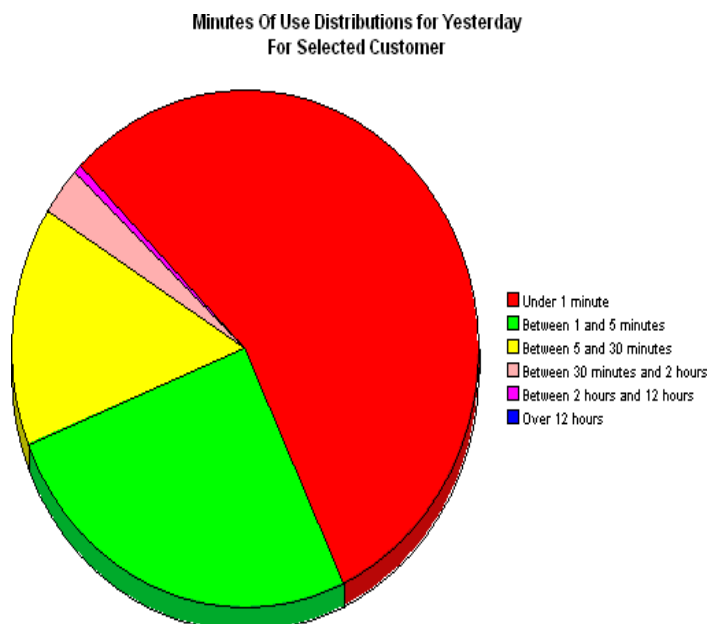
Style > Plot

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

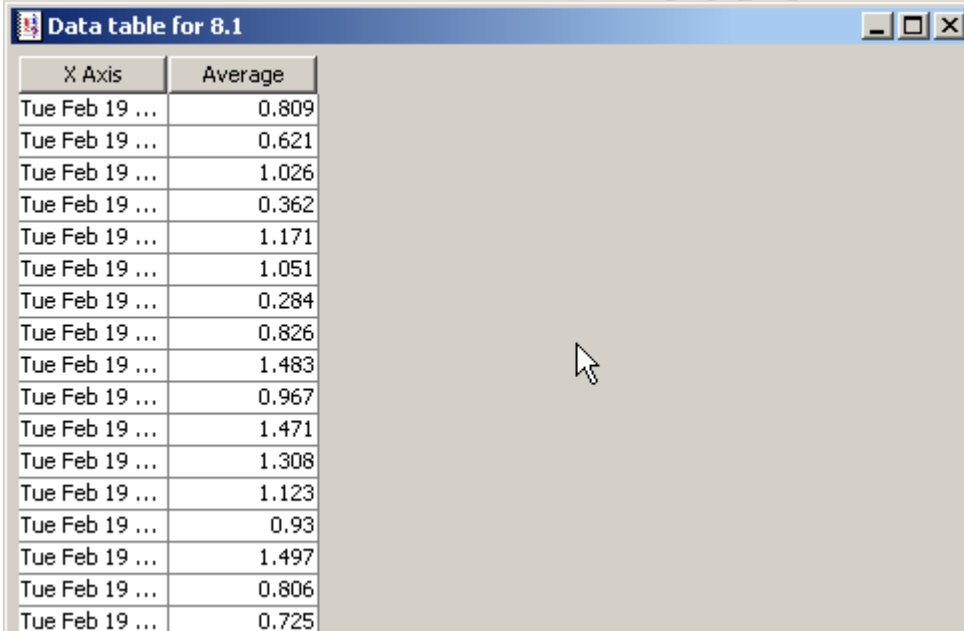
An area graph becomes a pie chart. Bands in an area graph convert to slices of a pie and the pie constitutes a 24-hour period. This view is helpful when a small number of data values are represented and you are looking at data for one day.



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

Display Data Table

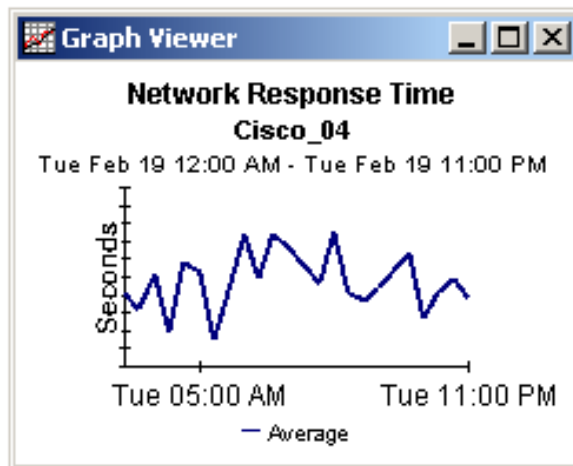
This option changes a graph into a spreadsheet.



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.



Backward Explicit Congestion Notification (BECN)

A specific bit in the header of the frame relay packet and a method for preventing a congested condition from getting worse. If a node becomes congested, changing the value of the BECN bit to 1 will signal congestion to the upstream node and attached user devices.

Busy Hour

The definition varies depending on what is being measured. Busy hour is either a busy hour *total*, or a busy hour *average*. A busy hour total points to the hour of the day that recorded the highest number of events, for example, the highest number of discards or the highest number of errors. A busy hour average points to the hour of the day when the average of multiple samples was highest (in the case of utilization) or lowest (in the case of throughput). Busy hour is a persistent event and should not be confused with peak, which could be very brief. If the value for busy hour seems high, keep in mind that actual utilization during the course of that hour may have been significantly higher.

Congestion

The point at which the network cannot keep up with entering traffic and begins flow control. The network reaches severe congestion when an increase in the number of retransmissions begins to lower actual effective throughput. To recover from this condition, the network notifies end devices to reduce traffic.

Committed Information Rate (CIR)

The rate at which the ingress interface and the egress interface transfers information to a destination under normal conditions.

Data Link Connection Identifier (DLCI)

A number inside the header of a frame relay packet that identifies a virtual circuit corresponding to a particular destination.

DE frames

Number of frames eligible for discard. A DE frame is created when the remote DTE sets the DE flag.

Discards

The number of frames that were discarded. Higher level protocols detect discarded frames and request a retransmission.

Discard Eligibility

A specific bit in the header of a frame relay packet and a mechanism for identifying which frames should be discarded if the network becomes overloaded. When a CPE device or a network switch sets the DE bit to 1, the frame is above the Committed Information Rate (CIR) and therefore eligible for discard if congestion arises. A frame with a DE set to 1 will be discarded before non-discard eligible frames.

Errors

The number of frames that were discarded because of errors. The following conditions are considered errors and will cause the frame to be discarded: (1) the frame was too long, (2) the frame was too short, (3) the DLCI value was invalid or unrecognized, (4) a value in the header was incorrect.

Forward Explicit Error Notification (FECN)

A specific bit in the header of the frame relay packet and a method for preventing a congested condition from getting worse. If a node becomes congested, it can set the value of the FECN bit to 1, thereby signaling congestion to the downstream node and attached user devices.

Frame Types

There are three types of frames: unmarked frames, frames marked Discard Eligible (DE), and frames marked ODE. Frame types are color-coded. Unmarked frames are green; DE frames are amber, and ODE frames are red. Because most switch vendors do not mark frames ODE, your reports will not show statistics for red frames unless your switch vendor supports ODE.

Frequency Distribution

QuickView and Snapshot reports include frequency distribution pie charts that show the percentage of samples falling within a specific ingress/egress or in/out utilization range for each hour of yesterday, or each day over the course of the last thirty days. The ingress and egress ranges for PVC endpoint utilization are:

- 0 - 80%
- 80 - 90%
- 90 - 100%
- > 100%

The in and out ranges for port utilization are:

- 0 - 50%
- 50 - 60%
- 60 - 70%
- 70 - 100%

Grade of Service

Quickview, Snapshot, and Hot Spots include Grade of Service charts. A Grade of Service is a ranking derived from a weighted average. The following table explains the grading behind scores for PVC endpoints. It shows the metrics the grade is based on, the weighting factor assigned to each metric, and the performance parameters for each of four possible grades.

GRADE CALCULATION	AVERAGE UTILIZATION	AVERAGE PERCENT RED AND/OR AMBER FRAMES	AVERAGE PERCENT CONGESTION
Weighting	60%	20%	20%
Excellent Range	0 - 80%	0 - 5%	0 - 5%
Good Range	80 - 90%	5 - 7%	5 - 7%
Warning Range	90 - 100%	7 - 10%	7 - 10%
Critical Range	Over 100%	Over 10%	Over 10%

The following table explains the grading behind scores for ports. It shows the metrics the score is based on, the weighting factor assigned to each metric, and the parameters for each of four possible grades.

GRADE CALCULATION	AVERAGE UTILIZATION	AVERAGE PERCENT RED AND/OR AMBER FRAMES	AVERAGE PERCENT CONGESTION
Weighting	60%	20%	20%
Excellent Range	0 - 50%	0 - 5%	0 - 5%
Good Range	50 - 60%	5 - 7%	5 - 7%
Warning Range	60 - 70%	7 - 10%	7 - 10%
Critical Range	Over 70%	Over 10%	Over 10%

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.

Peak

The highest of several samples (typically, the highest of four samples if polling is taking place every 15 minutes) recorded over an hour. Each hour produces one peak.

Port

Any frame relay interface on any network device that supports MIB-II.

Permanent Virtual Circuit (PVC)

A fixed path not available on demand or on a call-by-call basis. The location of the beginning and the end of the circuit do not change, although the actual path taken through the network may vary if automatic rerouting takes place.

PVC Endpoint

The logical end point for a circuit. Typically this is defined by a combination of the device name, the MIB-II interface name and the DlcI number.

Utilization

Calculated at a PVC Endpoint by dividing the actual traffic on the circuit by the Committed Information Rate. Calculated at the Port or interface level by dividing traffic counts by the ifSpeed of the Port.

A

accounts, group, **9**
 area graph, **63**
 Ascend Frame Relay Datapipe, **14**
 availability reporting, **57**

B

Backward Explicit Congestion Notification, defined, **67**
 bar chart, **64**
 BECN, defined, **67**
 bulk property imports, **29**
 busy hour, defined, **67**

C

central servers, configuring, **23**
 Change Constraint Values option, **60, 61**
 Change Max Rows option, **60, 61**
 Change PVC Configuration form, **29**
 Change PVC Customer form, **27**
 Change PVC Description form, **28**
 Change PVC Location form, **27**
 charts
 See graphs, editing
 CIR, defined, **67**
 committed information rate, defined, **67**
 Common Property Tables, **14**
 upgrading, **16**
 configuration
 central servers, **23**
 distributed systems, **23**
 satellite servers, **25**
 trendcopy pull commands, **24**
 congestion, defined, **67**
 constraints, **10**

copying rate data from satellite servers, **24**
 customers, creating or modifying, **25**
 customer-specific reports, **9**

D

data link connection identifier, defined, **67**
 datapipes
 supported, **14**
 uninstalling, **16**
 default view, **26**
 DE frames, **67**
 device aggregations, turning off, **25**
 directory structure, **8**
 discard eligibility, defined, **68**
 discards, defined, **67**
 Display Data Table option, **61, 66**
 distributed systems
 configuring, **23**
 installing on, **15**
 DLCI, defined, **67**

E

enhancements to report pack, **8**
 errors, defined, **68**
 Export Element as CSV option, **62**
 extracting packages from RNS CD, **15**

F

FECN, defined, **68**
 filters, group, **9**
 format guidelines, property import file, **31**

forms

- Change PVC Configuration, **29**
- Change PVC Customer, **27**
- Change PVC Description, **28**
- Change PVC Location, **27**
- launching, **26**
- use of, **25**

Forward Explicit Error Notification, defined, **68**

FrameRelay_Switch_PVC_Property.teel file, **31**

Frame Relay CPE Datapipe, **14**

frame types, **68**

frequency distribution, defined, **68**

G

grade of service, defined, **69**

graphs

- area, **63**
- bar, **64**
- editing, **59**
- pie, **65**
- plot, **65**
- spreadsheet, **66**
- stacking area, **63**
- stacking bar, **64**
- view options, **61**

Grid option, **61**

group accounts, **9**

group filters, **9**

growth rates, **53**

I

importing property data, **9, 29**

installation

- distributed system, **15**
- new install, **19**
- prerequisites, **13**
- upgrade, **17**

L

Legend option, **61**

locations, creating or modifying, **25**

N

Near Real Time report, **20**

- defined, **69**

Network Node Manager, integration with, **10, 14**

Newbridge Frame Relay Datapipe, **14**

nodes, creating or modifying, **25**

O

Oracle, **8**

OVPI Timer

- starting, **16, 19, 20, 21**
- stopping, **15, 16, 21**

P

packages

- extracting from RNS CD, **15**
- removing, **21**

parameters, report, **10**

peak, defined, **69**

performance data, viewing, **20**

permanent virtual circuit, defined, **70**

pie chart, **65**

plot graph, **65**

port, defined, **69**

Port directory, **8**

Port Executive Summary report, **43**

Port NRT reports, **39**

prerequisites for installation, **13**

Print Graph option, **62**

Product Manuals Search, **11**

property data, updating, **9, 25, 29**

property import file

- format guidelines, **31**
- location of, **30**

provisioning, **29**

PVC, defined, **70**

PVC Configuration Problems report, **47**

PVC directory, **8**

PVC Endpoint, defined, **70**

PVC Endpoint Availability report, **57**

PVC Endpoint Forecast report, **53**

PVC Endpoint reports, **35**

R

rate data, copying from satellite servers, **24**

removing packages, **21**

Report Builder, **20**

report parameters, **10**

reports

- customizing, **9**
- directory structure, **8**
- options for viewing, **20**
- Port Executive Summary, **43**
- Port NRT, **39**
- PVC Configuration Problems, **47**
- PVC Endpoint, **35**
- PVC Endpoint Availability, **57**
- PVC Endpoint Forecast, **53**
- Top Ten, **49**
- uninstalling, **21**

Report Viewer, **20**

S

satellite servers

- configuring, **25**
- copying rate data to central server, **24**

Select Nodes/Interfaces option, **60, 61**

servers

- configuring, **23, 25**
- copying rate data, **24**

Service_Assurance_Daily.pro file, **25**

Service_Assurance_Hourly.pro file, **25**

Set Time Period option, **59, 61**

software prerequisites, **13**

SourceDirectory path, **30**

spreadsheet, **66**

stacking area graph, **63**

stacking bar chart, **64**

Stratacom Frame Relay Datapipe, **14**

Style options, **61, 62**

Sybase, **8**

synchronizing system clocks, **24, 25**

T

tables, editing, **59**

table view options, **59**

thresholds sub-package, **14**

- default threshold settings, **33**

Top Ten reports, **49**

trendcopy pull commands, **24**

trendtimer, **25**

U

uninstall

- datapipes, **16**
- packages, **21**

upgrade

- Common Property Tables, **16**
- report pack, **17**

Use Absolute Time option, **59**

utilization, defined, **70**

V

view, changing, **26**

View in New Frame option, **60, 62, 66**

view options

- graphs, **61**
- tables, **59**

