

# **HP OpenView Performance Insight**

## **Report Pack for NetFlow Global View**

**Software Version: 1.0**

*Reporting and Network Solutions*



**March 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 2003-2004 Hewlett-Packard Development Company, L.P., all rights reserved.

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

### Trademark Notices

OpenView is a U.S. registered trademark of Hewlett-Packard Development Company, L.P. Windows®, and Windows NT® are U.S. registered trademarks 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 web site 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 support site at:

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

The support site provides access to:

- Product manuals
- Troubleshooting information
- Patches and updates
- Problem reporting
- Training information
- Support program information



# contents

- Chapter 1 Overview** ..... 7
  - OVPI and Network Flow Data ..... 7
  - Folders and the Reports Inside ..... 9
  - Generic Report Types ..... 10
  - Ways to Customize Reports ..... 11
  - Sources for Additional Information ..... 12
  
- Chapter 2 Performance Considerations** ..... 13
  - Isolating the Routers and Interfaces that Matter ..... 13
  - Options for Filtering and Aggregating Data ..... 13
  - Using Multiple OVPI Servers ..... 15
  
- Chapter 3 Installation and Configuration** ..... 17
  - Guidelines for a Smooth Installation ..... 17
  - Installing NetFlow Global View 1.0 ..... 18
  - TEEL File Directives ..... 20
  - Activating IP Address to Node Name Mapping ..... 22
  - Options for Viewing Reports ..... 23
  - Package Removal ..... 23
  
- Chapter 4 Top Ten Reports** ..... 25
  
- Chapter 5 Element Summary: Daily and Monthly** ..... 31
  
- Chapter 6 Application Distribution** ..... 39
  
- Chapter 7 Editing Tables and Graphs** ..... 49
  - View Options for Tables ..... 49
  - View Options for Graphs ..... 51
  
- Index** ..... 57



## Overview

This chapter covers the following topics:

- OVPI and network flow data
- Folders and the reports inside
- Generic report types
- Ways to customize reports
- Sources for additional information



Version 1.0 of the NetFlow Global View Report Pack installs on OVPI 4.6 and OVPI 5.0. Version 1.0 supports Sybase database software. Version 1.0 does not support Oracle database software.

## OVPI and Network Flow Data

When the context is networking, a flow is usually defined as a sequence of packets, of the same protocol, moving in the same direction, between two devices. Many network devices, including routers and switches, are able to compile data about the flows that move through their interfaces. If you can configure network devices to send network flow data at regular intervals to a flow collector application, network flow data can be aggregated. If you can aggregate network flow data, then you can also collect it from the flow collector application, impose filtering, and put the remaining data through further processing.

The NetFlow Global View package provides an end-to-end view of network flow data. It processes the network flow data generated by edge routers, the endpoints of your network, as opposed to routers located between the endpoints. By focusing on edge routers, this collection of reports is able to tell you where traffic is coming from, where traffic is headed, and which applications are consuming the most resources. The reports in this package summarize data at the daily and monthly level, providing easy access to the following information:

- Number of flows
- Traffic volume
- Average bytes per packet
- Average throughput
- Ranking by total volume, highest to lowest

- Ranking by average throughput, lowest to highest
- Traffic volume and throughput by application for a selected server
- Traffic volume and throughput by application for a selected client-server pair

NetFlow Global View instructs OVPI how to process data collected by the following datapipes:

- NetFlow Global View Datapipe
- NetFlow Interface to Global View Datapipe

Before either datapipe can collect data, the NetFlow Preprocessor must process the data it receives from the flow collector application. Let's look more closely at the preprocessor first, then return to the datapipes.

## The NetFlow Preprocessor

The NetFlow Preprocessor performs the following tasks:

- Identifies well-known applications
- Allows you to specify nonstandard or custom applications
- Identifies the client and server for each flow
- Groups multiple IP addresses into a single domain
- Filters out unwanted data produced by the flow collection application
- Aggregates data produced by the flow collection application
- Creates bi-directional records by matching flows from clients to flows from servers
- Reformats data for the NetFlow Global View Datapipe

Filtering is crucial. Filtering reduces the processing load on the OVPI server and eliminates unnecessary data pertaining to flows you do not care about. The NetFlow Preprocessor *must* be configured for filtering. As explained in more detail in the user guide for the NetFlow Preprocessor, the filtering you implement can take place either before aggregation or after aggregation. The following types of filtering take place before aggregation:

- Client/server filtering
- Application filtering

The following types of filtering take place after aggregation:

- Top x flows
- Inclusion percentile
- Minimum bytes per second

The NetFlow Global View Datapipe operates more efficiently when the data collected by the flow collection application is in Cisco CallRecord format. If the collection application outputs data in the CallDetailRecord format, the following issues arise:

- The amount of data that needs to be processed will increase significantly
- A single flow may be counted more than once



## The NetFlow Global View Datapipes

As mentioned earlier, there are two datapipes associated with NetFlow Global View. They are separate packages. Installing both datapipes on the same OVPI server is not permitted. The NetFlow Global View Datapipe performs three tasks:

- Calls the OVPI import process (ee\_collect)
- Normalizes data into an internal database format required by the report pack
- Populates report pack base tables every 15 minutes (the default)

The NetFlow Global View Datapipe includes an optional translation utility that is disabled by default. The purpose of this utility is to map IP addresses to node names, and thereby prevent data from being lost when a device changes its IP address. If you enable this utility, you must make sure that the SourceDirectory directive for the NetFlow Global View Datapipe matches the output directory for the translation utility. For more information about the translation utility, see Chapter 3, Package Installation and Configuration.

The second datapipe, the NetFlow Interface to Global View Datapipe, transfers data collected and processed by the NetFlow Interface Report Pack to the NetFlow Global View Report Pack. If you install the second datapipe, you will be able to collect NetFlow data once, yet operate NetFlow Interface and NetFlow Global View simultaneously. Note that there is one problem with this set up: certain flows monitored by non-edge routers could be counted multiple times instead of once.

## Folders and the Reports Inside

NetFlow Global View contains five folders. See below for a list of the reports in each folder.

Folder	Folder Contents
Top Ten	<ul style="list-style-type: none"> <li>• Daily Top Ten Summary</li> <li>• Monthly Top Ten Summary</li> </ul>
Server	<ul style="list-style-type: none"> <li>• Daily Server Top Ten</li> <li>• Monthly Server Top Ten</li> <li>• Daily Server Summary</li> <li>• Daily Server Application Distribution</li> <li>• Monthly Server Summary</li> <li>• Monthly Server Application Distribution</li> </ul>
Client	<ul style="list-style-type: none"> <li>• Daily Client Top Ten</li> <li>• Daily Client Summary</li> <li>• Monthly Client Top Ten</li> <li>• Monthly Client Summary</li> </ul>
Application	<ul style="list-style-type: none"> <li>• Daily Application Top Ten</li> <li>• Daily Application Summary</li> <li>• Monthly Application Top Ten</li> <li>• Monthly Application Summary</li> </ul>

<b>Folder</b>	<b>Folder Contents</b>
Top Talker	<ul style="list-style-type: none"> <li>• Daily Top Talker Top Ten</li> <li>• Monthly Top Talker Top Ten</li> <li>• Daily Top Talker Summary</li> <li>• Daily Top Talker Application Distribution</li> <li>• Monthly Top Talker Summary</li> <li>• Monthly Top Talker Application Distribution</li> </ul>
TOS	<ul style="list-style-type: none"> <li>• Daily TOS Top Ten</li> <li>• Daily TOS Summary</li> <li>• Monthly TOS Top Ten</li> <li>• Monthly TOS Summary</li> </ul>

## Generic Report Types

NetFlow Global View contains multiple variations on each of the following report types:

- Top Ten
- Element Top Ten
- Element Summary
- Application Distribution (the distribution of traffic volume by application)

The following table highlights the purpose of each report type.

<b>Report Type</b>	<b>Purpose</b>
Top Ten	<ul style="list-style-type: none"> <li>• Rank multiple elements by total bytes</li> </ul>
Element Top Ten	<ul style="list-style-type: none"> <li>• Rank a single element type by total bytes</li> <li>• Rank a single element type by average throughput</li> </ul>
Element Summary Reports	<ul style="list-style-type: none"> <li>• Display aggregated data for: <ul style="list-style-type: none"> <li>– Number of flows</li> <li>– Total bytes</li> <li>– Average bytes per packet</li> <li>– Average throughput</li> </ul> </li> <li>• Traffic volume over time</li> <li>• Average throughput over time</li> </ul>
Application Distribution	<ul style="list-style-type: none"> <li>• Display traffic volume by application per server or per client-server pair</li> <li>• Analyze performance trends for a selected application</li> </ul>

## Ways to Customize Reports

The contents of NetFlow Global View reports can be customized by importing customers and locations, by editing parameters, and by editing tables and graphs. For more information about editing tables and graphs, also known as selecting a different view option for tables and graphs, see Chapter 7, *Editing Tables and Graphs*.



Unlike other reporting solutions from HP OpenView, you cannot customize NetFlow Global View by creating a customer-specific version of the package. NetFlow Global View does not support filtering by customer.

## Importing Owners and Locations

The reports in NetFlow Global View display the following node-level property data:

- Server owner
- Server location
- Client owner
- Client location

Node-level property data is inherited from Common Property Tables. If you want to update node-level property data, use the update forms that come with Common Property Tables. You also have the option of using the batch-mode property import interface that comes with Common Property Tables. For details, refer to the *Common Property Tables 3.0 User Guide*.

## Report Parameters

Editing a parameter applies a constraint. The constraint filters out the data you do not want to see. If you were to edit the Client Owner parameter, data for every client owner except the client owner you typed in the Client Owner field would drop from the report. Similarly, if you edited the Client Location parameter, data for all locations except the location you typed in the Client Location field would drop from the report.

NetFlow Global View supports the following parameters:

- Start-Time
- End-Time
- Client name
- Server name
- Application name
- TOS

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 field and then click **Submit**.

## Sources for Additional Information

For information about the latest enhancements to NetFlow Global View and any known issues affecting this package, refer to the *NetFlow Global View Report Pack 1.0 Release Statement*. You may also be interested in the following documents:

- *NetFlow Interface Report Pack 2.0 User Guide*
- *NetFlow Interface Datapipe 2.0 Release Statement*
- *NetFlow Preprocessor 3.0 Installation and Configuration Guide*
- *RNS 4.0 Release Notes, October 2003*
- *RNS 5.0 Release Notes, April 2004*

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

<http://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 report packs, datapipes, preprocessors, and NNM SPIs are listed under **Reporting and Network Solutions**.

Each title listed under **Reporting and Network Solutions 5.0** indicates a date of publication. Because updated user guides are posted to this site on a regular basis, you should check this site for updates before using an older PDF that may no longer be current.

## Performance Considerations

The amount of network flow data that can be generated by a single router can be staggering. A router may handle flows from thousands of clients to thousands of servers. When you have hundreds of routers in a network, millions or even billions of client/server/application combinations are easy to imagine.

This is why keeping network flow data to a manageable level is so crucial. Unless you apply one of the filtering options described in this chapter, the network flow data generated by even a small subset of interfaces will overwhelm your OVPI server.

This chapter covers the following topics:

- Isolating the routers and interfaces that matter
- Options for filtering and aggregating data
- Using multiple OVPI servers

### Isolating the Routers and Interfaces that Matter

Since the purpose of NetFlow Global View is to report on network flow data that originates from edge routers, you have to identify the routers that are at the edge of your network, identify the interfaces on those routers that function as ingress points, and enable those interfaces to generate network flow data for the flow collection application. By configuring only those interfaces to generate network flow data, you will ensure optimal performance of the NetFlow Global View Report Pack.

### Options for Filtering and Aggregating Data

Even when a small subset of interfaces is generating network flow data, the data generated for insignificant flows can overwhelm your resources. To prevent this from happening, you must configure the NetFlow Preprocessor to apply one or more of the filtering and aggregation techniques described below.

## Client/Server Filtering

The preprocessor can filter and aggregate based on the IP addresses of the clients and servers. For example, you can configure the preprocessor to limit output to flows that originate or terminate at one IP address within a specified set of IP addresses. If you do that, the other flows will either be discarded or grouped into a DEFAULT flow.

In addition, you can group multiple IP addresses and/or address ranges together and treat them as if they were a single device. For example, the flows from all devices in a single location or sub-net can be grouped together and reported on as if they originated from a single device. This would allow you to look at capacity between sites or sub-nets at a higher level without getting lost in all the individual clients and servers.

## Application Filtering

The NetFlow Preprocessor determines the application associated with a flow by looking up the protocol and port number from a list of “well-known” and registered applications. This list can be expanded to include additional applications, and shortened so that it includes only the applications that interest you. Flows for unknown applications can be discarded or grouped together as a DEFAULT application. Although doing so is **not** recommended, the preprocessor can also create arbitrary applications based on the protocol and port numbers for flows with unknown applications. Create such applications only when absolutely necessary, since doing so can be detrimental to the performance of the report pack.

## Top X Flows

The NetFlow Preprocessor can restrict the number of rows of output generated for each reporting period, for each router. If you configure this restriction, the preprocessor will order the flows from largest to smallest and output only the number of rows specified. The remaining flows are discarded. Since the majority of traffic through a router is generated by a relatively small number of flows, this feature allows you to retain high-impact flows and discard low-impact flows.

## Include Percentile

This filter allows you to specify the percentage of traffic to report on. Typically, the traffic in a network consists of a small number of flows that account for a high percentage of traffic and a large number of flows that constitute a small percentage of traffic. When this feature is enabled, the preprocessor will output flows, starting with the largest and descending, until the percentage of total traffic you specified has been reached. Remaining flows are discarded.

## Minimum BPS

This filter eliminates all flows that do not generate a minimum amount of traffic (bytes per second) during the reporting period.

## Using Multiple OVPI Servers

If the amount of data generated is more than one OVPI server can handle—even though you limited the number of monitored interfaces and applied one or more filtering techniques—then consider spreading the data out over two stand-alone OVPI servers. You do not have the option of copying all processed data from satellite servers to a central server and viewing reports covering all interfaces. NetFlow Global View 1.0 is not designed to operate as a distributed system.





# Installation and Configuration

This chapter covers the following topics:

- Guidelines for a smooth installation
- Installing NetFlow Global View 1.0
- TEEL file directives
- Activating IP address to node name mapping
- Options for viewing reports
- Package removal

## Guidelines for a Smooth Installation

Version 1.0 of the NetFlow Global View Report Pack was released October 2003 on the RNS 4.0 product distribution CD. Version 1.0 is reappearing—unchanged—on the RNS 5.0 product distribution CD. Version 1.0 installs on OVPI 4.6 and OVPI 5.0. Version 1.0 supports Sybase. Version 1.0 does not support Oracle.

Like the RNS 4.0 CD, the RNS 5.0 CD includes NNM solutions components as well as OVPI solution components. When you launch the RNS 5.0 install script and select OVPI report packs for installation, the install script extracts every OVPI package to the Packages directory on your system. When the extract finishes, the install script will prompt you to start the OVPI package install wizard. Before getting to that step, review the following guidelines.

### Prerequisites

Make sure the following software is already installed before installing NetFlow Global View:

- OVPI 4.6 and any available Service Pack for OVPI 4.6; or
- OVPI 5.0 and any available Service Pack for OVPI 5.0

If you need help installing a Service Pack, refer to the release notes for the Service Pack.

## Upgrading Common Property Tables

If you are running an older version of Common Property Tables, you need to upgrade that package to version 2.2 or higher. If you are not running an older version of Common Property Tables, Package Manager will install Common Property Tables for you, automatically, when you install NetFlow Global View.

Do not install the upgrade for Common Property Tables and other packages at the same time. Install the upgrade package for Common Property Tables and *only* the upgrade package for Common Property Tables. For details about installing and using Common Property Tables, refer to the *Common Property Tables 3.0 User Guide*.

## Resolving Directory Issues

Resolve the following directory issues before proceeding with installation:

- 1 Select a directory where NetFlow Preprocessor will deposit data. (This information will also be needed for proper configuration of the NetFlow Preprocessor.) If this directory does not exist, create it.
- 2 Decide whether you will use the optional IP address to node name conversion utility. If you are going to use it, you must select or create a second directory.
- 3 Decide whether you will archive output from the NetFlow Preprocessor. If you are going to archive this data, you must select or create a third directory.

These directories should not be used for any other purpose.

## Installing NetFlow Global View 1.0

Perform the following tasks to install NetFlow Global View 1.0:

- Task 1: Extract packages from the RNS 5.0 product distribution CD
- Task 2: If necessary, upgrade to Common Property Tables 2.2 (or higher)
- Task 3: Install these packages:
  - NetFlow Global View Report Pack 1.0
  - NetFlow Global View Datapipe 1.0
- Task 4: Restart OVPI Timer

### Task 1: Extract packages from the RNS 5.0 CD

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

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

*UNIX:* As root, type one of the following:

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

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

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

When the install script has finished extracting packages to the Packages directory, you have the option of navigating to the Packages directory to see the results. The Packages directory includes folders for NetFlow Global View, NetFlow Global View Datapipe, and NetFlow Interface to NetFlow Global View Datapipe.

Under the NetFlow Global View folder, you will see the following folders:

- NetFlow\_Global\_View.ap
- NetFlow\_Global\_View\_Demo.ap

Under NetFlow Global View Datapipe, you will see this folder:

- NetFlow\_Global\_View\_Datapipe.ap

Under NetFlow Interface to NetFlow Global View Datapipe, you will see this folder:

- NetFlow\_IF2GV\_Datapipe.ap

Installing the demo package is optional. You can install the demo package by itself, with no other packages, or you can install the demo package along with everything else. Reports in the demo package are interactive; selection tables are linked to graphs, and you can select various view options for individual tables and graphs.

### Task 2: Upgrade to Common Property Tables 2.2 (or higher)

NetFlow Global View 1.0 requires Common Property Tables. NetFlow Global View will operate with either of these versions:

- Common Property Tables 2.2
- Common Property Tables 3.0

If you are running Common Property Tables 2.0, you must upgrade to version 2.2. Do that by installing the 2.0 to 2.2 upgrade package. If you are not running any version of Common Property Tables, skip this task altogether. The install wizard will install the latest version of Common Property Tables for you, automatically.

### Task 3: Install NetFlow Global View 1.0

Follow these steps to install the NetFlow Global View package:

- 1 From the Management Console, select **Tools > Package Manager**. The Package Manager welcome window opens.
- 2 Click **Next**. The Package Location window opens.
- 3 Click the **Install** radio button.
- 4 Approve the default installation directory or select a different directory if necessary.
- 5 Click **Next**. The Report Deployment window opens.
- 6 Accept the default for Deploy Reports; accept the defaults for application server name and port.

- 7 Type your user name and password for the OVPI Application Server.
- 8 Click **Next**. The Package Selection window opens.
- 9 Click the check box next to the following packages:

*NetFlow\_Global\_View 1.0*

*NetFlow\_Global\_View\_Datapipe 1.0*

*NetFlow\_Interface\_to\_NetFlow\_Global\_View\_Datapipe 1.0*



Do not install both datapipe on the same OVPI server.

- 10 Click **Next**. The Type Discovery window opens. Disable the default and click **Next**. The Selection Summary window opens.
- 11 Click **Install**. The Installation Progress window opens and the install begins. When the installation finishes, a package installation complete message appears.
- 12 Click **Done** to return to the Management Console.

#### Task 4: Restart OVPI Timer

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

*UNIX:* As root, type one of the following:

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

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

## TEEL File Directives

Before it can begin to collect data, the NetFlow Global View Datapipe must know:

- Where the NetFlow Preprocessor is storing its output
- What to do with the output after data collection is complete

This information is contained in the NetFlowGVDP.teel file. This file contains a SourceDirectory directive and a SourceDisposition directive. The SourceDirectory directive indicates where the data files are located; the SourceDisposition indicates what to do with the data files after they have been imported.

The default for SourceDirectory is *not* valid, therefore you *must* change it. The default for SourceDisposition is to delete source data files once they have been collected. This default is valid, so no changes are necessary. However, if desired, instead of deleting source data files, you may archive them by moving them to another directory.

### Changing the SourceDirectory Directive

If you are changing the directive *before* you install the NetFlow Global View package, there is only one instance of NetFlowGVDP.teel. It resides here:

```
{DPIPE_HOME}/packages/NetFlow_Global_View_Datapipe/  
NetFlow_Global_View_Datapipe.ap
```

If you are changing the directive *after* you install the NetFlow Global View package, there are two instances of NetFlowGVDP.teel.

*instance 1:*

```
{DPIPE_HOME}/packages/NetFlow_Global_View_Datapipe/  
NetFlow_Global_View_Datapipe.ap
```

*instance 2:*

```
{DPIPE_HOME}/lib
```

If you are changing directives after you install the report pack, make sure that you modify both instances of the file.

Follow these steps to change the SourceDirectory directive:



- 1 Navigate to the directory.
- 2 Locate the NetFlowGVDP.teel file.
- 3 Locate the SourceDirectory default path; look for the line beginning with SourceDirectory =
- 4 Change the path; replace the existing path with the complete path name to the new directory; begin the new path name just after the equals sign (=). For example:

*Windows*

```
SourceDirectory=C:\PreProcessorOutputDir\NETFLOW-PP*
```

*UNIX*

```
SourceDirectory=/home/OVPI/PreProcessorOutputDir/NETFLOW-PP*.
```

-  Leave the file filter as specified in the original SourceDirectory.
-  If you enable the optional IP address-to-node name translation utility, the SourceDisposition *must* point to the output directory for the translation utility.

## Changing the SourceDisposition Directive

Follow these steps to change the SourceDisposition directive:

- 1 Navigate to the appropriate directory.
- 2 Locate the NetFlowGVDP.teel file.
- 3 Locate the SourceDisposition directive; look for the line beginning with SourceDisposition = delete
- 4 Change this line to SourceDisposition = move,[archive path]  
where *archive path* is the full path to the archive directory.

## Activating IP Address to Node Name Mapping

Network flow data uses IP addresses to identify clients and servers. If an IP address for a particular device changes, what happens? Unless some means of IP address-to-node name translation is available, the link between old performance data (linked to the old IP address) and new performance data (linked to the new IP address) will be lost.

The NetFlow Global View Datapipe includes a mapping utility that translates IP addresses to node names. The translation is accomplished by looking up the IP address in the HOSTS file (or a mapping file you produce yourself) and replacing the IP address with the corresponding node name, assuming the IP address is found.

By default the mapping utility is disabled. Follow these steps to enable it:

- 1 Navigate to the {DPIPE\_HOME}/scripts directory.
- 2 Open the NetFlowGVDP\_addr2name.pro file. Locate this line:
 

```
{DPIPE_HOME}/bin/perl {DPIPE_HOME}/bin/addr2name.pl -m "" -i [Input Directory] -o [Output Directory]
```
- 3 Change *Input Directory* to the full path of the directory where the NetFlow Preprocessor writes its output.
- 4 Change *Output Directory* to the full path to the SourceDirectory directive specified in the preceding section.
- 5 *Optional.* If you are using a mapping file other than the HOSTS file, replace the "" after the -m with the full path to the file to be used.



Your mapping file must adhere to format of a standard HOSTS file.

- 6 Navigate to the {DPIPE\_HOME}/lib directory. Locate the following line in the trendtimer file:

```
#15 - - {DPIPE_HOME}/bin/trend_proc -f {DPIPE_HOME}/scripts/NetFlowGVDP_addr2name.pro
```

- 7 Remove the # from the beginning of the line.



The addr2name translation utility supports a 1-to-1 mapping between IP addresses and node names. If a node has more than one IP address, then do one of the following:

- Aggregate the IP addresses (using the IP domain feature of the NetFlow Preprocessor)
- Map each IP address to a different node name: SameNode1, SameNode 2.

For more information about the IP domain feature, refer to the *NetFlow Preprocessor Installation and Configuration Guide*.

## Options for Viewing Reports

Before reports can be viewed using a web browser, they must be deployed. When you installed this package, you were advised to enable the Deploy Reports option. As a result, NetFlow Global View reports are deployed and available for remote viewing.

The method of report viewing available to you depends on how OVPI is installed. If the client component is installed on your system, you have access to Report Viewer, Report Builder, and the Management Console. If the client component is not installed on your system, the only way you can view reports is to view them remotely using the Web Access Server.

For more information about the client component, refer to the *Performance Insight Installation Guide*. For more information about the object tree and using the object tree to launch reports and forms, refer to the *Performance Insight Administration Guide*. For more information about deploying, viewing, and undeploying reports, refer to the *Performance Insight Guide to Building and Viewing Reports*.

## Package Removal

If you remove NetFlow Global View, Package Manager will automatically remove any datapipe that depends on this package. Since the data in report pack and datapipe tables will be lost, you may want to archive that data before removing the report pack.

Follow these steps to uninstall NetFlow Global View 1.0:

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

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

*UNIX:* As root, type one of the following:

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

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

- 3 Select **HP OpenView > Performance Insight > Package Manager**. The Package Manager welcome window opens.
- 4 Click **Next**. The Package Location window opens.
- 5 Click the **Uninstall** radio button.
- 6 Click **Next**. The Report Undeployment window opens.
- 7 Accept the defaults for Undeploy Reports, Application Server Name, and Port.
- 8 Type the username and password.
- 9 Click **Next**. The Package Selection window opens.
- 10 Click the check box next to the following packages:

*NetFlow Global View*

*NetFlow Global View Demo* [if installed]

- 11 Click **Next**. The Selection Summary window opens.

- 12 Click **Uninstall**. The Progress window opens and the removal begins. When removal is complete, a package removal complete message appears.
- 13 Click **Done** to return to the Management Console.
- 14 Restart OVPI Timer.

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

*UNIX:* As root, type one of the following:

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

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



## Top Ten Reports

Top ten reports come in two flavors:

- An overview covering all element types
- An element-specific report

The overview report is broader in scope. Whereas the overview report looks at multiple elements at once, the element-specific version looks at one element at a time. For this reason, you may want to investigate excessive volume and low throughput by launching the overview version first, then go from there to one of the element-specific reports.

There are two instances of the overview version:

- Daily Top Ten (data for multiple days, for multiple elements, and you select the day)
- Monthly Top Ten (data for a month, for multiple elements, and you select the month)

Both reports focus on total volume, with entries sorted highest to lowest

There are two instances of the element-specific report:

- Daily Top Ten (one per element type, and you select the day)
- Monthly Top Ten (one per element type, and you select the month)

Both reports provide the following statistics:

- Total volume, with entries sorted highest to lowest
- Volume in each direction (client > server :: server > client)
- Average throughput
- Average throughput in each direction (client > server :: server > client)

See below for samples of the following reports:

- Daily Server Top Ten
- Monthly Client Top Ten
- Daily Top Talker Top Ten
- Daily Application Top Ten
- Monthly Application Top Ten

# NetFlow Global View



## Daily Server Top Ten

The Server Top Ten Report provides lists of servers which had the highest volume or worst throughput during the selected day. This report provides a quick overview of server usage and performance across the network. For both volume and throughput, the overall value is displayed along with values for the traffic flowing in the "Client to Server" (C->S) and "Server to Client" (S->C) directions.

### Day

August 21, 2003

August 20, 2003

August 19, 2003

### Total Volume Bytes per Day

Server	Total Bytes	Bytes C->S	Bytes S->C
Client159	111.42 M	48.97 M	62.45 M
Client73	95.47 M	63.08 M	32.38 M
Server164	90.12 M	43.51 M	46.61 M
Server640	62.88 M	30.94 M	31.94 M
Server592	24.15 M	18.65 M	5501.01 k
Server426	23.95 M	23.95 M	0
15.1.158.40	19.87 M	19.87 M	0
Server130	19.87 M	19.87 M	0
Server13	19.87 M	19.87 M	0
Server135	19.87 M	19.87 M	0

### Average Throughput Bytes per Second

Server	Overall Throughput	Throughput C->S	Throughput S->C
Server283	9.24	8.92	9.55
Server279	9.45	9.77	9.12
Server239	9.88	10.22	9.55
Server492	9.89	9.55	10.23
Server536	10.79	11.10	10.47
Server635	14.00	14.48	13.51
Server554	14.15	14.66	13.64
Server519	16.48	17.06	15.90
Server497	23.26	24.00	22.51
Server530	84.65	87.78	81.51

# NetFlow Global View



## Monthly Client Top Ten

The Client Top Ten Report provides lists of clients which had the highest volume or worst throughput during the selected month. This report provides a quick overview of client usage and performance across the network. For both volume and throughput, the overall value is displayed along with values for the traffic flowing in the "Client to Server" (C->S) and "Server to Client" (S->C) directions.

### Month

July, 2003

June, 2003

### Total Volume Bytes per Month

Client	Total Bytes	Bytes C->S	Bytes S->C
Client91	3250.98 M	3250.98 M	0
Client73	1692.82 M	823.69 M	869.13 M
Client27	1645.86 M	1089.83 M	556.03 M
Client155	1186.42 M	590.70 M	595.72 M
Client69	1145.09 M	981.77 M	163.31 M
Client142	785.36 M	621.53 M	163.82 M
Client07	553.85 M	276.02 M	277.83 M
Client39	446.00 M	443.31 M	2688.04 k
Client132	413.93 M	198.02 M	215.92 M
Client152	411.19 M	283.50 M	127.68 M

### Average Throughput Bytes per Second

Client	Overall Throughput	Throughput C->S	Throughput S->C
Client30	24.82	25.12	24.53
Client101	31.33	31.33	0.00
Client44	69.65	71.47	67.82
Client124	85.62	48.62	122.63
Client08	93.54	93.54	0.00
Client103	96.70	96.70	0.00
Client133	103.71	65.60	2564.62
Client72	124.07	124.07	0.00
Client81	152.39	152.39	0.00
Client116	168.14	168.14	0.00

# NetFlow Global View



## Daily Top Talker Top Ten

The Top Talker Top Ten Report provides lists of client / server pairs which had the highest volume or worst throughput during the selected day. This report provides a quick overview of client / server pair usage and performance across the network. For both volume and throughput, the overall value is displayed along with values for the traffic flowing in the "Client to Server" (C->S) and "Server to Client" (S->C) directions.

### Day

August 21, 2003

August 20, 2003

August 19, 2003

### Total Volume Bytes per Day

Client	Server	Total Bytes	Bytes C->S	Bytes S->C
Client73	Client159	96.32 M	46.96 M	49.36 M
Client27	Client73	94.36 M	62.48 M	31.88 M
Client155	Server640	62.88 M	30.94 M	31.94 M
Client07	Server164	28.96 M	14.44 M	14.52 M
Client142	Server592	23.99 M	18.53 M	5461.84 k
Client39	Server426	23.94 M	23.94 M	0
Client132	Server164	21.88 M	10.54 M	11.34 M
Client06	Server164	21.26 M	9388.58 k	11.87 M
Client91	15.1.158.40	19.09 M	19.09 M	0
Client91	Server130	19.09 M	19.09 M	0

### Average Throughput Bytes per Second

Client	Server	Overall Throughput	Throughput C->S	Throughput S->C
Client155	Client42	5.84	5.84	0.00
Client30	Server283	9.24	8.92	9.55
Client30	Server279	9.45	9.77	9.12
Client30	Server239	9.88	10.22	9.55
Client30	Server492	9.89	9.55	10.23
Client30	Server536	10.79	11.10	10.47
Client30	Server635	14.00	14.48	13.51
Client30	Server554	14.15	14.66	13.64
Client30	Server519	16.48	17.06	15.90
Client30	Server497	23.26	24.00	22.51

# NetFlow Global View



## Daily Application Top Ten

The Application Top Ten Report provides lists of applications which had the highest volume or worst throughput during the selected day. This report provides a quick overview of application usage and performance across the network. For both volume and throughput, the overall value is displayed along with values for the traffic flowing in the "Client to Server" (C->S) and "Server to Client" (S->C) directions.

### Day

August 21, 2003

August 20, 2003

August 19, 2003

### Total Volume

#### Bytes per Day

Application	TOS	Total Bytes	Bytes C->S	Bytes S->C
snmp	0	460.80 M	372.26 M	78.54 M
netbios-ssn	0	125.44 M	71.75 M	53.69 M
ftp-data	0	94.40 M	62.49 M	31.92 M
vtstrapserver	0	41.58 M	40.89 M	689.65 k
zephyr-srv	0	25.47 M	480.04 k	24.99 M
scoremgr	0	13.05 M	215.77 k	12.83 M
xinuexpansion3	0	11.04 M	181.89 k	10.85 M
orion-rmi-reg	0	10.24 M	882.94 k	9356.85 k
OTHER_APPS	0	8137.80 k	7526.80 k	611.00 k
pop3	0	6935.70 k	6740.13 k	195.57 k

### Average Throughput

#### Bytes per Second

Application	TOS	Overall Throughput	Throughput C->S	Throughput S->C
mloadd	0	5.84	5.84	0.00
fpo-fns	0	34.09	47.70	20.44
netbios-ns	0	96.70	96.70	0.00
telnet	0	119.03	119.65	118.37
netbios-dgm	0	136.94	136.94	0.00
cplscrambler-in	0	165.82	166.85	174.92
ischat	0	250.69	259.45	242.02
x11	0	326.23	270.60	382.48
simba-os	0	353.45	329.89	378.34
mentaserver	0	372.87	53.93	691.22

# NetFlow Global View



## Monthly Application Top Ten

The Application Top Ten Report provides lists of applications which had the highest volume or worst throughput during the selected month. This report provides a quick overview of application usage and performance across the network. For both volume and throughput, the overall value is displayed along with values for the traffic flowing in the "Client to Server" (C->S) and "Server to Client" (S->C) directions.

### Month

July, 2003

June, 2003

### Total Volume Bytes per Month

Application	TOS	Total Bytes	Bytes C->S	Bytes S->C
snmp	0	7862.77 M	6492.93 M	1369.84 M
netbios-ssn	0	2187.93 M	1251.50 M	936.44 M
ftp-data	0	1646.56 M	1089.84 M	556.72 M
vtstrapserver	0	725.21 M	713.19 M	12.03 M
zephyr-srv	0	444.19 M	8372.71 k	435.82 M
scoremgr	0	227.55 M	3763.36 k	223.78 M
xinuexpansion3	0	192.48 M	3172.44 k	189.30 M
orion-rmi-reg	0	178.60 M	15.40 M	163.20 M
OTHER_APPS	0	141.94 M	131.28 M	10.66 M
pop3	0	120.97 M	117.56 M	3411.07 k

### Average Throughput Bytes per Second

Application	TOS	Overall Throughput	Throughput C->S	Throughput S->C
mloadd	0	5.84	5.84	0.00
fpo-fns	0	34.09	47.70	20.44
netbios-ns	0	96.70	96.70	0.00
telnet	0	119.03	119.65	118.37
netbios-dgm	0	136.94	136.94	0.00
cplscrambler-in	0	165.82	156.85	174.92
ischat	0	250.89	259.45	242.02
x11	0	326.23	270.60	382.48
simba-cs	0	353.45	329.89	378.34
mentaserver	0	372.87	53.93	691.22

## Element Summary: Daily and Monthly

The summary reports add depth to the element-specific top ten reports. They will tell you whether activity appearing in the element-specific top ten report is a new condition, with no history behind it, or a longer term trend that may be getting worse. These reports will also pin-point the clients, servers, applications, or TOS values where resource consumption is high and where worsening throughput is a serious risk.

While the element-specific top ten reports focus on total volume and average throughput, the element-specific summary reports are wider in scope, providing the following statistics:

- Number of flows in both directions (client > server :: server > client)
- Total bytes
- Average bytes per packet
- Average throughput

The data in an element-specific summary report has been aggregated. For example, if you are looking at the Server Daily Summary, “number of flows” means:

- Flows to any client, running any application
- Flows from any client, running any application

From each entry in the element selection table you can drill down to two graphs:

- Traffic volume, measured in bytes per day
- Throughput, measured in bytes per second

In the daily summary, these graphs show increases and decreases over the last 30 days; in the monthly summary, these graphs show increases and decreases for the previous 12 months.

See below for samples of the following reports:

- Daily Server Summary
- Monthly Server Summary
- Daily Client Summary
- Daily Top Talker Summary
- Monthly Top Talker Summary
- Monthly Application Summary

# NetFlow Global View



## Daily Server Summary

The Server Summary Report presents server performance metrics aggregated over all clients and applications for the selected time period. This report can be used to view historical server performance and identify servers with excessive demand or degrading performance. All statistics are displayed for both the "Client to Server" (C->S) and "Server to Client" (S->C) directions as "C->S / S->C"

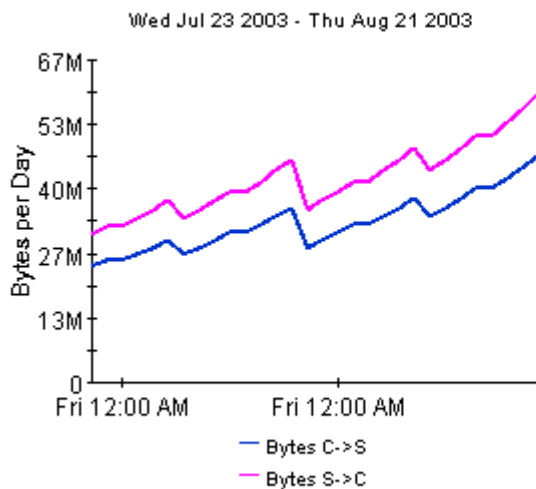
### Day

- August 21, 2003
- August 20, 2003
- August 19, 2003

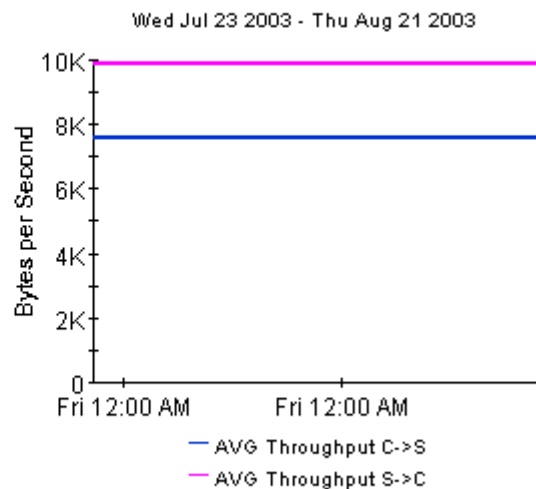
### Servers

Server	Number of Flows	Total Bytes	Average Bytes per Packet	Average Throughput (Bps)
Client159	16 / 15	48.97 M / 62.45 M	584.20 / 728.39	7604.18 / 9861.42
Client73	152 / 149	63.08 M / 32.38 M	1088.24 / 708.39	48.47 k / 26.07 k
Server164	223 / 254	43.51 M / 46.61 M	294.55 / 297.47	2814.49 / 2847.59
Server640	27 / 27	30.94 M / 31.94 M	774.29 / 797.62	18.11 k / 18.67 k
Server592	120 / 123	18.65 M / 5501.01 k	757.18 / 290.57	8999.45 / 3148.60
Server426	1630 / 0	23.95 M / 0	369.04 /	24.19 k / 0.00
15.1.158.40	51 / 0	19.87 M / 0	391.92 /	33.06 k / 0.00
Server130	51 / 0	19.87 M / 0	391.92 /	10.16 k / 0.00
Server13	51 / 0	19.87 M / 0	391.91 /	25.99 k / 0.00

**Bytes**  
Client159



**Throughput**  
Client159





# NetFlow Global View



## Daily Client Summary

The Client Summary Report presents client performance metrics aggregated over all servers and applications for the selected time period. This report can be used to view historical client performance and identify clients with excessive demand or degrading performance. All statistics are displayed for both the "Client to Server" (C->S) and "Server to Client" (S->C) directions as "C->S / S->C"

### Day

August 21, 2003

August 20, 2003

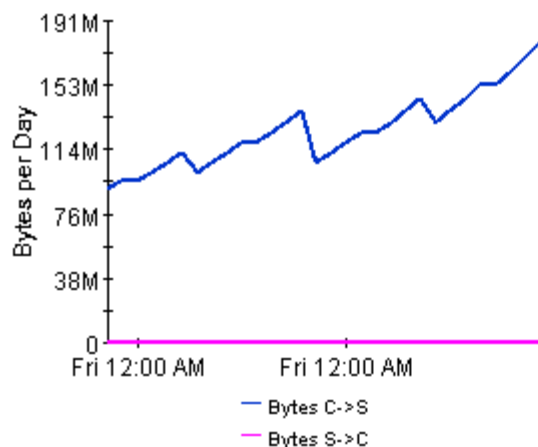
August 19, 2003

### Clients

Client	Number of Flows	Total Bytes	Average Bytes per Packet	Average Throughput (Bps)
Client91	637 / 0	186.39 M / 0	390.93 /	18.59 k / 0.00
Client73	39 / 38	47.23 M / 49.83 M	824.28 / 895.17	14.29 k / 15.68 k
Client27	3 / 4	62.48 M / 31.88 M	1135.17 / 739.47	58.87 k / 30.03 k
Client155	167 / 176	33.87 M / 34.15 M	754.32 / 756.31	8001.97 / 13.41 k
Client69	164 / 3	56.29 M / 9363.37 k	348.61 / 388.59	11.90 k / 4184.46
Client142	211 / 215	35.63 M / 9392.71 k	833.68 / 247.02	8278.48 / 2219.18
Client07	97 / 97	15.83 M / 15.93 M	294.53 / 296.47	2816.86 / 2836.20
Client39	2462 / 9	25.42 M / 154.12 k	357.62 / 295.24	4916.34 / 573.60
Client132	105 / 137	11.35 M / 12.38 M	292.34 / 297.69	2769.68 / 2854.80

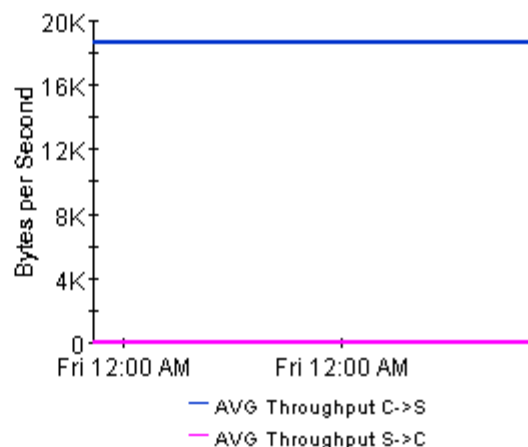
### Bytes Client91

Wed Jul 23 2003 - Thu Aug 21 2003



### Throughput Client91

Wed Jul 23 2003 - Thu Aug 21 2003



# NetFlow Global View



## Daily Top Talker Summary

The Top Talker Summary Report presents performance metrics for the client / server pairs that generate the most traffic during the selected time period. Selecting a client / server pair from the list of top talkers allows the user to see the historical traffic and throughput for the selected pair. All statistics are displayed for both the "Client to Server" (C->S) and "Server to Client" (S->C) directions as "C->S / S->C".

### Day

August 21, 2003

August 20, 2003

August 19, 2003

### Top Talkers

Client	Server	Number of Flows	Total Bytes	Average Bytes per Packet	Average Throughput (Bps)
Client73	Client159	6 / 5	46.96 M / 49.36 M	882.04 / 951.39	21.60 k / 24.01 k
<b>Client27</b>	<b>Client73</b>	<b>3 / 4</b>	<b>62.48 M / 31.88 M</b>	<b>1135.17 / 739.47</b>	<b>58.87 k / 30.03 k</b>
Client155	Server640	27 / 27	30.94 M / 31.94 M	774.29 / 797.62	18.11 k / 18.67 k
Client07	Server164	49 / 49	14.44 M / 14.52 M	295.67 / 297.43	2816.90 / 2833.54
Client142	Server592	106 / 109	18.53 M / 5461.84 k	761.91 / 293.65	9326.56 / 3292.57
Client39	Server426	1618 / 0	23.94 M / 0	388.96 /	24.18 k / 0.00
Client100	Server184	57 / 80	40.54 M / 44.34 M	300.00 / 300.75	3780.45 / 10055.00

### Client Owner

HP

### Client Location

New York

### Server Owner

HP

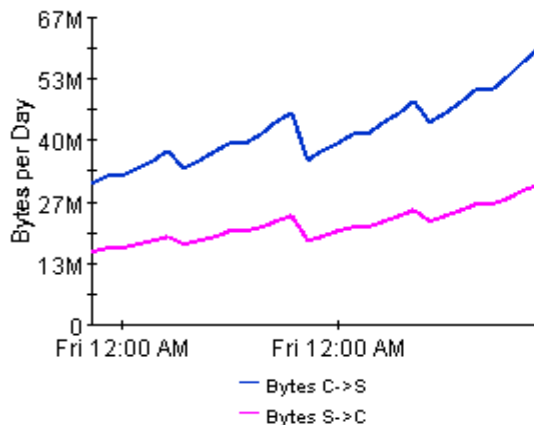
### Server Location

Paris

### Bytes

#### Client27 : Client73

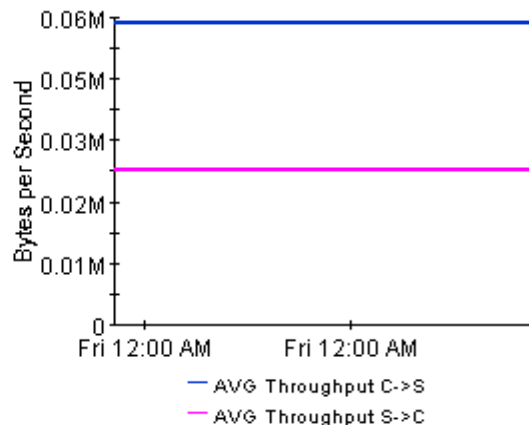
Wed Jul 23 2003 - Thu Aug 21 2003



### Throughput

#### Client27 : Client73

Wed Jul 23 2003 - Thu Aug 21 2003



# NetFlow Global View



## Monthly Top Talkers Summary

The Top Talker Summary Report presents performance metrics for the client / server pairs that generate the most traffic during the selected time period. Selecting a client / server pair from the list of top talkers allows the user to see the historical traffic and throughput for the selected pair. All statistics are displayed for both the "Client to Server" (C->S) and "Server to Client" (S->C) directions as "C->S / S->C".

### Month

July, 2003

June, 2003

### Top Talkers

Client	Server	Number of Flows	Total Bytes	Average Bytes per Packet	Average Throughput (Bps)
Client73	Client159	105 / 87	819.01 M / 860.90 M	882.04 / 951.39	21.60 k / 24.01 k
Client27	Client73	52 / 70	1089.83 M / 556.03 M	1135.17 / 739.47	58.87 k / 30.03 k
Client155	Server640	471 / 471	539.72 M / 557.09 M	774.29 / 797.62	18.11 k / 18.67 k
Client07	Server164	855 / 855	251.83 M / 253.33 M	295.67 / 297.43	2816.90 / 2833.54
Client142	Server592	1849 / 1901	323.21 M / 95.26 M	761.91 / 293.65	9326.56 / 3292.57
Client39	Server426	28.22 k / 0	417.62 M / 0	368.96 /	24.18 k / 0.00
Client100	Server484	204 / 1000	400.00 M / 400.00 M	200.00 / 200.00	2780.45 / 2055.00



### Client Owner

HP

### Client Location

Chicago

### Server Owner

"ABC, Ltd."

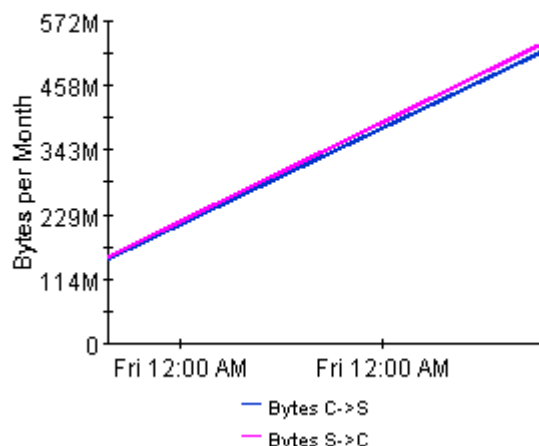
### Server Location

Paris

### Bytes

#### Client155 : Server640

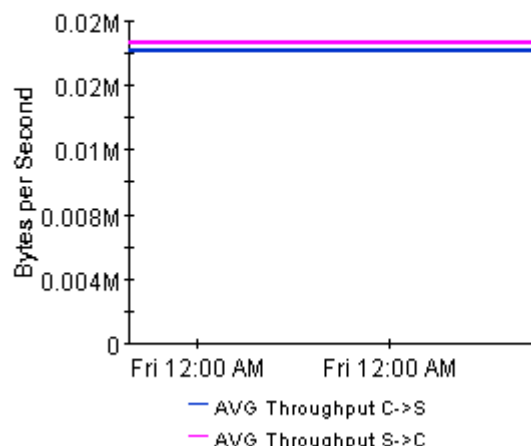
Sun Jun 01 2003 - Tue Jul 01 2003



### Throughput

#### Client155 : Server640

Sun Jun 01 2003 - Tue Jul 01 2003



# NetFlow Global View



## Monthly Application Summary

The Application Summary Report presents application performance metrics aggregated over all clients and servers for the selected time period. This report can be used to view historical application performance and identify applications with excessive demand or degrading performance. All statistics are displayed for both the "Client to Server" (C->S) and "Server to Client" (S->C) directions as "C->S / S->C".

### Month

July, 2003

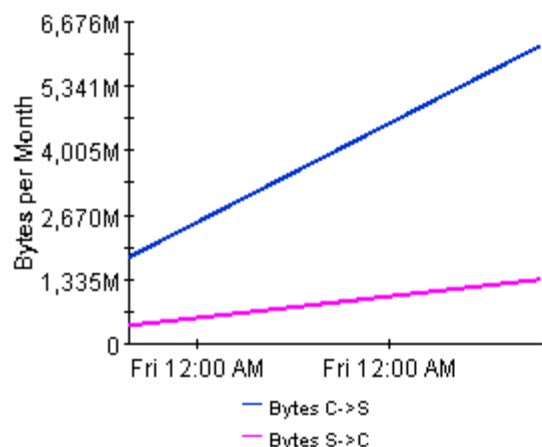
June, 2003

### Applications

Application	TOS	Number of Flows	Total Bytes	Average Bytes per Packet	Average Throughput (Bps)
snmp	0	182.61 k / 66.26 k	6492.93 M / 1369.84 M	361.11 / 314.40	4424.36 / 2009.43
netbios-ssn	0	15.91 k / 16.74 k	1251.50 M / 936.44 M	704.58 / 542.42	7357.98 / 5379.51
ftp-data	0	87 / 105	1089.84 M / 556.72 M	1134.79 / 739.77	58.83 k / 30.04 k
vrtrapsrver	0	17 / 17	713.19 M / 12.03 M	1405.29 / 40.00	45.57 k / 768.55
zephyr-srv	0	35 / 35	8372.71 k / 435.82 M	45.72 / 1402.90	729.86 / 37.99 k
scoremgr	0	17 / 17	3763.36 k / 223.78 M	40.00 / 1404.99	797.65 / 47.43 k
xinuexpansion3	0	17 / 17	3172.44 k / 189.30 M	40.00 / 1404.99	785.49 / 46.87 k
orion-rmi-reg	0	70 / 70	15.40 M / 163.20 M	44.49 / 416.66	430.23 / 4637.02
OTHER_APPS	0	18.75 k / 453	131.28 M / 10.66 M	460.41 / 133.93	701.26 / 1652.34

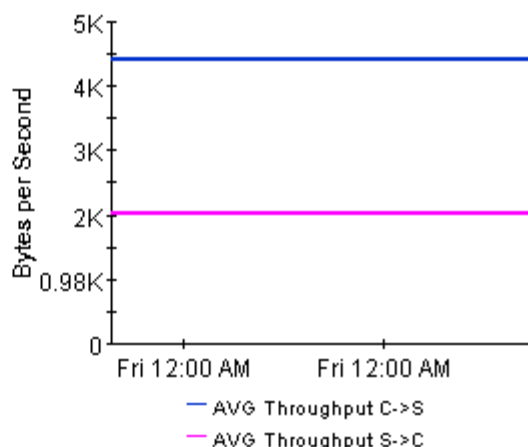
**Bytes snmp**

Sun Jun 01 2003 - Tue Jul 01 2003



**Throughput snmp**

Sun Jun 01 2003 - Tue Jul 01 2003



# NetFlow Global View

## Monthly Server Summary



The Server Summary Report presents server performance metrics aggregated over all clients and applications for the selected time period. This report can be used to view historical server performance and identify servers with excessive demand or degrading performance. All statistics are displayed for both the "Client to Server" (C->S) and "Server to Client" (S->C) directions as "C->S / S->C"

### Month

July, 2003

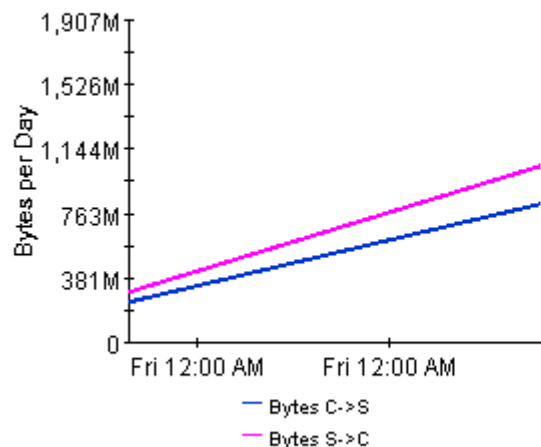
June, 2003

### Servers

Server	Number of Flows	Total Bytes	Average Bytes per Packet	Average Throughput (Bps)
Client159	279 / 262	854.11 M / 1089.18 M	584.20 / 728.39	7604.18 / 9861.42
Client73	2651 / 2599	1100.28 M / 564.82 M	1088.24 / 708.39	46.47 k / 26.07 k
Server164	3889 / 4430	758.83 M / 813.02 M	294.55 / 297.47	2814.49 / 2847.59
Server640	471 / 471	539.72 M / 557.09 M	774.29 / 797.62	18.11 k / 18.67 k
Server592	2093 / 2145	325.32 M / 95.95 M	757.18 / 290.57	8999.45 / 3146.60
Server426	28.43 k / 0	417.78 M / 0	369.04 /	24.19 k / 0.00
15.1.158.40	890 / 0	346.53 M / 0	391.92 /	33.06 k / 0.00
Server130	890 / 0	346.53 M / 0	391.92 /	10.16 k / 0.00
Server13	890 / 0	346.53 M / 0	391.91 /	25.99 k / 0.00

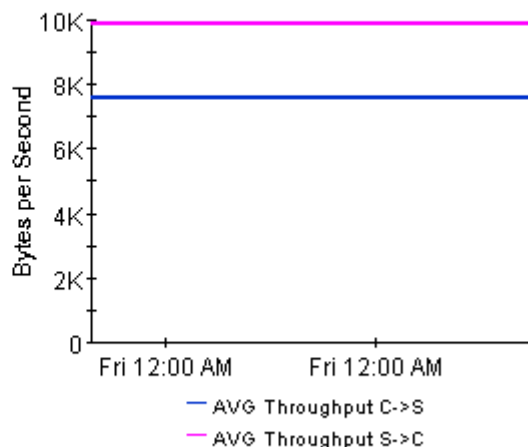
### Bytes Client159

Sun Jun 01 2003 - Tue Jul 01 2003



### Throughput Client159

Sun Jun 01 2003 - Tue Jul 01 2003





## Application Distribution

NetFlow Global View includes four application distribution reports:

- Daily Server Application Distribution
- Monthly Server Application Distribution
- Daily Top Talkers Application Distribution
- Monthly Top Talkers Application Distribution

These reports answer the following questions:

- Where is demand highest, and what does the trend look like?
- Where is performance worsening, and what does the trend look like?

These questions are answered by breaking down total volume on a per-application basis. The server report provides volume and throughput information for each application hosted by a server, while the top talker report provides volume and throughput information for each application running between a particular client/server pair.

Once you select a day or month, the server version of the report displays a list of servers ranked by total volume. For each server, you have the following statistics:

- Number of flows (client > server :: server > client)
- Total bytes (client > server :: server > client)
- Average bytes per packet (client > server :: server > client)
- Average throughput (client > server :: server > client)

Select a server to find out who owns it, where it is located, and which applications hosted by the server are responsible for most of the traffic volume. The list of applications sorts by total volume for the time period. Select an application to look at graphs for volume and throughput. The graphs in the daily version show ups and downs over the previous thirty days, while the graphs in the monthly version show ups and downs over the previous 12 months.

The top talker report is nearly identical, although the context is different. When you select a client/server pair, the report will tell you who owns the client and where the client is located, in addition to server owner and server location. Use this report to find out which applications are responsible for high demand, what the volume trend looks like application by application, and what the performance trend looks application by application.

# NetFlow Global View



## Daily Server - Application Distribution

The Server - Application Distribution Report presents server / application performance metrics aggregated over all flow sources. This report can be used to view the distribution of application traffic on a selected server. It also allows the user to view historical server / application pair performance and identify pairs with excessive demand or degrading performance. All statistics are displayed for both the "Client to Server" (C->S) and "Server to Client" (S->C) directions as "C->S / S->C".

### Day

August 21, 2003

August 20, 2003

August 19, 2003

### Servers

Server	Number of Flows	Total Bytes	Average Bytes per Packet	Average Throughput (Bps)
Client159	16 / 15	48.97 M / 62.45 M	584.20 / 728.39	7604.18 / 9861.42
Client73	152 / 149	63.08 M / 32.38 M	1088.24 / 708.39	48.47 k / 26.07 k
Server164	223 / 254	43.51 M / 46.61 M	294.55 / 297.47	2814.49 / 2847.59
Server640	27 / 27	30.94 M / 31.94 M	774.29 / 797.62	18.11 k / 18.67 k
Server592	120 / 123	18.65 M / 5501.01 k	757.18 / 290.57	8999.45 / 3148.60
Server426	1630 / 0	23.95 M / 0	369.04 /	24.19 k / 0.00

### Server Owner

HP

### Server Location

Chicago

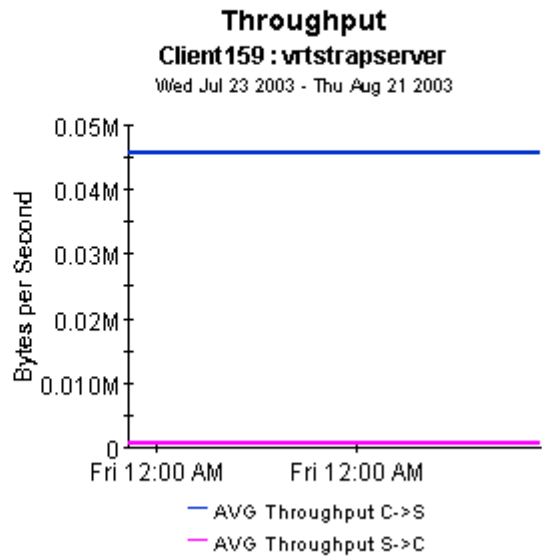
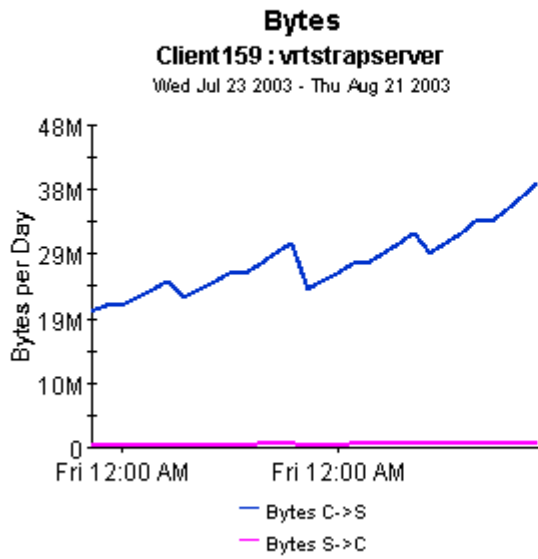
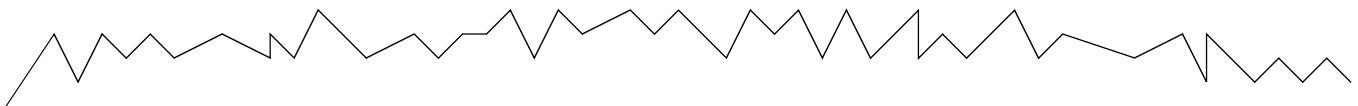
### Supported Applications

#### Client159

Application	TOS	Number of Flows	Total Bytes	Average Bytes per Packet	Average Throughput (Bps)
vrstrapserver	0	1 / 1	40.89 M / 689.65 k	1405.29 / 40.00	45.57 k / 768.55
zephyr-srv	0	1 / 1	418.25 k / 24.99 M	40.00 / 1405.32	637.23 / 38.07 k
scoremgr	0	1 / 1	215.77 k / 12.83 M	40.00 / 1404.99	797.65 / 47.43 k
xinuexpansion3	0	1 / 1	181.89 k / 10.85 M	40.00 / 1404.99	785.49 / 46.87 k
orion-rmi-reg	0	2 / 2	880.16 k / 9288.46 k	44.43 / 414.59	429.61 / 4511.45
OTHER_APPS	0	2 / 1	5251.68 k / 168	1403.07 / 42.00	44.24 k / 875.00
cdn	0	4 / 4	360.42 k / 3463.24 k	44.39 / 378.66	179.00 / 1719.74
sdt-lmd	0	1 / 1	742.31 k / 74.92 k	370.41 / 44.28	4153.67 / 419.01
active-net	0	3 / 3	29.31 k / 261.59 k	44.96 / 428.84	1201.55 / 10.45 k







# NetFlow Global View



## Monthly Server - Application Distribution

The Server - Application Distribution Report presents server / application performance metrics aggregated over all flow sources. This report can be used to view the distribution of application traffic on a selected server. It also allows the user to view historical server / application pair performance and identify pairs with excessive demand or degrading performance. All statistics are displayed for both the "Client to Server" (C->S) and "Server to Client" (S->C) directions as "C->S / S->C".

### Month

July, 2003

June, 2003

### Servers

Server	Number of Flows	Total Bytes	Average Bytes per Packet	Average Throughput (Bps)
Client159	279 / 262	854.11 M / 1089.18 M	584.20 / 728.39	7604.18 / 9861.42
<b>Client73</b>	<b>2651 / 2599</b>	<b>1100.28 M / 564.82 M</b>	<b>1088.24 / 708.39</b>	<b>48.47 k / 26.07 k</b>
Server164	3889 / 4430	758.83 M / 813.02 M	294.55 / 297.47	2814.49 / 2847.59
Server640	471 / 471	539.72 M / 557.09 M	774.29 / 797.62	18.11 k / 18.67 k
Server592	2093 / 2145	325.32 M / 95.95 M	757.18 / 290.57	8999.45 / 3148.60
Server426	28.43 k / 0	417.78 M / 0	369.04 /	24.19 k / 0.00

### Server Owner

HP

### Server Location

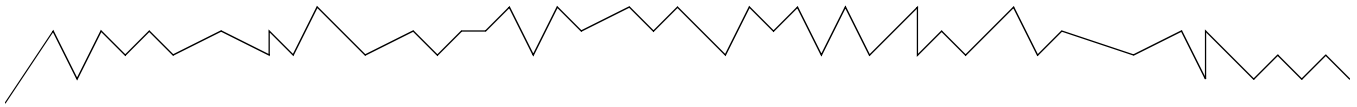
Paris

### Supported Applications

#### Client73

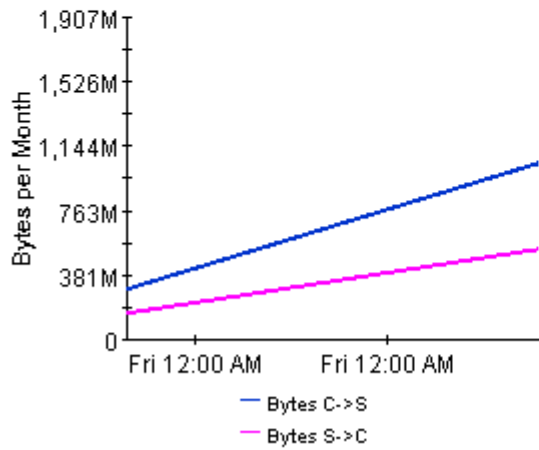
Application	TOS	Number of Flows	Total Bytes	Average Bytes per Packet	Average Throughput (Bps)
<b>ftp-data</b>	<b>0</b>	<b>87 / 105</b>	<b>1089.84 M / 556.72 M</b>	<b>1134.79 / 739.77</b>	<b>58.83 k / 30.04 k</b>
snmp	0	2529 / 2494	8113.56 k / 8103.67 k	185.33 / 181.00	2804.80 / 2585.33
netbios-ssn	0	35 / 0	2322.00 k / 0	337.04 /	1810.69 / 0.00





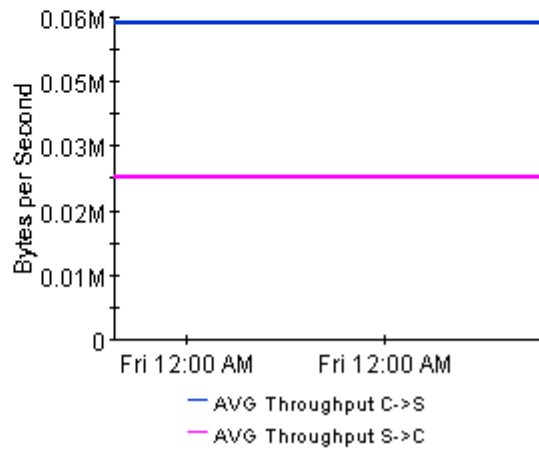
**Bytes**  
Client73 : ftp-data

Sun Jun 01 2003 - Tue Jul 01 2003



**Throughput**  
Client73 : ftp-data

Sun Jun 01 2003 - Tue Jul 01 2003



# NetFlow Global View



## Daily Top Talkers - Application Distribution

The Top Talker - Application Distribution Report presents performance metrics for the client / server pairs that generate the most traffic during the selected time period. Selecting a client / server pair from the list of top talkers allows the user to see the distribution of application traffic generated by the pair. Selecting a application displays the historical traffic and throughput for the selected client / server / application combination. All statistics are displayed for both the "Client to Server" (C->S) and "Server to Client" (S->C) directions as "C->S / S->C".

### Day

August 21, 2003

August 20, 2003

August 19, 2003

### Top Talkers

Client	Server	Number of Flows	Total Bytes	Average Bytes per Packet	Average Throughput (Bps)
Client73	Client159	6 / 5	44.61 M / 46.89 M	882.04 / 951.39	21.60 k / 24.01 k
Client27	Client73	3 / 4	59.36 M / 30.29 M	1135.17 / 739.47	58.87 k / 30.03 k
Client155	Server640	26 / 26	29.40 M / 30.34 M	774.29 / 797.62	18.11 k / 18.67 k
Client07	Server164	47 / 47	13.72 M / 13.80 M	295.67 / 297.43	2816.90 / 2833.54
Client142	Server592	101 / 104	17.60 M / 5188.75 k	761.91 / 293.65	9326.56 / 3292.57
Client39	Server426	1537 / 0	22.75 M / 0	368.96 /	24.18 k / 0.00
Client100	Server181	51 / 88	40.04 M / 40.77 M	800.00 / 800.75	3780.45 / 3055.00

### Client Owner

HP

### Client Location

Paris

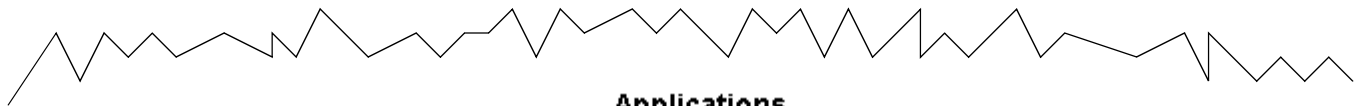
### Server Owner

HP

### Server Location

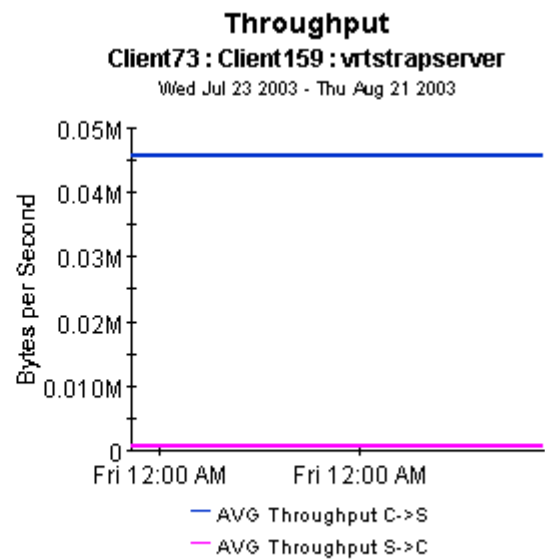
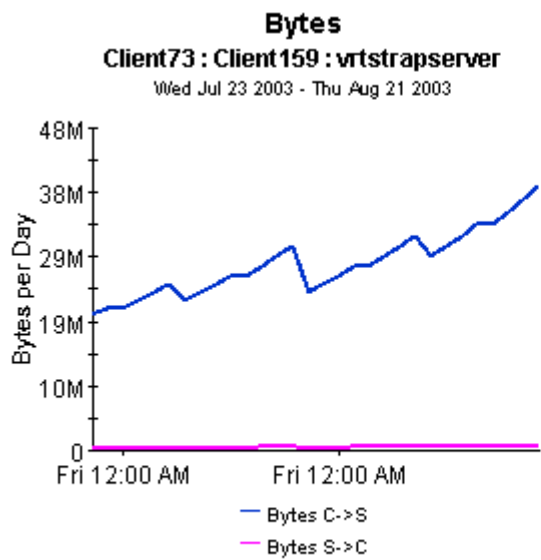
Chicago





### Applications Client73 : Client159

AppName	TOS	Number of Flows	Total Bytes	Average Bytes per Packet	Average Throughput (Bps)
wtstrapserver	0	1 / 1	38.85 M / 655.17 k	1405.29 / 40.00	45.57 k / 768.55
zephyr-srv	0	1 / 1	397.34 k / 23.74 M	40.00 / 1405.32	637.23 / 38.07 k
scoremgr	0	1 / 1	204.98 k / 12.19 M	40.00 / 1404.99	797.65 / 47.43 k
xinuexpansion3	0	1 / 1	172.79 k / 10.31 M	40.00 / 1404.99	785.49 / 46.87 k
OTHER_APPS	0	2 / 1	4989.10 k / 160	1403.07 / 42.00	44.24 k / 875.00



# NetFlow Global View



## Monthly Top Talker - Application Distribution

The Top Talker - Application Distribution Report presents performance metrics for the client / server pairs that generate the most traffic during the selected time period. Selecting a client / server pair from the list of top talkers allows the user to see the distribution of application traffic generated by the pair. Selecting a application displays the historical traffic and throughput for the selected client / server / application combination. All statistics are displayed for both the "Client to Server" (C->S) and "Server to Client" (S->C) directions as "C->S / S->C".

### Month

July, 2003

June, 2003

### Top Talkers

Client	Server	Number of Flows	Total Bytes	Average Bytes per Packet	Average Throughput (Bps)
Client73	Client159	105 / 87	819.01 M / 860.90 M	882.04 / 951.39	21.60 k / 24.01 k
Client27	Client73	52 / 70	1089.83 M / 556.03 M	1135.17 / 739.47	58.87 k / 30.03 k
Client155	Server640	471 / 471	539.72 M / 557.09 M	774.29 / 797.62	18.11 k / 18.67 k
Client07	Server164	855 / 855	251.83 M / 253.33 M	295.67 / 297.43	2816.90 / 2833.54
Client142	Server592	1849 / 1901	323.21 M / 95.26 M	761.91 / 293.65	9326.56 / 3292.57
Client39	Server426	28.22 k / 0	417.62 M / 0	368.96 /	24.18 k / 0.00
Client122	Server184	224 / 1222	422.22 M / 127.72 M	222.22 / 222.75	2782.45 / 2255.22

### Client Owner

HP

### Client Location

Paris

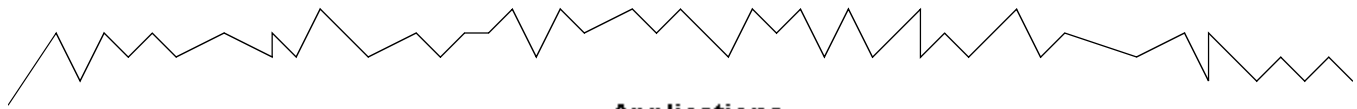
### Server Owner

HP

### Server Location

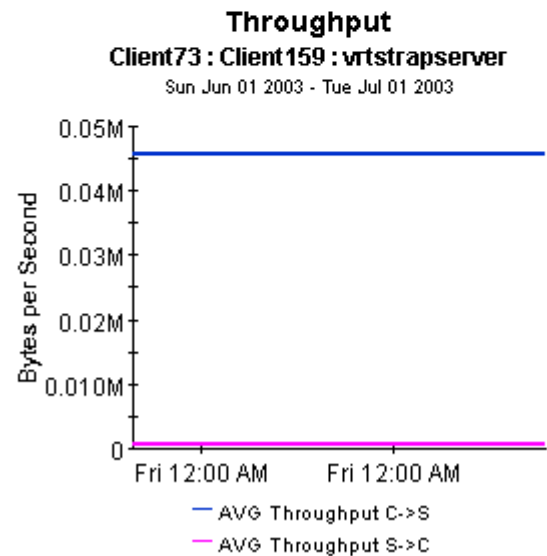
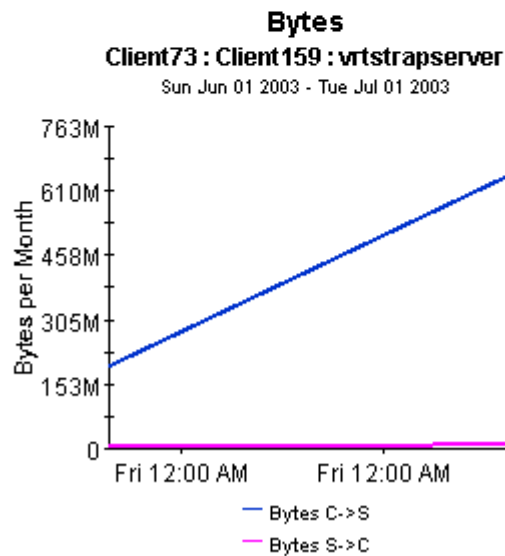
Chicago





### Applications Client73 : Client159

AppName	TOS	Number of Flows	Total Bytes	Average Bytes per Packet	Average Throughput (Bps)
vrtrapsrver	0	17 / 17	713.19 M / 12.03 M	1405.29 / 40.00	45.57 k / 768.55
zephyr-srv	0	17 / 17	7294.96 k / 435.78 M	40.00 / 1405.32	637.23 / 38.07 k
scoremgr	0	17 / 17	3763.36 k / 223.78 M	40.00 / 1404.99	797.65 / 47.43 k
xinuexpansion3	0	17 / 17	3172.44 k / 189.30 M	40.00 / 1404.99	785.49 / 46.87 k
OTHER_APPS	0	35 / 17	91.60 M / 2930	1403.07 / 42.00	44.24 k / 875.00







## Editing Tables and Graphs

Any table or graph can be viewed in several ways. Although the default view is usually adequate, you can easily change to a different view. 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** or **Edit Graph** icons.

### View Options for Tables

Right-clicking a table, or selecting **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.

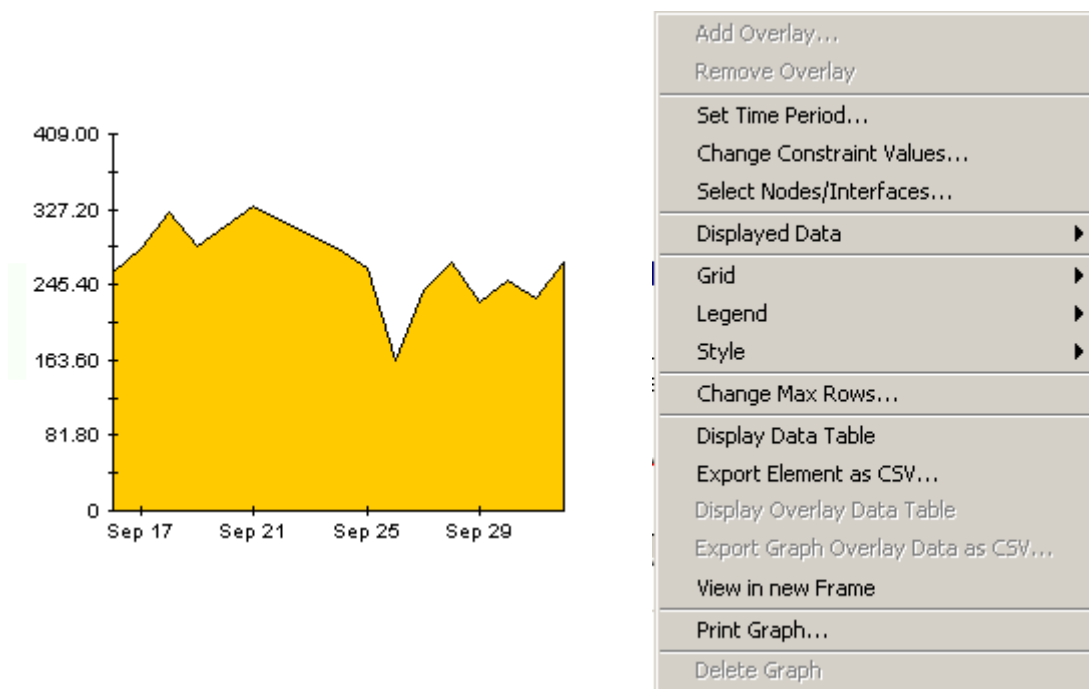
**Change Max Rows** increases or decreases the number of rows in a table. The default is 50. If you expand the default, the table may take more time to open. If you are trending a large network, using the default ensures that the table opens as quickly as possible.

**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.

Direction	IpPrecedence	Switched Bytes	Switched Pkts	Time Period
Input	0	105,668	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	800	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	658	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

## View Options for Graphs

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



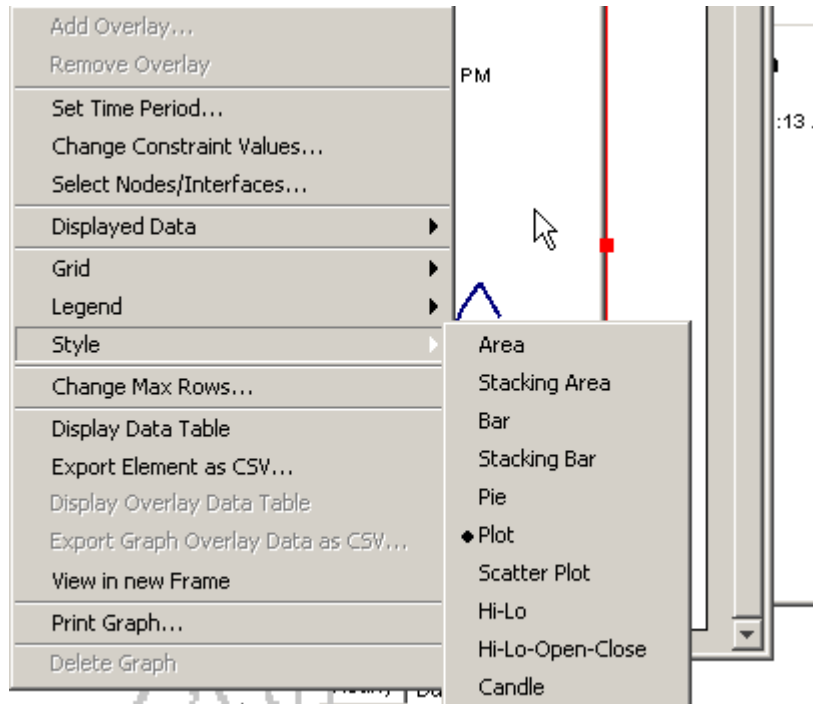
The following table provides details about each option.

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.

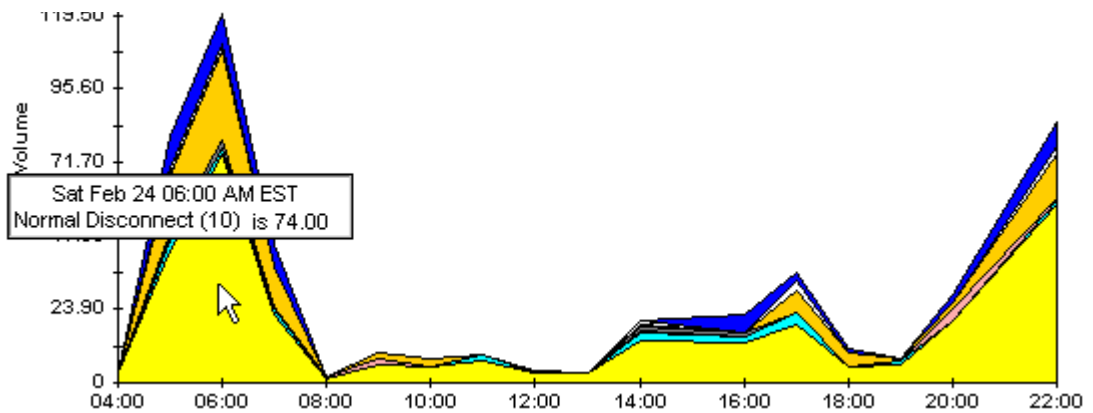
## Style Options

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



## Style > Area

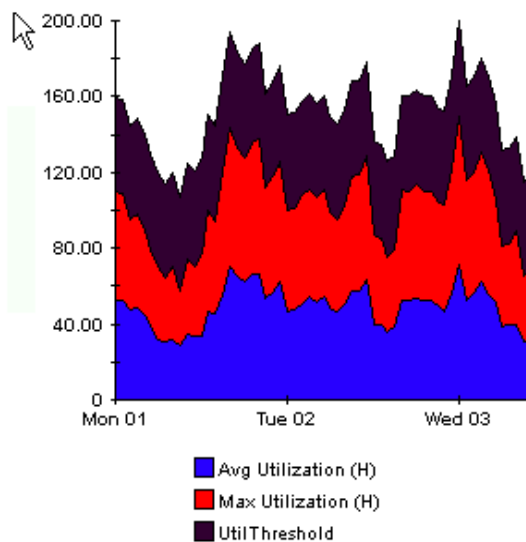
The plot or bar chart changes to an area graph. While relative values and total values are easy to view in this format, absolute values for smaller data types may be hard to see. Click anywhere within a band of color to display the exact value for that location



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

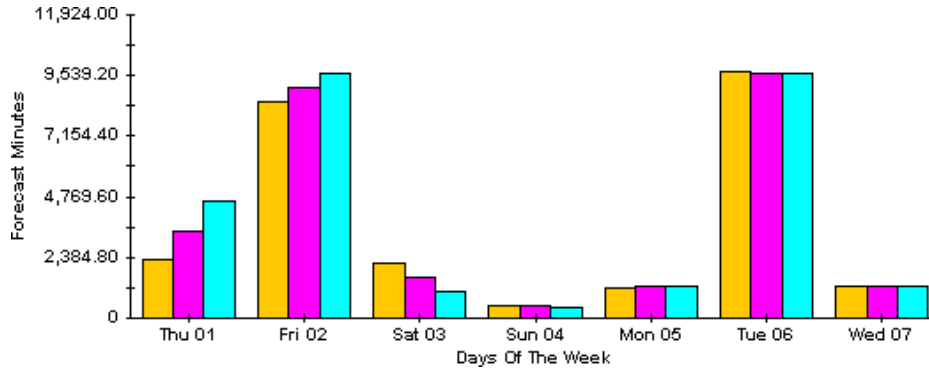
## Style > Stacking Area

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



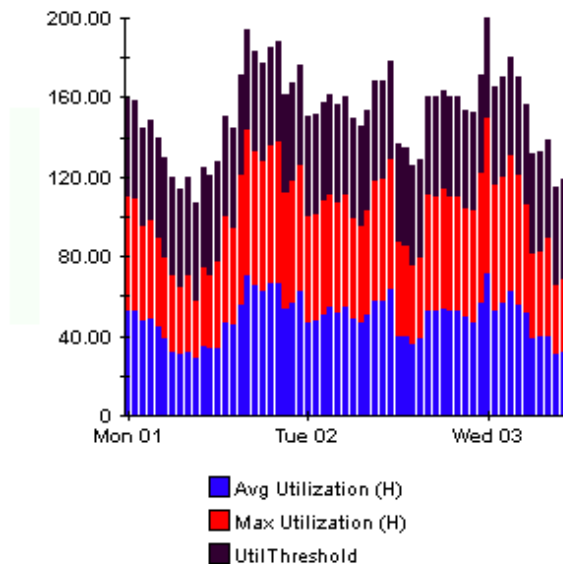
## Style > Bar

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



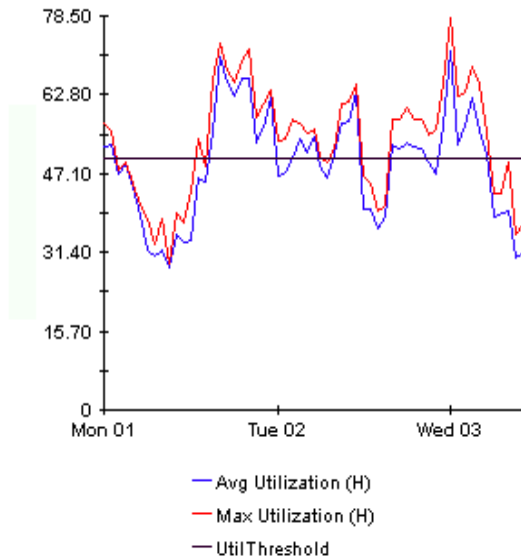
## Style > Stacking Bar

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



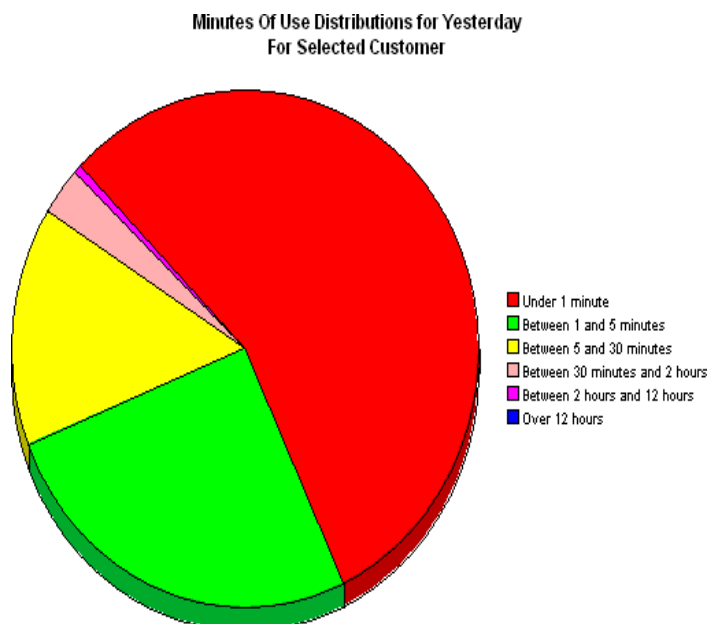
## Style > Plot

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



## Style > Pie

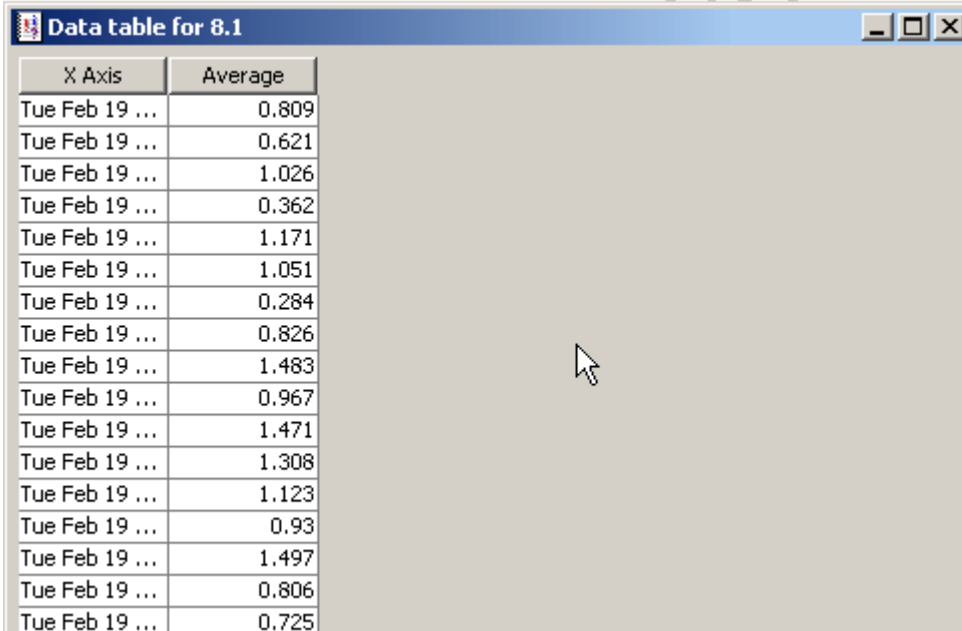
An area graph becomes a pie chart. Bands in an area graph convert to slices of a pie and the pie constitutes a 24-hour period. This view is helpful when a small number of data values are represented and you are looking at data for one day.



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

## Display Data Table

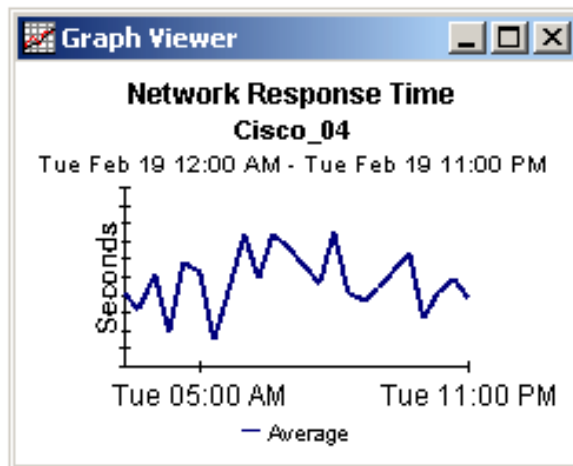
This option changes a graph into a spreadsheet.



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.





## A

application folder, **9**

## C

change max rows option, **51**

client folder, **9**

## D

Daily Application Top Ten, **25**

Daily Client Summary, **31**

Daily Server Application Distribution, **39**

Daily Server Summary, **31**

Daily Server Top Ten, **25**

Daily Top Talkers Application Distribution, **39**

Daily Top Talker Summary, **31**

Daily Top Talker Top Ten, **25**

demo package, **19**

DetailCallRecord format, **8**

Display Data Table, **51**

displayed data option, **51**

## F

filtering, **8**

    application, **14**

    Client/Server, **14**

    distributed systems, **15**

    Top X Flows, **14**

filtering by customer, **11**

## G

graph view options, **49**

grid options, **51**

## L

legend options, **51**

## M

mapping utility, **9**

Monthly Application Summary, **31**

Monthly Application Top Ten, **25**

Monthly Client Top Ten, **25**

Monthly Server Application Distribution, **39**

Monthly Server Summary, **31**

Monthly Top Talkers Application Distribution, **39**

Monthly Top Talker Summary, **31**

## N

NetFlowGVDP.teel, **20, 21**

NetFlowGVDP\_addr2name.pro, **22**

NetFlow Interface to Global View Datapipe, **9**

NetFlow Preprocessor, **8, 13**

## P

polling, **9**

Product Manuals Search page, **12**

## R

report parameters, **11**

## S

server folder, **9**

SourceDirectory path, **21**

style options for graphs, **51**

summary reports, **10**

## T

table view options, **49**

TEEL files, **21**

top ten folder, **9**

top ten reports, **10**

TOS folder, **9**

## **U**

Use Absolute Time, **49**

## **V**

view in new frame, **50**