VistaView for Traffic Shaping - Packeteer

Part Number: 20_300_144_30

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About this book

Congratulations on your purchase of **InfoVista**, the Information System Quality of Service manager. With InfoVista you can interrogate resources in your Information System (IS), calculate key performance indicators, and generate reports on resource behavior. You use these reports to monitor your *Service Level Agreements* (SLA) and proactively manage your IS resources.

VistaViews are turnkey applications for Information System SLA reporting. They run over the standard InfoVista "engine". The **VistaView for Traffic Shaping - Packeteer** provides a set of pre-configured report templates which can be used to monitor your PacketShaper deployment.

InfoVista documentation

The InfoVista documentation set comprises the following volumes:

InfoVista Installation Guide

This manual describes the installation of the InfoVista core product.

InfoVista Quick Start

This manual gives procedures for installing and starting the InfoVista system and how to produce reports using report templates from standard VistaViews.

InfoVista User's Guide

This manual describes the InfoVista client graphic interface, how to model your Information System, and tasks you can perform with the core product.

InfoVista Reference Manual

This manual documents the syntax of all commands used by the InfoVista client software in text mode.

VistaViews (of which this book describes one)

This is a set of manuals describing each of the standard VistaViews provided.

Documentation supports

InfoVista documents listed above come on paper and PDF files with the software. PDF files are viewed with the viewer software provided.

This book

This manual is divided into the following sections:

- Chapter 1 - **Getting Started**. This chapter provides an overview of the product and its main functionalities. It also explains how to model your resources and get reports up and running as quickly as possible.

- Chapter 2 - **The Reports**. This chapter details individual reports.

- Chapter 3 - **Manipulating InfoVista reports**. This chapter provides useful information on how to best exploit your InfoVista reports.

Comments and Suggestions

At the end of this book, you'll find a remarks form. We welcome any comments you have on our product or its documentation. Your remarks are examined thoroughly and taken into account for future versions of InfoVista.

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3 Manipulating InfoVista Reports

1 Getting started

The **VistaView for Traffic Shaping - Packeteer** provides a set of pre-configured reports which are specifically designed to monitor:

- PacketShaper Classes and Applications
- Traffic shaping on PacketShaper devices
- Policy enforcement on PacketShaper devices

Overview

Packeteer technology is designed to support Policy-Based Network (PBN) deployments. PBNs manage bandwidth and traffic according to a set of policies that ensure varying levels of QoS (Quality of Service) for different kinds of traffic and Classes of Service (CoS). Using PBNs enables centralized network management and ensures QoS standards that may underly a contractual Service Level Agreement. In this case, PacketShaper devices are deployed across the network and used to filter traffic according to policies established by the administrator.

Prerequisites

The **VistaView for Traffic Shaping - Packeteer** requires the InfoVista 2.2 engine and default Libraries.

The installed firmware on the Packeteer device must be PacketWise 5.0.6 or later.

You need the following MIBs installed under InfoVista:

- MIB2
- PACKETEER-MIB
- PACKETEER-RTM-MIB

All of these prerequisites should already be in place if you have executed the default installation.

Technology

PacketShaper technology involves "shaping" network traffic according to policies that are applied to different types of CoS. A *Class* in this case represents a number of different factors:

- direction (Inbound or Outbound)
- location re. the PacketShaper device (Inside or Outside)
- different protocols (HTTP, ICMP, etc.),

- different applications (Real Networks, Oracle, etc.)

- different customers (defined by IP addresses, subnet masks, etc.)

A PacketShaper Class is typically composed of location, direction, and application (eg. *Inside/Outbound/SMTP*). The Report Templates included in this VistaView use default properties for Classes that are specified according to location and direction (Inside/Inbound, Inside/Outbound, Outside/Inbound and Outside/Outbound). Applications and protocols running through the device are autodetected by the Packeteer firmware and Classes are then automatically generated. It is of course possible to configure PacketShapers with custom classes (notably the case for Service Providers).

NOTE:

It is important that the autodiscovery feature on the PacketShaper device is enabled. This allows the device to autodetect different types of traffic which are then automatically collated into Classes.

A PacketShaper device is typically installed at the network edge where it is used to monitor traffic across a major interface such as a WAN connection.

The illustration below shows this kind of configuration:
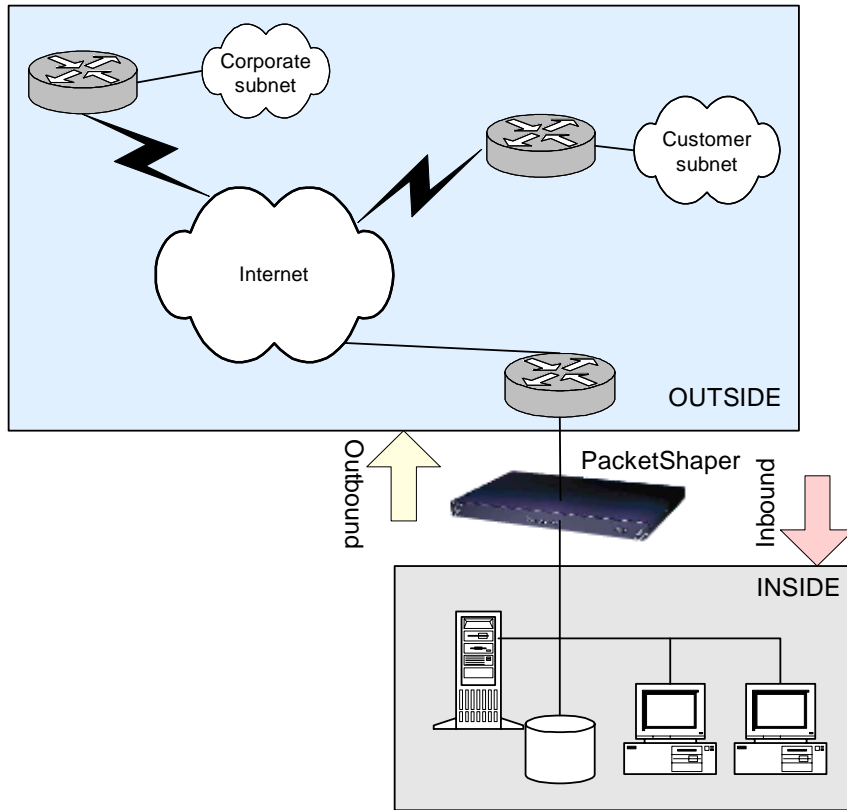
Standard procedure for setting up PBN functionality using PacketShapers involves:

• Establishing Classes for the deployment in question.

• Finding out which Classes account for most bandwidth usage.

• Applying policies, enforced via the PacketShaper device, according to the Classes in use.

The Reporting solution contained in the **VistaView for Traffic Shaping - Packeteer** gives the network administrator:

• In-depth monitoring with a broad range of easy to read Report Templates that are designed for different user profiles with different areas of interest.

• The possibility of creating fully customized Reports for different customers and different Classes.

- Full SLM capability with Reports providing standard SLM functionality such as event notification and baselining.

The reports in this VistaView are designed to monitor:

- PacketShaper devices,

- A group of PacketShaper devices,

- Traffic through the device for an application

- Traffic through the device for a group of applications,

- Traffic through the device for a Class,

- Traffic through the device for a group of Classes.

Class types syntax

PacketShaper technology provides for a wide variety of different Classes, combining the parameters we mentioned above (). To designate a Class, InfoVista uses the same simple syntax as Packeteer:

`Inbound` or `Outbound` / `Inside` or `Outside` / `<Application or Protocol name>`

For example `Inbound/.*/SNMP`   A **Class name** - a filter is used (`.*`)
`Outbound/Inside/TCP`   An **Application**/**full Class name** - all parameters are specified.

See your Packeteer user documentation for further details.

Quick Start

Installation

The **VistaView for Traffic Shaping - Packeteer** is delivered as an InfoVista library file called *InfoVista_Traffic_Shaping_-_Packeteer.ivl*.

During the installation of InfoVista, this file is copied to disk but not installed on the InfoVista server. You must install it manually on the InfoVista server.

1. In the InfoVista main window, execute the command **File/Install VistaViews**

2. Select the folder containing the .ivl file (the default folder is `..\InfoVista\Essentials\VViews`).

3. Select the .ivl file, click on **Install**, and wait for the installation process to finish.

After installation, check that the InfoVista object tree contains the Library **InfoVista Traffic Shaping - Packeteer**.

Entering the VistaView license key

After installing the VistaView you can use the reports in the VistaView for a 30 day evaluation period. To continue using the reports after this 30 day period you must enter the VistaView license key provided by InfoVista.

1. In the InfoVista main window, select the **General** tab and expand the node **Libraries**.

2. Double click on the Library **InfoVista Traffic Shaping - Packeteer**, to open the library Property sheet.

3. Enter the VistaView license key in the **License** field (the key has the form xxxx-xxxx).

4. Click on **OK** in the library Property sheet.

For details on Installing VistaViews and the use of license keys, see the *InfoVista Installation Guide*.

Roadmap for modeling the resources

This section explains how to create Instances of the Vistas contained in the Library that you have installed on your InfoVista engine. It is assumed that you are familiar with basic InfoVista operations. For details, see the *InfoVista User's Guide.*

Modeling a PacketShaper

Step 1
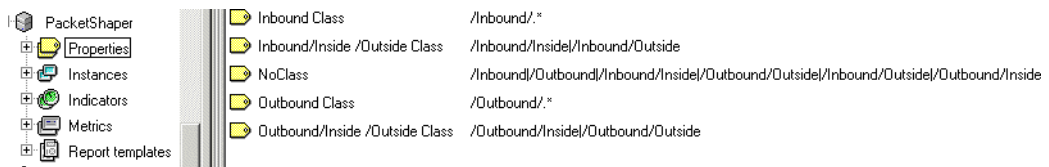
Create an Instance of the Vista **PacketShaper** to represent the router.

Step 2

Edit the following property values of the Instance:

- *ip* - an IP address for the device.
- *port* - the port number for the SNMP agent. If in doubt, use the default value, 161.
- *snmprd* - the SNMP read community for the SNMP agent. If in doubt, use the default value **public**. This often works!

It is strongly recommended that you **do not** change the Property Values set in the PacketShaper Vista (these are all Class settings):

You may need to check that the SNMP agent on the PacketShaper is configured, enabled, and authorized to accept SNMP requests coming from your InfoVista server system.

Modeling a PacketShaper Application

You should use the built-in monitoring software on your PacketShaper device to work out which Applications you wish to monitor. See the PacketShaper *Getting Started Guide* for further details.

Step 1

Create an instance of the Vista **PacketShaper Application** to model a Class on your PacketShaper Instance.

Step 2

Edit the Property Values of the Instance as follows:

- *Class Name Pp* - enter the Class of application you wish to monitor. For example, to monitor all inbound and outbound HTTP traffic, set this to `.*/HTTP`. To monitor only inbound HTTP traffic, set it to `Inbound/HTTP`. The Report will show all Classes associated with the application specified.

- Do **not** modify the Property *Inbound.*

Step 3

Drag and drop the PacketShaper Instance into the *Contents* field of the PacketShaper application. It is possible to add more PacketShaper Instances if you wish.

Modeling a PacketShaper Class

The PacketShaper Class Vista lets you specify a particular Class which you wish to monitor (rather than all the Classes associated with an application).

To model a PacketShaper Class:

Step 1

Create an instance of the Vista **PacketShaper Class** to model the Class.

Step 2

Edit the Property Values of the Instance as follows:

Class Full Name Pp - enter the full Class name of application you wish to monitor. For example, `Inbound/Inside/HTTP`. Remember to specify all the parameters and do **not** use wildcards (`.*`).

Step 3

Drag and drop the PacketShaper Instance into the *Contents* field of the PacketShaper application. It is possible to add more PacketShaper Instances if you wish.

Modeling Groups

The above three types of Vista can all be grouped (**PacketShaper Group**, **PacketShaper Application Group**, **PacketShaper Class Group**). Group Instances are used for Reports that cover more than one Instance.

To model a group:

Step 1

Create an Instance of the Group Vista.

Step 2

Drag & drop a number of Instances to the **Contents** attribute. There are no Properties to modify.

Starting reports

Using the Instant Report wizard

As a general rule you should start one each of the Report Templates for each of the modeled Instances. This means that for a **Performance** report, for example, you should start the Real Time, Hourly, Daily and Weekly reports for each Instance. Doing this uses very little extra server CPU resources and, paradoxically, can even save disk space.

To start a report, the simplest method is the following:

1. In the main window, select the Report Template you want to use (you will find the report templates listed under the **Report Templates** node of the VistaView library).

2. Right click on the Report Template name and select the command **Instant Report**.

3. In the **Instant Report** dialog box, select the Instance you want to monitor.

4. Click on **Create Report**. The report is created.

NOTE:

Using the **Instant Report** wizard, as described in the procedure above, you can create reports for multiple Instances (just select several Instances in the **Instant Report** box) or even create reports from multiple Report Templates (just select several Report Templates in the right hand pane of the main window, before using the command **Instant Report**).

Measurements

The reports in the **VistaView for Traffic Shaping - Packeteer** monitor various resources associated with Packeteer technology. The Indicators in these reports show the important operational parameters of these elements.

Indicators for PacketShapers

Current Rate

The *Current Rate* Metric monitors the speed of Inbound/Outbound traffic across the PacketShaper device. Speed is measured in bps and reported in Kbps on the "Network Performance Overview" Reports. This Metric enables you to compare Inbound/Outbound speeds relative to overall network performance.

Delay

Delay Metrics measure the time between the sending and the receiving of a packet across a defined segment or element on the network. PacketShaper technology evaluates delay by Class. *Net Delay* measures average delay from the network and *Server Delay* measures average delay from the Server originating the packet. *Total Delay* measures overall delay from all sources, as an average. *Delay Variation* Graphs illustrate fluctuations in total delay over time. The *Application Total Delay over Baseline* Graph relates total delay for an Application to a weekly baseline figure, calculated on the previous seven days using the `baselineDay()` operator.

Size

Size Metrics show the capacity of a particular link, measured in bits per second. This is the maximal pipe size for the link, and so it can be used to analyze bandwidth usage for the link in question, notably with regard to the *Rate* and *Bandwidth Utilization* Metrics.

Link Rate

This Metric measures the peak speed of the link in question, in Kilobits per second. It can thus be used to compare theoretical speed (Size Metrics), peak speed (Link Rate Metrics) and bandwidth consumption per Application

(Bandwidth Utilization Metrics).

Hits

The *Hits* Metrics measure the number of packets corresponding to a particular filter, that are recorded on the PacketShaper over the display period. *Class Hits* simply shows hits for each Application (remember, this VistaView defines "Application" as the fully-specified name of a Class). *Policy Hits* shows hits for each defined Policy on the PacketShaper.

Pkts Count and DataPkts Count

These Metrics simply cover the number of packets counted on the PacketShaper for a given Class. The **DataPkts Count** shows only the number of TCP data packets.

Efficiency

Efficiency Metrics measure the degree of success of an operation. *Network Efficiency* gives the ratio of sent to dropped TCP packets, expressed as a percentage. *Transaction Efficiency* uses a different calculation: it uses the `classTransactionsAboveTotalDelayThreshold` from the Packeteer-RTM-MIB, which uses a hard-coded delay threshold as a filter for Transactions. **Transaction efficiency** measures the proportion of these Transactions ("successful") to all Transactions, for a particular Class. *Inbound* or *Outbound Efficiency* measures **Network Efficiency** for either Inbound or Outbound traffic across all Classes.

Transaction

Transaction Metrics record the number of transactions for a given Class.

Volume

This Metric shows the quantity of traffic on the PacketShaper, expressed in KiloBytes.

Bandwidth Utilization

Bandwidth Utilization Metrics are based on the ratio between total available bandwidth and used bandwidth for a particular Class, Application or Group.

Reachability

This Metric shows reachability for Classes on the PacketShaper. "Reachability" here is defined as the proportion of a particular Class that is under the delay threshold established in the `classTransactionsAboveTotalDelayThreshold`. So the *Reachability* Metric shows the proportion of all Classes with acceptable

Delay, expressed as a percentage.

Success

This Metric measures the proportion of network transactions that were above the `classTotalDelayThreshold` defined in the Packeteer-RTM-MIB. Thus the table entries show the percentage of total transactions, for a given Class, which were "successful" in this sense.

TCP Operations

For the Class established in the *Class Full Name Pp* Property of the Vista **PacketShaper Class**:

- *Inits* are TCP operations that are initiated.

- *Denies* are TCP flows denied by CIR fail.

- *Aborts* are TCP flows that are aborted (and exit).

- *Refuses* are TCP flows that are refused (and exit).

- *Ignores* are TCP flows that are ignored (and exit).

- *Successes* are TCP flows that correctly initiated and terminated.

Calendars

The Indicators in the reports all use the **Always** calendar. This is an InfoVista system calendar and is non-modifiable. It is active 24 hours per day and 365 days per year. Thus all Indicators give a true picture of round-the-clock resource usage.

2 The Reports

This chapter is divided into sections that correspond to each Report Template. A Report section includes: an overview of the Report features, a graphical representation of the Report, a detailed description of the Report, including what Variables are measured and how they are measured.

Table of Report Templates

The **InfoVista Traffic Shaping - Packeteer** Library contains the following report templates:

Report template	Type	Usage	What is measured	Monitored resource
tsp - Application Summary Report	Real time Hourly, Daily, Weekly	Detailed analysis of Application, Performance monitoring	Delay: Net, Server, To tal; Hits: Class, Policy; Pkts Count; Volume; Transaction Total; Success Ratio.	PacketShaper
tsp - Network Performance Overview	Real time Hourly, Daily, Weekly	Troubleshooting Performance monitoring Capacity planning Short term trending	Current Rate; Efficiency; Top 10 Classes; Current Rate	PacketShaper
tsp - PacketShaper Overview Report	Real time Hourly, Daily, Weekly	Performance monitoring; Troubleshooting; Trending	Delay: Total Average, Total Bottom5; Transactions: Total Sum, Total Top5; Reachability	PacketShaper
tsp - PacketShaper Performance Report	Real time Hourly, Daily	Trouble shooting Performance monitoring Capacity planning Short term trending	Link: Size, KByte Count, Rate, Pkts Count, DataPkts Count; Top 10 Application Total Delay over Baseline; Top 10 Application Traffic	PacketShaper

Report template	Type	Usage	What is measured	Monitored resource
tsp - Application Transaction Overview Report	Real time Hourly, Daily, Weekly	Overall analysis of Application, Performance monitoring, Short-term Trending	Efficiency: Network, Transaction; Total Delay Variation; TCP Operations, Total Transactions; Bandwidth Utilization	PacketShaper Application
tsp - Class Transaction Overview Report	Real time Hourly, Daily, Weekly	Overall analysis of Class, Performance monitoring, Short-term Trending	Efficiency: Network, Transactions; Transaction Delay Variation; TCP Operations; Total Transactions; Bandwidth Utilization	PacketShaper Class
tsp - PacketShaper Group Application Top	Hourly, Daily, Weekly, Monthly	Group overview Capacity planning Short term trending Long term trending	Top 5: Volume, Total Delay; Bottom 5: Volume, Total Delay	PacketShaper Group
tsp - PacketShaper Group Overview	Real time Hourly, Daily, Weekly, Monthly	Group overview Capacity planning Short term trending Long term trending	Average: Volume, Total Delay, Total Transaction; Top 10: Volume, Total Delay, Total Transaction	PacketShaper Group
*tsp - PacketShaper Group Summary	Hourly, Daily, Weekly, Monthly	Detailed analysis of group Performance monitoring	Delay: Server, Net, Total; Hits: Class, Policy; Pkts Count; Transaction Total; Volume	Multiple PacketShaper Group

Report template	Type	Usage	What is measured	Monitored resource
tsp - Application Group Overview	Hourly, Daily, Weekly, Monthly	Group overview Capacity planning Short term trending Long term trending	Average: Total Transaction, Bandwidth Utilization Sum, Network Efficiency; Top 10: Total Transactions, Bandwidth Utilization, Network Efficiency	PacketShaper Application Group
*tsp - Application Group Summary	Hourly, Daily, Weekly, Monthly	Detailed analysis of group, Performance monitoring	Total Delay; Bandwidth Utilization; Total Transactions; Trans Efficiency; Network Efficiency; TCP: Inits, Aborts, Denies, Ignores, Refuses	Multiple PacketShaper Application Groups
tsp - Transaction Overview Report by Name	Real time Hourly, Daily, Weekly, Monthly	Classes overview Capacity planning Short term trending Long term trending	Network Efficiency, Transaction Success Ratio, Total Delay Variation, TCP Operations, Total Transactions, Bandwidth Utilization	PacketShaper Class Group

Application Summary Report

What can it do?

Monitored resource	A single PacketShaper device
Usage	Detailed analysis of Application, Performance monitoring
What is measured	Delay: Net, Server, To tal; Hits: Class, Policy; Pkts Count; Volume; Transaction Total; Success Ratio
Technology	MIB2 ,PACKETEER-MIB, PACKETEER-RTM-MIB

Type of report	Real Time	Hourly	Daily	Weekly
Lifetime	1 week	2 weeks	3 months	6 months
Audience	Troubleshooters	Network analysts		Executive officers

The Table

Class Name

This is the name of the Class. For example, .*/HTTP.

Net Delay (ms)

This column gives the average Network Delay, in milliseconds, for the Class, over the display period.

Server Delay (ms)

This column gives the average Server Delay, in milliseconds, for the Class, over the display period.

Total Delay (ms)

This column gives average Delay for the Class, over the display period.

Class Hits

This column gives the total number of Transactions, over the display period, for the Class.

Policy Hits

This column gives the total number of Transactions that correspond to the Policy settings on the PacketShaper device, for a specified Class, over the display period.

Pkts Count

This column gives the total number of Packets counted for the Class.

Volume (KBytes)

This column gives the total amount of traffic for the Class over the display period, expressed in KiloBytes.

Transaction Total

This column gives the total number of transactions for the Class over the display period.
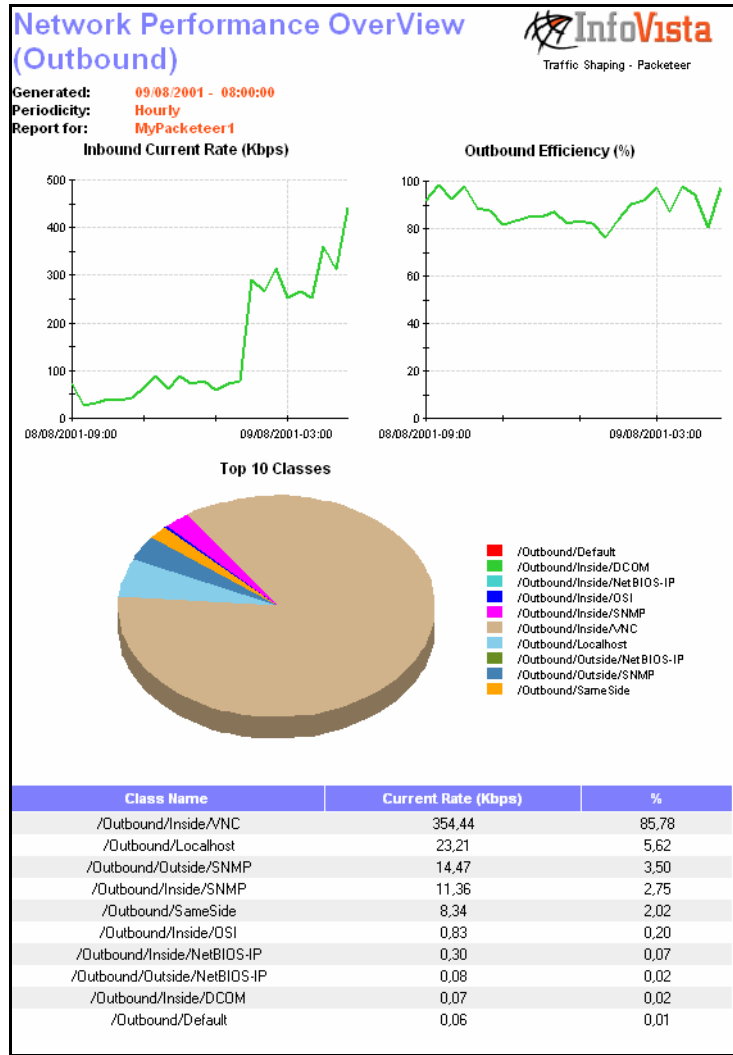
Success Ratio (%)

This column shows the percentage of Class Transactions which were successful - ie. came in below the Delay threshold set out in the Packeteer-RTM-MIB.

Network Performance Overview

NOTE:

This Report exists in two versions, for *Inbound* traffic and for *Outbound* traffic, across the PacketShaper device. The Metrics are the same.

What can it do?

Monitored resource	A single PacketShaper device
Usage	Troubleshooting, Performance monitoring, Capacity planning, Short term trending
What is measured	Current Rate; Efficiency; Top 10 Classes; Current Rate %
Technology	MIB2 ,PACKETEER-MIB, PACKETEER-RTM-MIB

Type of report	Real Time	Hourly	Daily	Weekly
Lifetime	1 week	2 weeks	3 months	6 months
Audience	Troubleshooters	Network analysts		Executive officers

The Graphs and Table

Current Rate (Kbps)

This Graph displays the speed of inbound or outbound traffic across the PacketShaper.

Efficiency (%)

This Graph displays the percentage of inbound or outbound traffic that was registered below the Delay threshold established in the Packeteer-RTM-MIB.

Top 10 Classes

The pie chart shows the relative bandwidth occupation for each of the Classes that account for the most bandwidth utilization. It is expressed as a percentage showing the ratio between current rate per Class and total current rate.

The Table below the pie chart shows the actual figures for the pie chart. For each of the Top 10 Classes, the Current Rate is given in Kilobits per second, as well as in percentage bandwidth occupation.

PacketShaper Overview Report
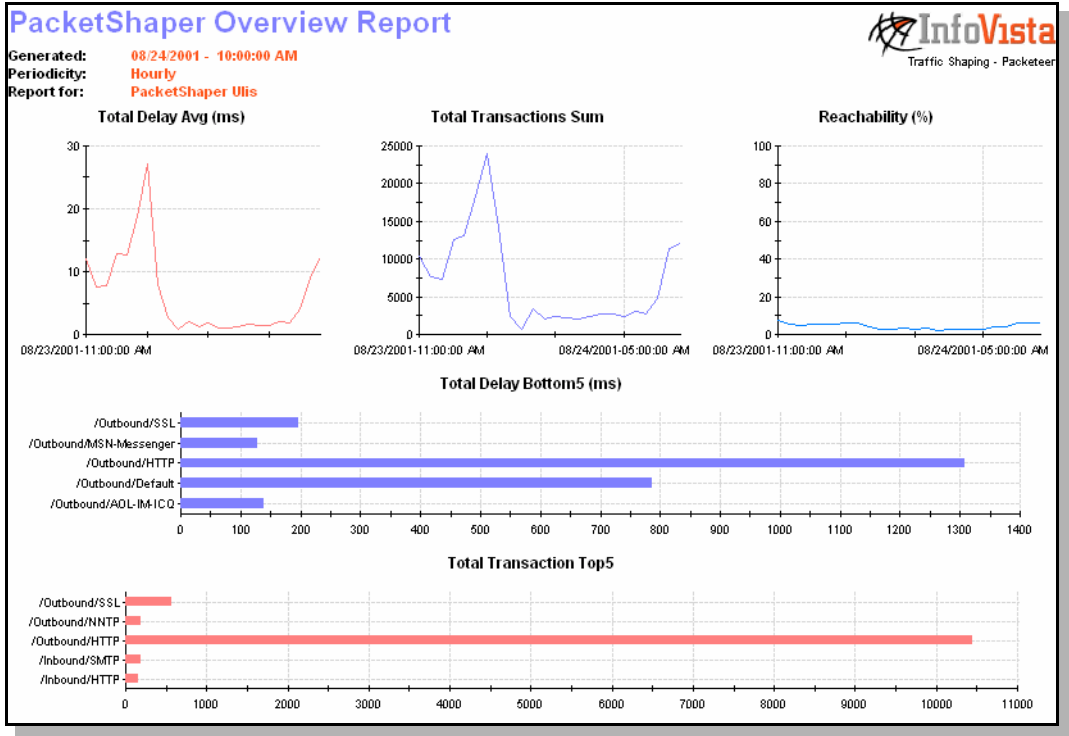
What can it do?

Monitored resource	A single PacketShaper device
Usage	Performance monitoring, Troubleshooting, Trending
What is measured	Delay: Total Average, Total Bottom5; Transactions: Total Sum, Total Top5; Reachability
Technology	MIB2 ,PACKETEER-MIB, PACKETEER-RTM-MIB

Type of report	Real Time	Hourly	Daily	Weekly
Lifetime	1 week	2 weeks	3 months	6 months
Audience	Troubleshooters	Network analysts		Executive officers

The Graphs

Total Delay Avg (ms)

This Graph shows the average Delay, from all sources, for all Classes.

Total Transactions Sum

This Graph shows the total number of Transactions over the PacketShaper during the Display period.

Reachability (%)

This Graph shows the percentage of Class transactions over the PacketShaper which have acceptable Delay. This is set relative to the `classTransactionsAboveTotalDelayThreshold` threshold in the Packeteer-RTM-MIB.
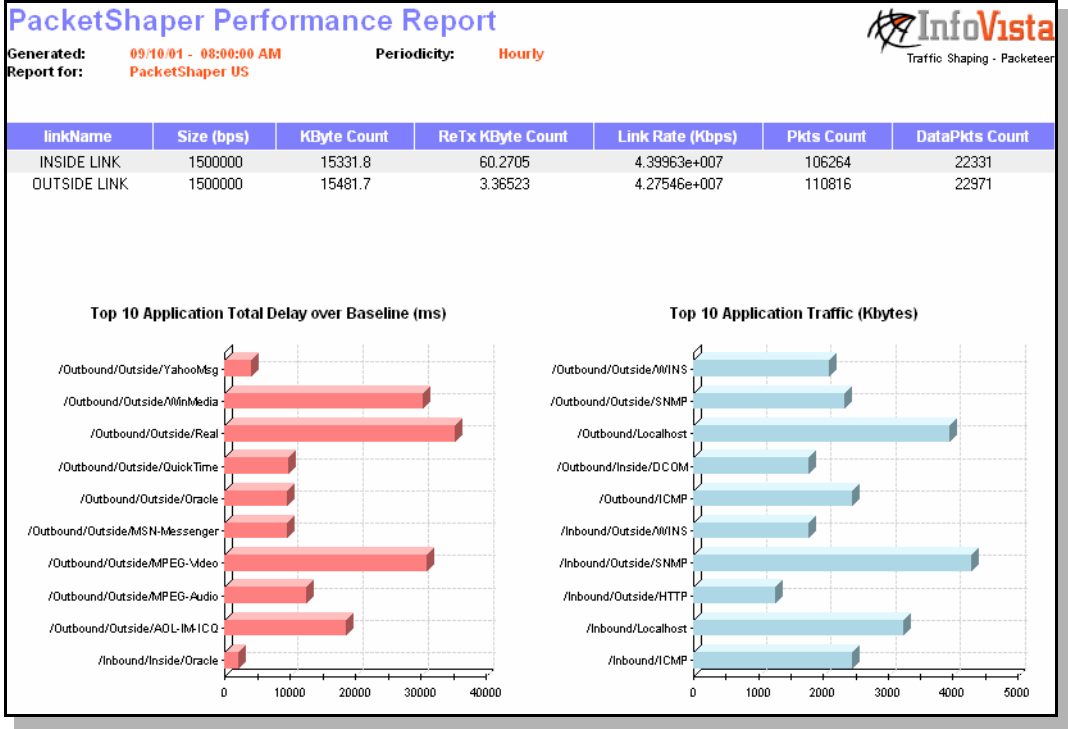
Total Delay Bottom 5 (ms)

This Graph shows the five worst-performing Classes for the display period, expressed as Delay for that Class in milliseconds.

Total Transaction Top 5

This Graph shows the five Classes which account for the largest amount of Transactions over the display period.

PacketShaper Performance Report

What can it do?

Monitored resource	A single PacketShaper device
Usage	Trouble shooting, Performance monitoring, Capacity planning, Short term trending
What is measured	Link: Size, KByte Count, Rate, Pkts Count, DataPkts Count, Top 10: Application Total Delay/Baseline, Application Traffic
Technology	MIB2 ,PACKETEER-MIB, PACKETEER-RTM-MIB

Type of report	Hourly	Daily	Weekly	Monthly
Lifetime	1 month	3 months	1 year	3 years
Audience	Network analysts		Executive officers	

The Table and Graphs

linkName

This column gives the name that is specified for the link.

Size (bps)

This column gives the size of each link, expressed in bits per second.

KByte Count

This column gives the traffic volume on the link over the display period, expressed in KiloBytes.

ReTx KByte Count

This column gives the amount of retransmitted traffic on the link, expressed in KiloBytes.

Link Rate (Kbps)

This column gives the peak speed of the link over the display period, expressed in Kilobits per second.

Pkts Count

This column gives the number of packets counted on the link over the display period.

DataPkts Count

This column gives the number of TCP data packets transmitted over the link during the display period.

### Top 10 Application Total Delay over Baseline (ms)

This Graph shows the applications which experienced the greatest delays over the display period. The applications that are shown are those which are over a baseline threshold established for the preceeding 7 days.

Top 10 Application Traffic (KBytes)

This Graph shows the applications which accounted for the most traffic over the display period, expressed in KiloBytes.

Application Transaction Overview Report
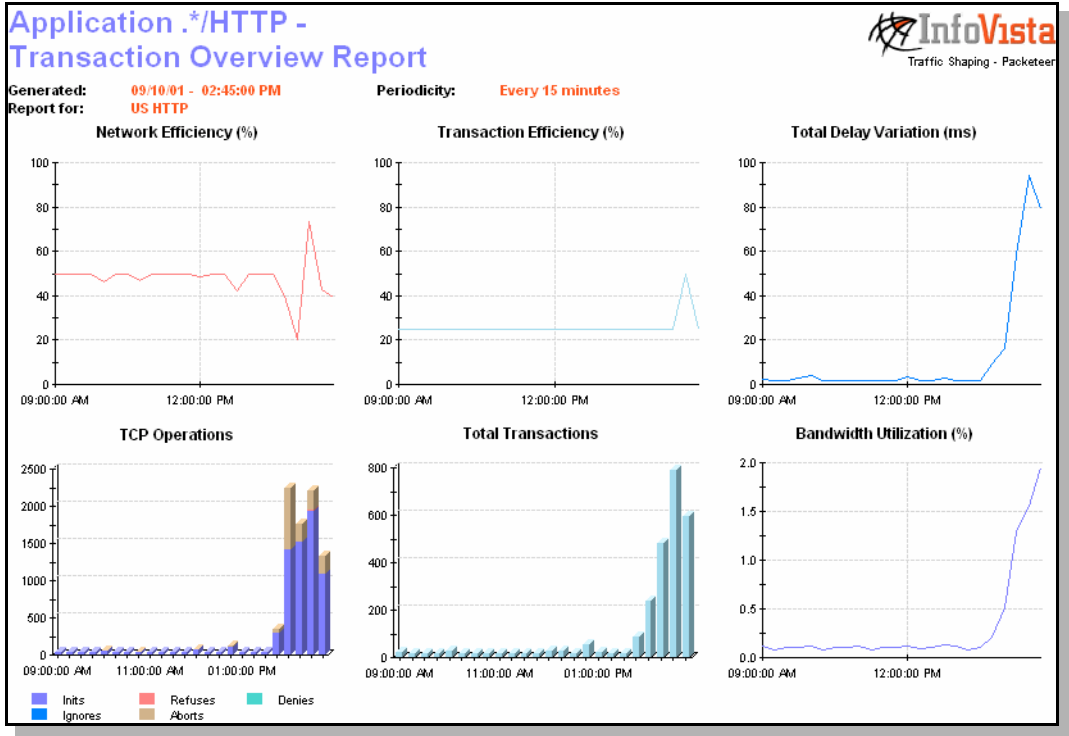
What can it do?

Monitored resource	A PacketShaper Application
Usage	Overall analysis of Application, Performance monitoring, Short-term Trending
What is measured	Efficiency: Network, Transaction; Total Delay Variation; TCP Operations, Total Transactions; Bandwidth Utilization
Technology	MIB2 ,PACKETEER-MIB, PACKETEER-RTM-MIB

Type of report	Real Time	Hourly	Daily	Weekly
Lifetime	1 week	2 weeks	3 months	6 months
Audience	Troubleshooters	Network analysts		Executive officers

The Graphs

Network Efficiency (%)

This Graph gives the ratio between dropped and sent TCP packets for the Application, expressed as a percentage.

Transaction Efficiency (%)

This Graph gives the percentage of transactions which which were "successful" in that they were above the `classTransactionsAboveTotalDelayThreshold` limit, defined in the Packeteer-RTM-MIB.

Total Delay Variation (ms)

This Graph shows fluctuations in total delay for the Application, over the display period.

TCP Operations

This Graph shows the relative quantities of TCP Operations over the display period. The five operation types are described on page 12.
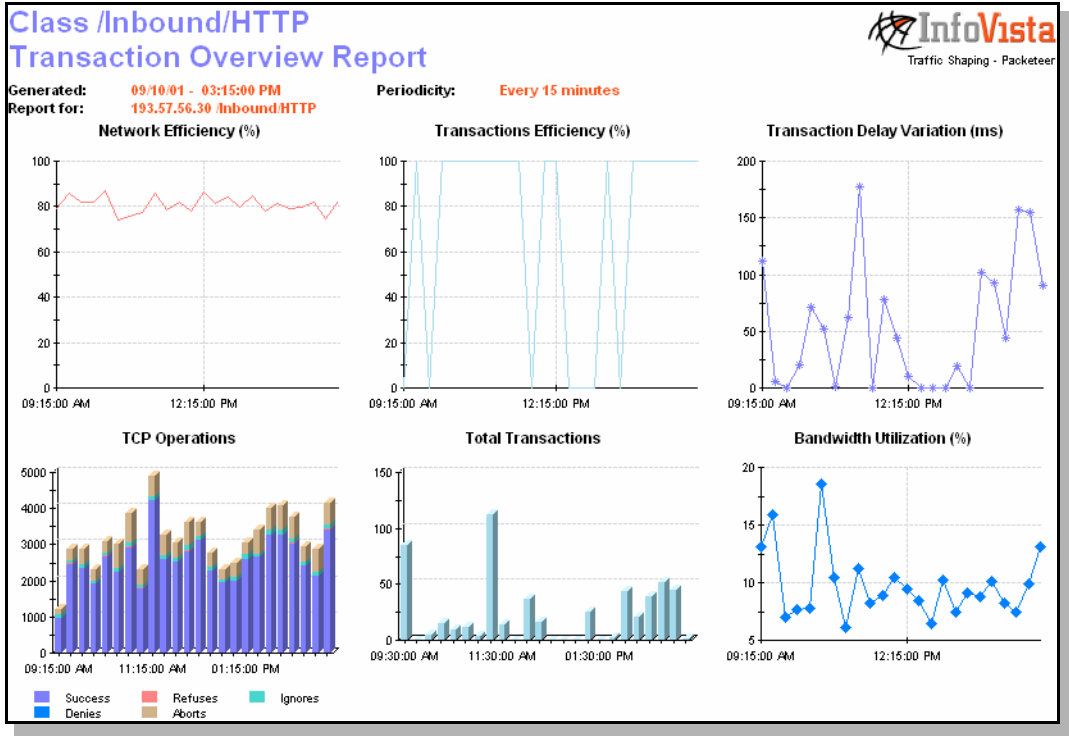
Total Transactions

This Graph shows the total number of Transactions for the Application over the display period.

Bandwidth Utilization (%)

This Graph shows the percentage of total bandwidth used by the Application over the display period.

Class Transaction Overview Report

What can it do?

Monitored resource	A PacketShaper Class
Usage	Overall analysis of Class, Performance monitoring, Short-term Trending
What is measured	Efficiency: Network, Transactions; Transaction Delay Variation; TCP Operations; Total Transactions; Bandwidth Utilization
Technology	MIB2 ,PACKETEER-MIB, PACKETEER-RTM-MIB

Type of report	Real Time	Hourly	Daily	Weekly
Lifetime	1 week	2 weeks	3 months	6 months
Audience	Troubleshooters	Network analysts		Executive officers

The Graphs

Network Efficiency (%)

This Graph gives the ratio between dropped and sent TCP packets for the Application, expressed as a percentage.

Transactions Efficiency (%)

This Graph gives the percentage of transactions which which were "successful" in that they were above the `classTransactionsAboveTotalDelayThreshold` limit, defined in the Packeteer-RTM-MIB.

Transaction Delay Variation (ms)

This Graph shows fluctuations in total delay on Class transactions over the display period.

TCP Operations

This Graph shows the relative quantities of TCP Operations for the Class over the display period. The five operation types are described on .

Total Transactions

This Graph shows the total number of Transactions for the Class over the display period.

Bandwidth Utilization (%)

This Graph gives the percentage of total bandwidth consumption for the Class over the display period.

PacketShaper Group Application

What can it do?

Monitored resource	A Group of PacketShaper Applications
Usage	Group overview, Capacity planning, Short term trending, Long term trending
What is measured	Top 5: Volume, Total Delay; Bottom 5: Volume, Total Delay
Technology	MIB2 ,PACKETEER-MIB, PACKETEER-RTM-MIB

Type of report	Hourly	Daily	Weekly	Monthly
Lifetime	1 month	1 month	1 year	3 years
Audience	Network analysts		Executive officers	

The Graphs

Top 5 Volume

This Graph shows the five Applications which account for the largest quantity of packets on a PacketShaper in the Group over the display period.

Bottom 5 Volume

This Graph shows the five Applications which account for the smallest quantity of packets on a PacketShaper in the Group over the display period.

Top 5 Total Delay

This Graph shows the five Applications subject to the lowest delay on a PacketShaper in the Group over the display period.

Bottom 5 Total Delay

This Graph shows the five Applications subject to the highest delay on a PacketShaper in the Group over the display period.

PacketShaper Group Overview
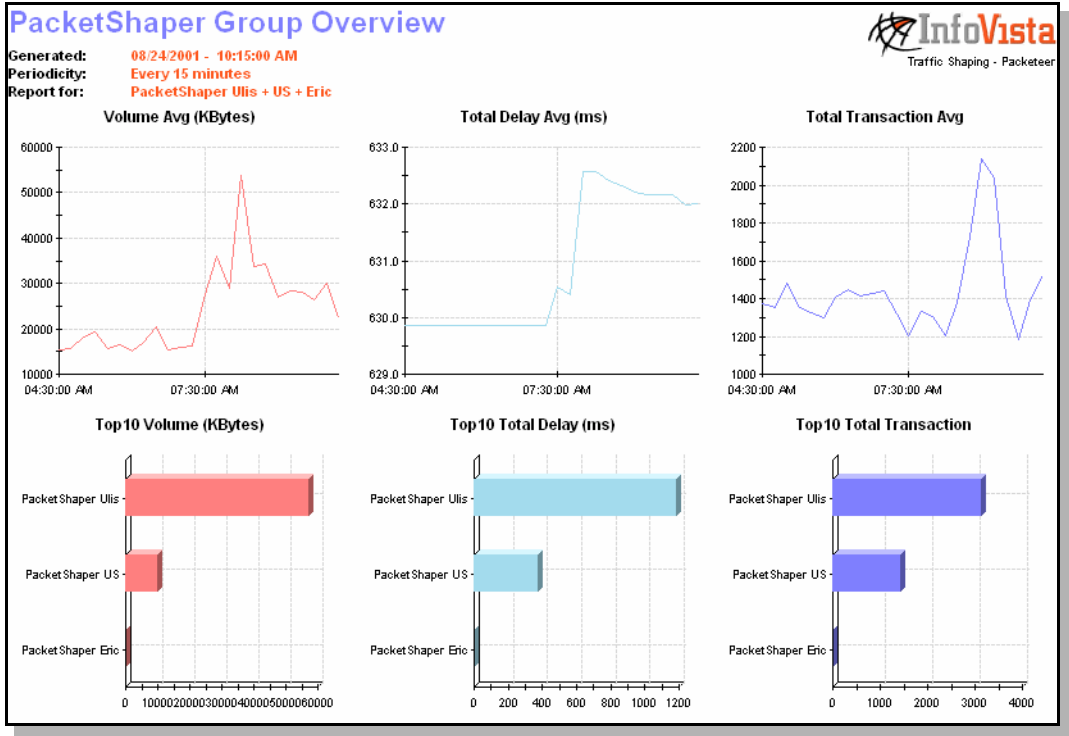
What can it do?

Monitored resource	A Group of PacketShaper devices
Usage	Group overview, Capacity planning, Short term trending, Long term trending
What is measured	Average: Volume, Total Delay, Total Transaction; Top 10: Volume, Total Delay, Total Transaction
Technology	MIB2 ,PACKETEER-MIB, PACKETEER-RTM-MIB

Type of report	Real time	Hourly	Daily	Weekly	Monthly
Lifetime	1 day	1 month	1 month	1 year	3 years
Audience	Troubleshooters	Network analysts		Executive officers	

The Graphs

Volume Avg (KBytes)

This Graph shows the average quantity of traffic for the Group over the display period, expressed in KiloBytes.

Total Delay Avg (ms)

This Graph shows the average delay on traffic for the Group over the display period.

Total Transaction Avg

This Graph shows the average number of Transactions for the Group over the display period.

Top 10 Volume (KBytes)

This Graph shows the PacketShaper devices in the Group which account for the greatest quantity of traffic. The amount of traffic for each PacketShaper is given in KiloBytes.

Top 10 Total Delay (ms)

This Graph shows the PacketShaper devices in the Group which were subject to the longest delays over the display period. The total delay for each PacketShaper is given in milliseconds.

Top 10 Total Transaction

This Graph shows the PacketShaper devices in the Group which accounted for the greatest number of Transactions. The number of Transactions is shown for each PacketShaper.

PacketShaper Group Summary

What can it do?

Monitored resource	Multiple PacketShaper Groups
Usage	Detailed analysis of group, Performance monitoring
What is measured	Delay: Server, Net, Total; Hits: Class, Policy; Pkts Count; Transaction Total; Volume
Technology	MIB2 ,PACKETEER-MIB, PACKETEER-RTM-MIB

Type of report	Hourly	Daily	Weekly	Monthly
Lifetime	1 month	3 months	1 year	3 years
Audience	Network analysts		Executive officers	

The Table

For each **PacketShaper** in the Group(s), and for each **Class Name**, the following metrics are given.

Server Delay (ms)

This column shows average delay on the server over the display period.

Net Delay (ms)

This column shows average delay on the network over the display period.

Total Delay (ms)

This column shows average total delay over the display period.

Class Hits

This column shows the number of hits for the PacketShaper/Class over the display period.

Policy Hits

This column shows the number of hits for Policies that are defined on the PacketShaper devices in the Group(s), over the display period.

Pkts Count

This column shows the number of packets corresponding to the PacketShaper/Class over the display period.

Transaction Total

This column shows the total number of transactions over the display period.

Volume (KBytes)

This column shows the amount of traffic over the display period, expressed in KiloBytes.

Application Group Overview
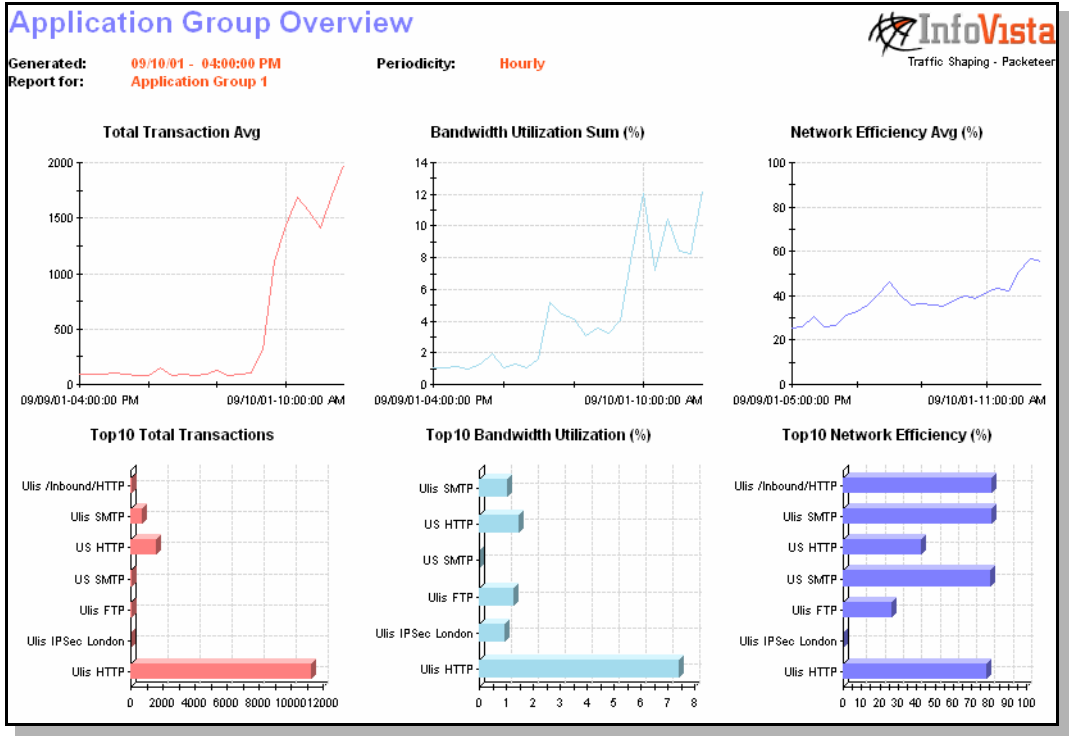
What can it do?

Monitored resource	A Group of PacketShaper Applications
Usage	Group overview, Capacity planning, Short term trending, Long term trending
What is measured	Average: Total Transaction, Bandwidth Utilization, Network Efficiency; Top 10: Total Transactions, Bandwidth Utilization, Network Efficiency
Technology	MIB2 ,PACKETEER-MIB, PACKETEER-RTM-MIB

Type of report	Hourly	Daily	Weekly	Monthly
Lifetime	1 month	1 month	1 year	3 years
Audience	Network analysts		Executive officers	

VistaView for Traffic Shaping - Packeteer

The Graphs

Total Transaction Avg

This Graph shows the average number of Transactions for all the Applications in the Group over the display period.

Bandwidth Utilization Sum (%)

This Graph shows the percentage of total bandwidth utilization for the Applications over the display period.

Network Efficiency Avg (%)

This Graph shows the average ratio of sent/dropped TCP packets for the Applications over the display period, expressed as a percentage.

Top 10 Total Transactions

This Graph shows the PacketShaper/Application pairs which accounted for the greatest number of transactions over the display period. The number of transactions is shown for each pair.

Top 10 Bandwidth Utilization (%)

This Graph shows the PacketShaper/Application pairs which consumed the most bandwidth over the display period. The percentage of bandwidth utilization for each pair is given in bits per second.

Top 10 Network Efficiency (%)

This Graph shows the PacketShaper/Application pairs which had the lowest ratio of sent/dropped packets over the display period. This ratio is given as a percentage for each pair.

Application Group Summary

InfoVista

Traffic Shaping - Packeteer

Generated:	09/10/01 - 02:00:00 PM				
Periodicity:	Hourly				
Report for:	Application Group 1				

PacketShaper Application	Total Delay (ms)	Bandwidth Utilization (%)	Total Transaction	Trans Efficiency (%)	Net Efficiency (%)
US HTTP	62.1219	1.32779	2105	50	67.729
US SMTP	0.0226012	0.0338835	22	25	18.9189
Ulis /Inbound/HTTP	112.233		154	100	80.3188
Ulis FTP	35.5765	0.0690167	23	66.6667	21.5804
Ulis HTTP	617.323	5.28761	9011	100	77.6388
Ulis IPSec London	0	0.305555	0	0	0
Ulis SMTP	120.968	1.21328	688	100	90.63

TCP Summary

PacketShaper Application	Tcp Inits	Tcp Aborts	Tcp Denies	Tcp Ignores	Tcp Refuses
US HTTP	5940	1562	0	2	26
US SMTP	74	46	0	0	0
Ulis /Inbound/HTTP	13927	2245	0	416	80
Ulis FTP	139	88	0	2	4
Ulis HTTP	24873	4490	0	832	160
Ulis IPSec London	0	0	0	0	0
Ulis SMTP	619	44	0	8	6

What can it do?

Monitored resource	Multiple Groups of PacketShaper Applications
Usage	Detailed analysis of group, Performance monitoring
What is measured	Total Delay; Bandwidth Utilization; Total Transactions; Trans Efficiency; Network Efficiency; TCP: Inits, Aborts, Denies, Ignores, Refuses
Technology	MIB2 ,PACKETEER-MIB, PACKETEER-RTM-MIB

Type of report	Hourly	Daily	Weekly	Monthly
Lifetime	1 month	1 month	1 year	3 years
Audience	Network analysts		Executive officers	

The Tables

For each **PacketShaper Application** in the Group(s), the following metrics are given:

Total Delay (ms)

This column shows the sum of all delays over the display period, expressed in milliseconds.

Bandwidth Utilization (%)

This column shows average percentage of total bandwidth consumption over the display period.

Total Transactions

This column shows the total number of Transactions over the display period.

Trans Efficiency (%)

This column shows the percentage of Transactions that were above the delay threshold parameter `classTransactionsAboveTotalDelayThreshold`.

Network Efficiency (%)

This column shows the percentage of TCP packets that were successfully sent and received (not dropped), over the display period.

TCP Summary

This table shows the number of packets for each TCP Operation (Inits, Aborts, Denies, Ignores, Refuses) over the display period. The TCP Operations are described on .

Transaction Overview Report by Name
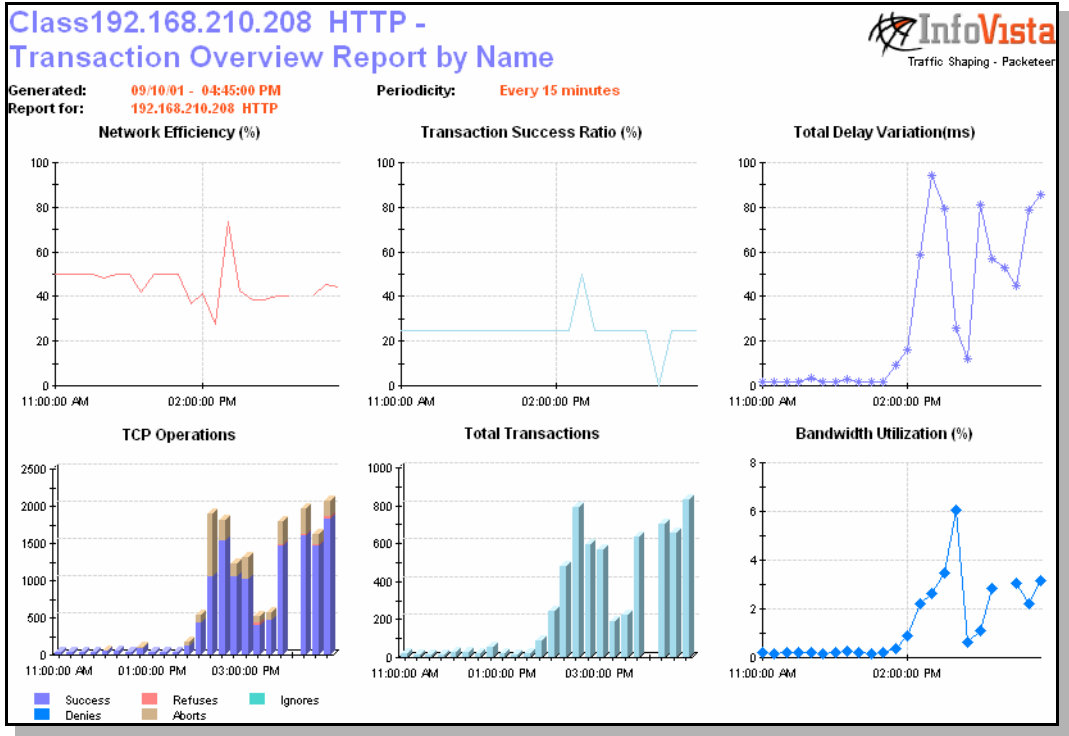
What can it do?

Monitored resource	A Group of PacketShaper Classes
Usage	Classes overview, Capacity planning, Short term trending, Long term trending
What is measured	Network Efficiency, Transaction Success Ratio, Total Delay Variation, TCP Operations, Total Transactions, Bandwidth Utilization
Technology	MIB2 ,PACKETEER-MIB, PACKETEER-RTM-MIB

Type of report	Real time	Hourly	Daily	Weekly	Monthly
Lifetime	1 day	1 month	1 month	1 year	3 years
Audience	Troubleshooters	Network analysts		Executive officers	

The Graphs

For each Application, the following metrics are provided:

Network Efficiency (%)

This Graph shows the percentage of TCP packets that were successfully sent and received (not dropped), over the display period.

Transaction Success Ratio (%)

This Graph shows the percentage of Transactions that were above the threshold limit `classTotalDelayThreshold`.

Total Delay Variation (ms)

This Graph shows fluctuations in total delay, averaged for the Group.

TCP Operations

This Graph shows the number of TCP Operations. See page 12 for more information on the TCP Operations.

Total Transactions

This Graph shows the total number of Transactions over the display period.

Bandwidth Utilization (%)

This Graph shows the percentage of total bandwidth that is utilized by the Class.

3 Manipulating InfoVista Reports

This chapter gives some useful information on how to get the most out of
your InfoVista reports.

Reports

Creating reports

Some Report Templates may take a single Instance representing a single resource, for example: **PacketShaper**. These reports will accept only a single Instance of this Vista.

These *single resource* reports (for example *Network Performance*) show Indicators for a single Instance, for example: Load, Errors, etc.

Certain Report Templates accept a single Instance representing a group of resources, for example: **PacketShaper Group**. These Reports will only accept a single Instance of the named Vista.

These *Group* reports (typically the Overview reports) show Indicator values which are typically aggregated over the whole group, for example: Average Delay, Top 10 Transactions, etc.

Other Reports may accept multiple Instances, each one representing a single resource, for example **PacketShaper*** (the asterisk in the GUI shows that the Report will accept multiple Instances).

These *multiple resource* Reports (typically Summary Reports) show Indicator values for several Instances, generally in the form of a table. You can use multiple Instances of Groups or just a single Group.

Opening reports

To open a report, simply double click on the report name. You can do this from many different places in the GUI (in the object tree of the main window, in the *Instant Report* dialog box, etc.).

The Report is opened in the **Report Viewer** window.

Data refresh

When you create a Report, the InfoVista server immediately starts collecting data and calculating Indicators. This occurs whether the Report is open or not.

When you open a Report, the server displays on it the latest data available.

But, by default, it does not refresh the report with any further data which it calculates. To enable periodical refresh of the displayed data, execute command **View**/**Refresh** in the report viewer window.

This advice is particularly useful the first time you create a Report. Initially there is no data to display, so the Report is blank. This is normal at the start of the Report. However, if you forget to enable periodical refresh, it can be very frustrating waiting for data to appear on the report.

Shortcut for periodical refresh:

Click on the button at the top of the report viewer.

Displaying historical data

Data for a report is stored for a period of time defined by the Life time of the report. Generally, not all of this data is displayed at the same time on the report.

To see data in the past, either:

- click on the reference time arrow heads,
- or drag the slider to the left,
- or edit the reference time and press enter at the keyboard.

This feature is particularly useful for tables which show a snap shot view of resources at a given point in time.

Note that this operation inhibits periodical refresh on the report. Select command **Report**/**Periodical Refresh**/**Start** to enable it again.

Drill Downs

Most standard reports feature *Drill Downs.* Drill downs are pre-established links to other reports, like hyperlinks. Use the Drill Down feature to quickly access and view related reports, track problems, or monitor trends in network behavior.

Drill Downs are typically provided from group reports to reports on

individual resources or from long display rates to short display rate of the same type of report.
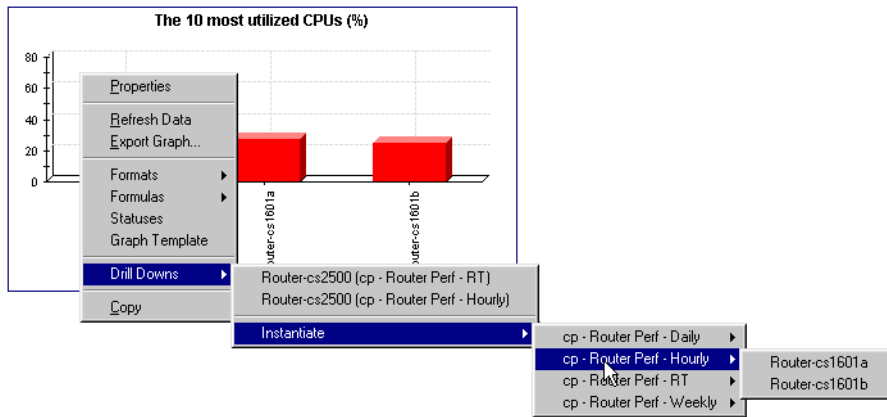
To activate a drill down:

1. In a report, right-click on the report.

2. In the contextual menu, select **Drill Downs** to view the list of Drill Down reports.
   Drill Down reports that are already created are listed. Click on a report name to open it.
   Drill Down reports that are not yet created are listed under the command **Instantiate**.

3. Select **Instantiate** to list the Report Templates which are available.

4. Select one of the Report Templates to list the Instances which can be used to create a report.

5. Click on one of the Instances to create the report.

NOTE:
Next time you use the command **Drill Downs**, the new report you just created will be included in the list of drill down reports.

Drill down origins

Different drill downs are associated with different parts of the report. Three major areas of the report are concerned.

Drill downs from Indicators

Right-click on a table cell or a data point on a graph to activate drill downs for a specific Indicator and possibly for a specific Instance.

Drill downs from Graphs

Right-click on a graph (but not on a specific Indicator or table cell) to activate drill downs associated with the graph.

Drill downs from Reports

Right-click on a report, outside of any graph, to list drill downs associated globally with the whole report.

See also: Box

The **See also:** box lists drill down reports associated globally with the report, and not with a specific graph. The box is only displayed on reports if one or more global drill down reports have been created (use command **View/ Refresh** to update this display if you have just created a drill down report).

See also list box

```
See also:                          ▼
```

To activate a drill down from this box, click on the arrow button and select a report in the list.

Using Graphs

Top/Bottom N Graphs

Top N and **Bottom N** graphs show the n elements in a Group of resources which have the highest or lowest values of a given Indicator. The Graphs are useful because they show the worst "offenders" in a group.

Generally the same resources will always be in the Top N (or Bottom N). These are the resources which habitually process large data volumes. The sudden appearance or disappearance of a resource from the Top 10 graphs should be noted as this may indicate an immediate problem or or general trend towards a future problem.

Summary Tables

Summary tables show data for a number of Indicators in different columns. They typically show different Instances in different rows of the table. They are useful because they show a comparison of the resources in a group.

PacketShaper Application	Total Delay (ms)	Traffic Throughput (bps)	Total Transaction
US HTTP	3.65793	0.00122012	140
US SMTP	0.00119538	3.02844e-006	2
Ulis FTP	16.6813	0.0452803	29
Ulis HTTP	807.664	0.0617025	10261
Ulis IPSec London	0	0.00299611	0
Ulis SMTP	54.1447	0.0050901	246

Click successively on any column header to sort the table by increasing or decreasing values. In this way you can display the top resources or bottom resources with problems.

Remarks form

VistaView for Traffic Shaping - Packeteer	September, 2001

We welcome any comments you may have on our product and its documentation. Your remarks will be examined thoroughly and taken into account for future versions of InfoVista.

Errors detected:

Suggested improvements:

Please send this completed form to:

> **InfoVista SA**
> 6 rue de la Terre de Feu
> 91952 Courtaboeuf cedex
> France

If you prefer, you may send your remarks via E-mail to **support@infovista.com**

If you want InfoVista to reply to your comments, please include your name, address and telephone number.

Thank you for your cooperation.