HP OpenView Performance Insight

Report Pack for Internet Services
User Guide

Software Version: 1.0

Reporting and Network Solutions

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Overview

This chapter covers the following topics:

- OVPI and HP OpenView Internet Services (OVIS)
- Time periods, terms, and statistics defined
- Integration with Network Node Manager (NNM)
- Ways to customize reports
- Sources for additional information

OVPI and Internet Service Reporting

The Internet Services Report Pack 1.0 provides detailed information about services that are critical to a successful business. It enables enterprises and service providers to monitor their services, spot problem areas, and predict what performance will be like in the future.

Working together, the Internet Services Report Pack and the Internet Services Report Pack Datapipe collect, aggregate, and analyze data maintained by OVIS Management Servers. In terms of features and benefits, this is what the user can expect:

- Centralized reporting
- Centralized OVIS data warehousing
- Performance baselining
- Performance forecasting
- Cross-domain reporting using data from other OVPI reporting solutions

Internet Services 1.0 offers the following perspectives on availability, response time, throughput, and service level violations:

- Analysis of performance by day, with day-to-day comparisons
- Analysis of performance by month, with month-to-month comparisons
- Analysis of performance per 30-day rolling baseline

In addition to examining performance by day, month, and rolling baseline, Internet Services 1.0 extrapolates recent trends and projects past performance for response time, throughput, and service level violations 30, 60, and 90 days into the future.

Folders and Reports

Internet Service 1.0 includes twenty interactive reports. Reports are contained in the following folders:

- Detail
- Hot Spots
- Forecasts
- Summary

The **detail folder** contains the following probe and service reports:

- Daily Probe Type Detail
- Monthly Probe Type Detail
- 30 Day Probe Type Detail
- Daily Service Detail
- Monthly Service Detail
- 30 Day Service Detail

The **hot spots folder** contains the following probe and service reports:

- Daily Probe Type Hot Spots
- Monthly Probe Type Hot Spots
- 30 Day Probe Type Hot Spots
- Daily Services Hot Spots
- Monthly Services Hot Spots
- 30 Day Services Hot Spots

The **forecast folder** contains the following probe and service reports:

- Probe Type Forecast
- Service Forecast

The **summary folder** contains the following probe and service reports:

- Daily Probe Type Summary
- Monthly Probe Type Summary
- 30 Day Probe Type Summary
- Daily Service Summary
- Monthly Service Summary
- 30 Day Service Summary

Time Periods Defined

Aside from the forecast reports, every report in this package fits into one of these molds:

- Daily

- Monthly
- 30 day

The daily report begins with statistics for yesterday and allows you to compare yesterday's statistics to performance over the preceding 30 days. The tables at the top of the report look at data for the selected day, while the graphs below let you see a full 30 days of data.

The monthly report lets you see what the trend has been for the past 12 months. This report provides:

- An aggregation for month-to-date (the beginning of the current month until yesterday)
- An aggregation for previous calendar months, up to a maximum of 12 months

The 30 day report aggregates data for the preceding 30 days. The tables at the top look at totals and averages for a rolling 30 day baseline, while the graphs below provide data for each day within the rolling 30 day baseline.

Terms Defined

Term	Definition
Customer	The customer as defined in the OVIS Server; the name of the customer for whom services are being monitored.
OVIS test	One execution of a simulated service from one probe system to one target.
Probe System	Also referred to as a probe. The system that contains software that initiates the simulated service, measures the results, and sends the results back to the OVIS server.
Probe Type	Also referred to as Service Type or just Service in the OVIS system. A simulated network business activity such as HTTP, FTP, DNS, etc.
Service	Also referred to as Service Group in the OVIS system. A grouping of measurements of a single service or probe type that have common service level objectives.
Service level violation	The number of tests that exceeded a threshold as defined by the OVIS system user.
Target	The target of the simulated service. This could be a URL, a DNS server, a FTP server, etc.

Statistics Defined

Statistic	Definition
Availability	The percentage of tests that were successful; serves as an estimate of service availability.
Response time	The response time measured by probe systems for successful OVIS tests. The response time shown in Daily reports, and in the graphs of 30 Day reports, is the highest (worst) hourly average for each day. The response time displayed in Monthly reports, and in the selection tables of 30 Day reports, is the average of the highest hourly average for each day. The graphs in Monthly reports also show the maximum of the daily highest hourly averages during the month.
Service Level Violations	A count of the number tests that exceeded the service level objectives specified in the OVIS system.
Throughput	The throughput measured by probe systems for successful OVIS tests. The throughput displayed in Daily reports, and in the graphs of 30 Day reports, is the lowest (worst) hourly average for each day. The throughput displayed in Monthly reports, and in the selection tables of 30 Day reports, is the average of the lowest hourly average for each day. The graphs in the monthly reports also show the minimum of the daily lowest hourly averages during the month. **Note:** Not all OVIS tests measure throughput.

Finding Samples of Reports

Chapters 4 through 7 contains screen captures. Most but not all reports are illustrated. Chapter 4 contains two reports from the Hot Spots folder; Chapter 5 contains two reports from the summary folder; chapter 6 contains every report in the detail folder; and chapter 7 contains both reports in the forecast folder.

The screen captures in this manual are not intended to compete with the demo package. If you have access to the demo package, install it. The demo package will show you what fully populated reports look like, and you can also use it to experiment with view options and parameters. Unlike this user guide, the demo package contains a sample of every report in the package. Like real reports, demo reports are interactive—selection tables are linked to graphs, and you may experiment with view options for individual tables and graphs. Unlike real reports, demo reports are static; they do not change from day to day.

Provisioning and the Object Model

There is no need to provision Internet Services 1.0. This is because OVPI uses customer information maintained by the OVIS Management Server to populate the appropriate table in the Common Property Tables package. The customer data in that table is used by Internet Services 1.0 to populate reports with customers. As a result:

- OVPI knows which services belong to each customer
- OVPI knows which probe types are used by each customer

Installing Internet Services 1.0 modifies the object model maintained by OVPI. The following objects are added to the customer view model:

- Service
- OVIS Probe type

OVIS customers are viewable from the Management Console —

Select **Objects > View > Change View > Customers**

You can view any report in the Internet Services 1.0 package by highlighting a customer and selecting one of the reports listed under Object Specific Reports. For example:

Customer XYZ > Object Specific Reports > Daily Probe Type Hot Spots

The report that opens will be constrained, containing data for customer *xyz* only. You can launch summary or detail reports by selecting a specific service or probe type —

Customer XYZ > Probe Type N > Daily Probe Type Detail Report

Customer XYZ > Service N > Daily Service Summary Report

The report that opens will be constrained, containing data for *n* probe type, or *n* service, for customer *xyz* only.

Integration with NNM

If OVPI and Network Node Manager are already integrated, you can launch the reports in the Internet Services 1.0 directly from NNM. The reports in this package (as well as the reports in any other OVPI report packs you are using) will be listed in the Report Launchpad window. The NNM operator can open this window from:

- NNM ovw
- Home Base Dynamic Views
- NNM alarm browser

OVIS Management Servers are already integrated with NNM and the NNM alarm browser. For this reason, Internet Services 1.0 does not include a thresholds sub-package.

Ways to Customize Reports

The contents of a report can be customized by applying group filters, by editing parameters, by editing tables and graphs. If you apply a group filter, you are filtering out data for the purpose of creating customer-specific reports available to the users associated with one particular customer. If you edit a table, graph, or parameter, you are making a temporary change to a report. For more about editing tables and graphs—also known as selecting a different view option for tables and graphs—see Chapter 8, Editing Tables and Graphs.

Group Filters

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

- Importing custom property information (customer names and device locations) using Common Property Tables 3.0
- Creating a group account for all of the users affiliated with a particular customer
- Creating a group filter for the group account

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

Report Parameters

By editing a parameter, you can apply a constraint to the report, thereby eliminating data you do not want to see. The Internet Services Report Pack supports the following parameters:

- Customer
- Service
- Probe Type
- Cust_id

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

Refer to the following documents for additional information:

- *Internet Services Report Pack 1.0 Release Statement*
- *Common Property Tables 3.0 User Guide, April 2004*
- *NNM / OVPI Integration Module 2.0 User Guide, April 2004*
- *RNS 5.0 Release Notes, April 2004*
- *OVIS 5.0 User's Reference Guide, September 2003*
- *OVIS 5.0 Custom Probes API Guide, September 2003*
- *OVIS 5.0 Release Notes, September 2003*

Manuals for the core product, OVPI, and manuals for the reporting solutions that run on OVPI are available for downloading from the following site:

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

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

Every title under **Reporting and Network Solutions** indicates the month and year of publication. Since 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.

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Package Installation

This chapter covers the following topics:

- Guidelines for a smooth installation
- Installing Internet Services 1.0
- Creating OVIS collections
- View options
- Seeing performance data in reports
- Package removal

The Internet Service Report Pack Datapipe configures OVPI to collect test data from one or more OVIS Management Servers. While the datapipe configures OVPI for data collection, the Internet Services Report Pack configures OVPI for data aggregation and reporting.

Guidelines for a Smooth Installation

The RNS 5.0 product CD includes NNM components as well as OVPI report packs. If the package extraction step has already taken place, every OVPI package on the CD (including the Internet Services Report Pack 1.0) has been extracted from the CD and copied to the Packages directory on your system. To install Internet Services 1.0, start Package Manager and follow the on-screen instruction.

If you have not extracted packages from the RNS 5.0 CD, do that now. The install script will extract OVPI packages from the CD and copy the results to the Packages directory on your system.When the extraction step finishes, the install script will prompt you to start Package Manager. Before getting to that step, review the following guidelines.

Prerequisites

Make sure the following software is already installed before installing Interface Reporting:

- OVPI 5.0
- Any available Service Pack for OVPI 5.0
- Common Property Tables 3.0

Distributed Systems

If your system is distributed, the installation procedure is more complicated. Following is a summary of the installation procedure for a distributed system:

1. Verify that every server is running OVPI 5.0 and all available Service Packs for OVPI 5.0
2. Disable trendcopy on the central server.
3. If your central server is running Common Property Tables 2.2, upgrade to version 3.0.
4. Install Internet Services 1.0 on the central server; deploy reports
5. For each satellite server:
   - If you are running Common Property Tables 2.2, upgrade to version 3.0
   - Install these packages:
     - Internet Services Report Pack 1.0
     - Internet Services Report Pack Datapipe 1.0
6. Re-enable trendcopy on the central server.

When installation is complete, you must configure the central server and each satellite server. The configuration steps are covered in Chapter 3, Distributed Systems. You will also need to define OVIS collections for each server that performs a polling function. The procedure for defining OVIS collections comes later in this chapter.

Upgrading Common Property Tables

If you are running an older version of Common Property Tables, you need to upgrade that package to version 3.0. If you are not running an older version of Common Property Tables, there is no need to do anything, since Package Manager will install the latest version of Common Property Tables for you, automatically.

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

Installing Internet Services 1.0

This section covers the following tasks:

- Task 1: Extract packages from the RNS 5.0 product CD
- Task 2: If necessary, upgrade Common Property Tables
- Task 3: Install these packages:
  - Internet Services 1.0
  - Internet Services 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 5.0 CD. On Windows, a Main Menu displays automatically; on UNIX, mount the CD, navigate to the top-level directory for the CD drive, and type the setup command.
4. Select OVPI report packs by typing **1** in the choice field and pressing Enter. The install script displays a percentage complete bar. When extraction finishes, the install script starts Package Manager. The Package Manager welcome window opens.

If you navigate to the Packages directory on your system, you will see the following folders under the Internet Services folder:

- Internet_Services.ap
- Inernet_Services_Demo.ap

Installing the demo package is optional. You may install the demo package and only the demo package, or you may install the demo package along with everything else.

Task 2: Upgrade to Common Property Tables 3.0

If you are running CPT 2.2, and you have not already upgraded to CPT 3.0, do this now. Observe these rules:

- Do not install any other package with the CPT upgrade package; install the CPT upgrade package and *only* the CPT upgrade package.
- When prompted to accept or disable the option to Deploy Reports, accept the default.
- When the install finishes, click **Done** to return to the Management Console.

If you need help with the upgrade, refer to the *Common Property Tables 3.0 User Guide*.

Task 3: Install the report pack and the datapipe

1. From the Management Console, select **Tools > Package Manager**.
2. Click **Next.** The Package Location window opens.
3. Click the **Install** radio button.
4. Approve the default installation directory or use the browse feature to select a different directory if necessary.
5. Click **Next.** The Report Deployment window opens. Accept the default for Deploy Reports; accept the default for application server name and port.
6. Type the username and password for the OVPI Application Server.
7. Click **Next.** The Package Selection window opens.
8. Click the check box next to the following package:

Internet Services 1.0

Internet Services Datapipe 1.0

Internet Services Demo [optional]

9 Click **Next.** The Type Discovery window opens. Disable the default to run Type Discovery immediately after package installation.

The Internet Services package does not require Type Discovery. However, if you are installing other report packs in addition to Internet Services, you may need to run Type Discovery for those other packages.

10 Click **Next.** The Selection Summary window opens.

11 Click **Install.** The Installation Progress window opens and the install process begins. When the install finishes, a package install complete message appears.

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

13 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`**

Once the Internet Service Report Pack and the associated datapipe are installed, your next task is to define OVIS collections.

Defining OVIS Collections

Follow these steps to define OVIS collections:

1 Start the Management Console.

2 Click the Systems icon on the left-hand side of the Management Console.

3 Expand the information under the OVPI system by clicking “+”.

4 Right-click the databases folder icon and select **Add Database**. The Add Database Wizard opens.

5 Click **Next**. Select **Generic Supported Database**.

6 Click **Next**. The Database Connection Information window opens.

7 Add the following database connection information:

- Hostname – Either the host name or the IP address of the OVIS server.

- Port – The TCP/IP port number.

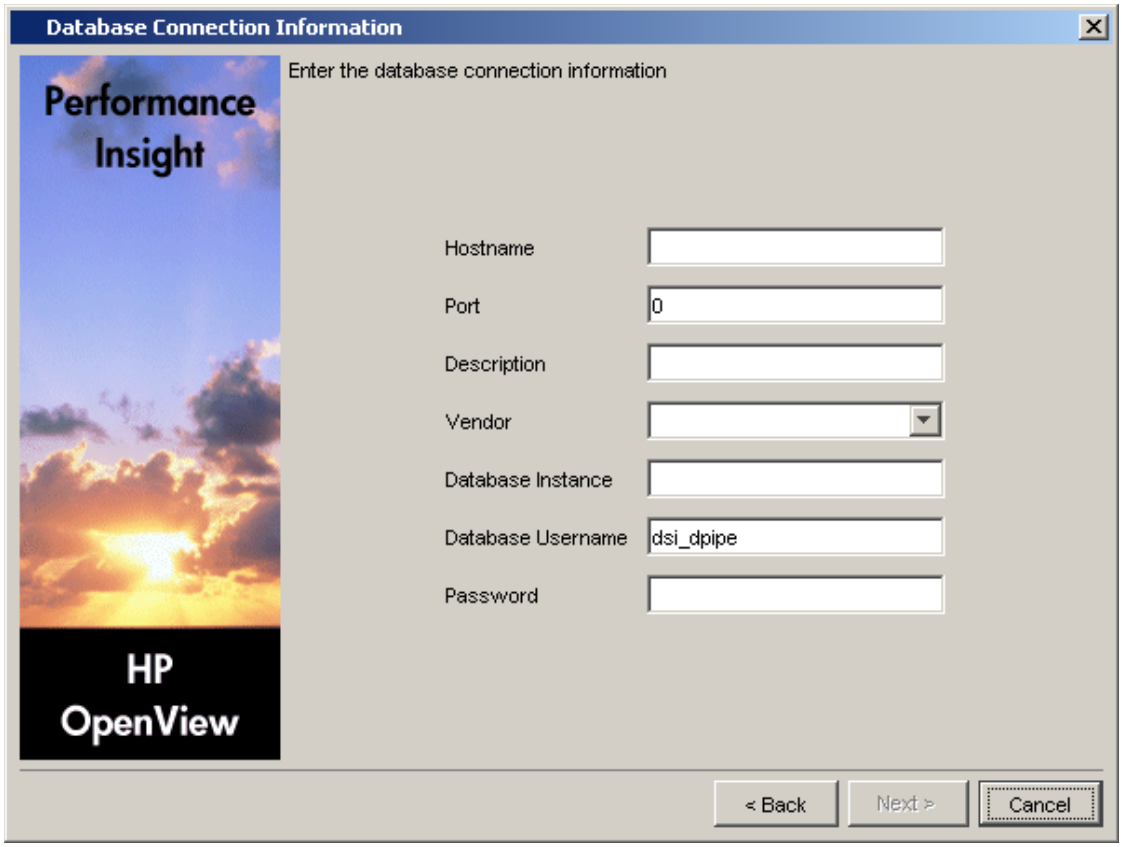
  The port number for an OVIS system installed on Oracle is normally 1521. If this number is not valid, check with your Oracle DBA. The procedure for determining the SQL server port number is provided below.

- Description – Must include either “OVIS” or “ovis” to enable collection of OVIS data.
- Vendor – Select the database vendor for the OVIS system.
- Database Instance – Specify OVOPS for SQL server; reporter for Oracle.
- Database Username – Username with access to the OVIS database.
- Database password

8 Click **Next**. Enter a unique, identifying System name and (optional) description.

9 Click **Next.** The Summary window opens.

10 Click **Finish.**



Determining the Port Number

Follow these steps to determine the port number for a SQL Server OVIS system:

1 Execute svrnetcn.exe from the command line. The SQL Server Network Utility opens.

2 Verify that TCP/IP is selected in the Enabled Protocols section.

3 Click **Properties.** The port number appears in the pop-up window.

Collecting Data from OVIS

Once the OVIS system has been added as a supported database, the Internet Services Datapipe will begin collecting data automatically. The initial collection may take a long time. This is because OVIS systems store data for a number of days. If the OVIS system is using the default, data will be stored for 7 days. Subsequent collections will complete much faster, since only incremental data will be collected.

If you wish to stop collecting from an OVIS system, do one of the following:

- Using the Management Console, delete the system as a supported database
- Edit the database description, removing any reference to “OVIS” or “ovis”

Ways to View Reports

During the preceding installation procedure, you enabled the Deploy Reports option when you installed the Internet Services Report Pack. As a result, Internet Service 1.0 reports are deployed and available for remote viewing.

The method of report viewing available to you depends on how OVPI was 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 was not installed on your system, the Web Access Server is your only option for viewing reports.

For more information about the client components, refer to the *Performance Insight Installation Guide*. For more information about deploying, viewing, and undeploying reports, refer to the *Performance Insight Guide to Building and Viewing Reports*.

Seeing Performance Data in Reports

If you are accustomed to working with other OVPI packages, you know that Near Real Time reports are the first reports to populate with data. Since there are no NRT reports in this package, don’t look for data right away. Since processing occurs at night, the earliest data will appear is tomorrow.

When tomorrow arrives you will see some data in daily reports, 30 day reports, and monthly reports. In daily reports, you will see totals and averages for each day for which you have data. In the 30 day reports, you will see aggregated data representing all the days for which you have data. In the monthly reports, you will see month-to-date aggregations in the selection tables. If the data you collected includes data for any part of the previous calendar month, the graphs in the monthly reports will be populated. If the data you collected has no data for the previous month, the graphs will remain empty until you begin collecting data on the first day of next month.

Forecast reports are generated from a rolling baseline comprising 30 days of data. Even though forecast reports will populate with data before the initial baseline is complete, do not look for reliable forecasting information until the initial baseline period is complete.

Package Removal

Follow these steps to uninstall Internet Services. Removing Internet Services 1.0 will automatically remove the datapipe. Removing OVIS systems defined as a Generic Supported Database is a good practice, but this step is not absolutely necessary.

Task 1: Uninstalling Internet Services 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.
3. Start OVPI and select 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. If Internet Service reports were deployed from this server, accept the defaults for Undeploy Reports, Application Server Name, and Port. Otherwise, clear the check box and skip to step 9.
8. Type the username and password for the OVPI Application Server.
9. Click **Next.** The Package Selection window opens. Click the check box next to *Internet Services Report Pack 1.0*.
10. Click **OK.**
11. Click **Next.** The Selection Summary window opens.
12. Click **Uninstall.** The Progress window opens and the removal process begins. When the uninstall process is complete, a package removal complete message appears.
13. Click **Done** to return to the Management Console.
14. Restart OVPI Timer.

Task 2: Removing any OVIS systems defined as a Generic Supported Database

1. Start the Management Console.
2. Click the Systems icon on the left-hand side of the Management Console.
3. Select the local system. OVPI and generic databases appear in the main window.
4. Right-click the OVIS system and select **Delete System...**
5. Click **Yes** in the pop-up window.

The OVIS system is now removed.

3

Configuring a Distributed System

If you are running the Internet Services Report Pack 1.0 on a single OVPI server, skip this chapter. This chapter pertains to distributed systems only. The following topics are covered here:

- Verifying correct package installation
- Configuring the central server
- Configuring satellite servers

Verifying Correct Package Installation

If you intend to run Internet Services 1.0 as a distributed system, you need to configure all of the servers in the system. Before getting to that procedure, let's verify that you have the right packages installed on each server.

Packages on the Central Server

- Internet Services Report Pack 1.0; with reports deployed
- Common Property Tables 3.0; with reports [forms] deployed

Packages on Each Satellite Server

- Internet Services Report Pack 1.0
- Common Property Tables 3.0
- Internet Services Report Pack Datapipe 1.0

Typically, the central server does not poll. If you want the central server in your system to poll, install the datapipe on the central server. If desired, you may view reports on satellite servers, also known as local reporting. If you want local reporting, then deploy reports from each satellite server.

Configuring the Central Server

To configure the central server, perform the following tasks:

- Task 1: Set up connections with satellite server databases

- Task 2: Configure trendcopy pull commands

Task 1: Set up connections with satellite server databases

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

Task 2: Configure trendcopy pull commands

1. Open this file:

   `$DPIPE_HOME/scripts/Internet_Services_Hourly.pro`
2. For block2, remove the “#” from `begin` and end.
3. Modify the trendcopy commands so that each command includes the correct server name for the central server and for each satellite server.
4. If necessary, add more commands.

Configuring Satellite Servers

To configure a satellite server, switch off aggregations above the hourly level. Do this by editing the $DPIPE_HOME/lib/trendtimer.sched file. Comment out the line referencing Internet_Services_Daily.pro.

4

Hot Spots

Hot Spots reports improve your visibility into the services and probe types that are experiencing the worst performance. Each report pinpoints the 10 services or 10 probe types with the highest service level violations, lowest availability, highest response time, and lowest throughput.

The Hot Spots folder contains three probe type reports and three service reports:

- 30 Day Probe Type Hot spots
- Daily Probe Type Hot Spots
- Monthly Probe Type Hot Spots
- 30 Day Services Hot Spots
- Daily Services Hot Spots
- Monthly Services Hot Spots

If you want to watch for problem areas as they arise, use the daily reports. As soon as you spot a problem area, you can investigate it further by using the summary and detail reports in the other folders.

The monthly reports show (1) the month-to-date totals and the month-to-date averages for the current month, and (2) the complete monthly totals/averages for previous months. Use these reports to compare actual performance to monthly Service Level Agreements.

The 30 Day reports provide an aggregated view of recent performance. These reports smooth out daily anomalies, while crossing the boundary between two months.

See below for samples of the following reports:

- 30 Day Probe Type Hot Spots
- 30 Day Services Hot Spots

Internet Services

30 Day Probe Type Hot Spots

The 30 Day Probe Type Hot Spots Report provides lists of probe types that had the worst performance (service level violations, availability, response time and throughput) for the preceding 30 days.

Customer

All Customers
ACME
Internet Services, Ltd.
Web Monitoring Corp.

Sevice Level Violations

Most Service Level Violations

	Probe Type	Violations
1	HTTP	35,255
2	EXCHANGE	24,942
3	RADIUS	19,423
4	HTTP_TRANS	6,839
5	DHCP	2,276
6	ODBC	1,390
7	STREAMING_MEDIA	1,268
8	IMAP4	526
9	WAP	246
10	DNS	212

Availability

Worst 30 Day Availability (Percent)

	Probe Type	Availability
1	ODBC	0.0
2	RADIUS	0.0
3	EXCHANGE	5.3
4	DHCP	53.4
5	HTTPS	53.9
6	IMAP4	62.1
7	HTTP_TRANS	68.8
8	HTTP	78.9
9	WAP	82.3
10	MAILROUNDTRIP	98.9

Response Time

Worst 30 Day Average (Seconds)

	Probe Type	Response Time
1	STREAMING_MEDIA	22.91
2	HTTP	15.04
3	WAP	6.81
4	MAILROUNDTRIP	6.34
5	HTTP_TRANS	4.02
6	SAP_BASIS	1.37
7	SCRIPT	1.34
8	POP3	1.27
9	IMAP4	1.13
10	FTP	1.02

Response time displayed is the average of the daily maximum hourly averages over the previous 30 days.

Throughput

Worst 30 Day Average (Bytes / Second)

	Probe Type	Throughput
1	NTP	0.23
2	ICMP	0.41
3	NNTP	0.69
4	DHCP	0.97
5	IMAP4	2.08
6	STREAMING_MEDIA	2.57
7	WAP	2.70
8	SMTP	4.78
9	HTTPS	16.39
10	HTTP	39.04

Throughput displayed is the average of the daily minimum hourly averages over the previous 30 days.

Internet Services

30 Day Services Hot Spots

The 30 Day Services Hot Spots Report provides lists of services that had the worst performance (service level violations, availability, response time and throughput) for the preceding 30 days.

Customer

ACME

Internet Services, Ltd.

Web Monitoring Corp.

XYZ, Incorporated

Sevice Level Violations

Most Service Level Violations

	Service	Violations
1	ACME HTTP1	25,147
2	ACME DHCP	2,276
3	ACME HTTP2	233
4	ACME DNS	188
5	WINSAT5 FTP	66
6	ACME ICMP	0
7	ACME ODBC	0
8	Smith DHCP	0

Availability

Worst 30 Day Availability (Percent)

	Service	Availability
1	ACME ODBC	0.0
2	Smith DHCP	26.2
3	ACME DHCP	72.8
4	ACME HTTP2	97.2
5	ACME HTTP1	97.3
6	ACME DNS	99.9
7	ACME ICMP	99.9
8	WINSAT5 FTP	99.9

Response Time

Worst 30 Day Average (Seconds)

	Service	Response Time
1	ACME HTTP2	18.04
2	ACME HTTP1	17.72
3	WINSAT5 FTP	1.54
4	Smith DHCP	0.95
5	ACME DHCP	0.77
6	ACME DNS	0.49
7	ACME ICMP	0.03

Response time displayed is the average of the daily maximum hourly averages over the previous 30 days.

Throughput

Worst 30 Day Average (Bytes / Second)

	Service	Throughput
1	ACME ICMP	0.29
2	Smith DHCP	0.57
3	ACME DHCP	0.85
4	ACME HTTP2	4.20
5	ACME HTTP1	4.61
6	WINSAT5 FTP	114.00

Throughput displayed is the average of the daily minimum hourly averages over the previous 30 days.

5

Summary Reports

The reports in the summary folder provide statistics at the service and probe-type level. The summary folder contains the following reports:

- 30 Day Probe Type Summary
- Daily Probe Type Summary
- Monthly Probe Type Summary
- 30 Day Service Summary
- Daily Service Summary
- Monthly Service Summary

Summary reports provide an historical context for hot spots reports. For example, if a report in the Hot Spots folder has just alerted you to a problem, you can use the corresponding summary report to find out whether you are dealing with an unusual situation which could not have been predicted, or a trend that has been steadily worsening over time.

In a summary report, you drill down from a customer to a list of services or probe types associated with the customer. For each probe type or service, you have the following aggregated statistics:

- Service level violations
- Availability
- Response time
- Throughput

The figures in probe type/service selection table aggregate data for every probe type/target associated with each probe type or service. Beneath the probe type/service table are graphs for service violations, availability, response time, and throughput. Use these graphs to see what the trend has been like for the past 30 days and the past 12 months.

See below for two sample reports, the Daily Probe Type Summary and the Daily Service Summary.

Internet Services

Daily Probe Type Summary

The Probe Type Summary Report presents performance statistics for probe types associated with a given customer for the selected day. By selecting a particular probe type, the user can see its service level violations, availability, response time and throughput over the preceding 30 days.

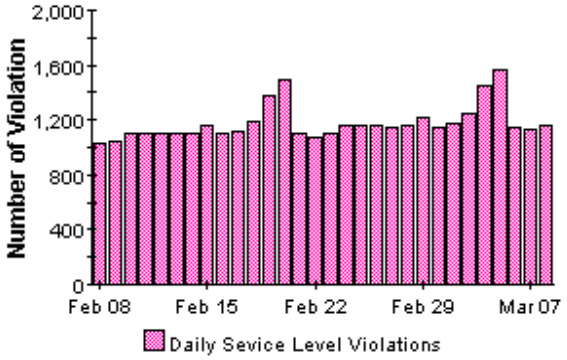
Customer	Day
All Customers	March 8, 2004
ACME	March 7, 2004
Internet Services, Ltd.	March 6, 2004
Web Monitoring Corp.	March 5, 2004

Probe Type Performance

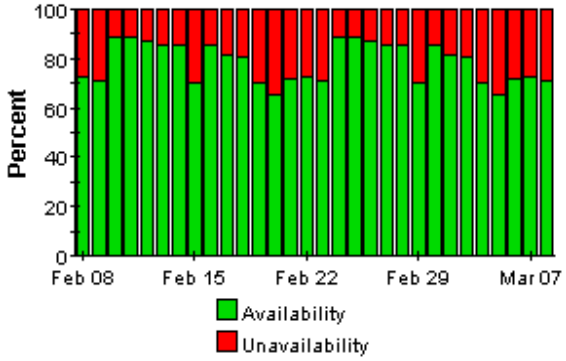
Sorted by number of service level violations

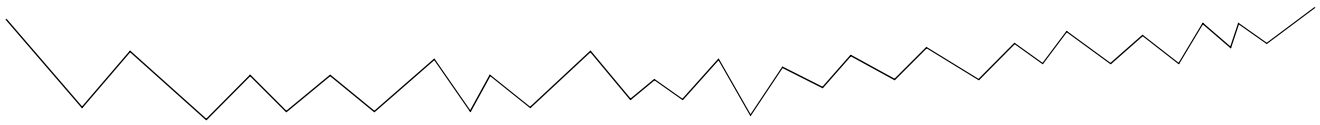
Probe Type	Service Level Violations	Availability	Response Time	Throughput
HTTP	1,154	71.28	20.97	61.68
EXCHANGE	864	0.00		
RADIUS	576	0.00		
HTTP_TRANS	289	74.91	2.37	74.55
DHCP	78	49.65	0.70	1.02
DNS	10	99.88	0.65	
FTP	4	100.00	1.14	56.42
ODBC	0	0.00		
HTTPS	0	50.00	0.61	17.48
STREAMING_MEDIA	0	100.00	22.62	

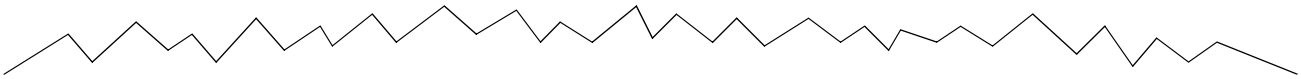
Service Level Violation
HTTP

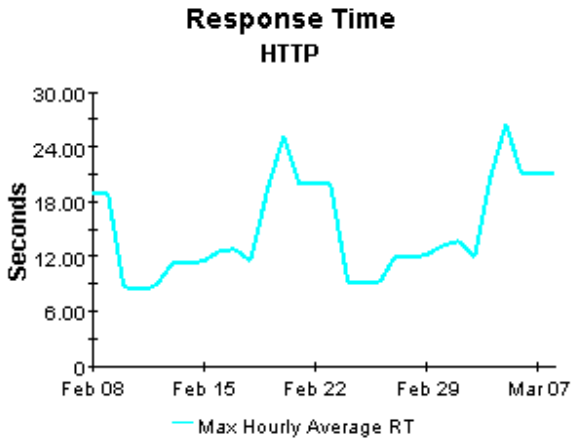


Availability
HTTP

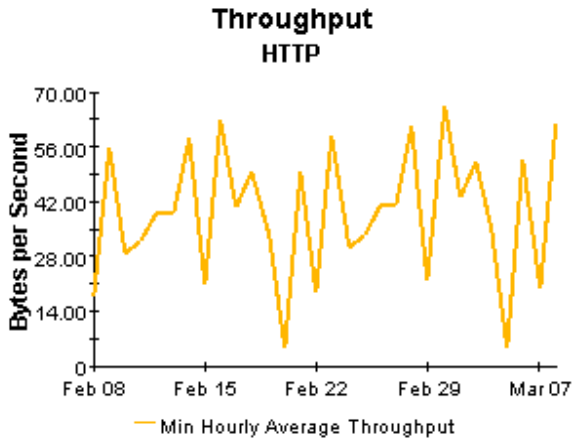








Response time displayed is the maximum hourly average per day.



Throughput displayed is the minimum hourly average per day.

Internet Services

Daily Services Summary

The Services Summary Report presents performance statistics for services associated with a given customer for the selected day. By selecting a particular service, the user can see its service level violations, availability, response time and throughput over the last 30 days.

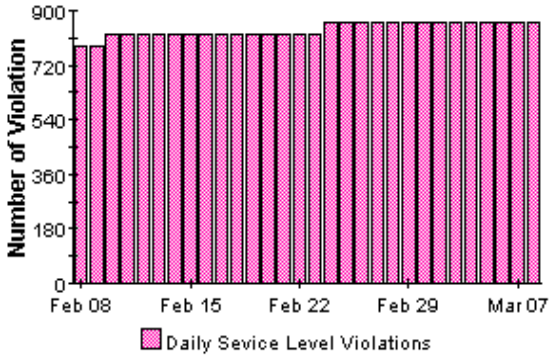
Customer	Day
ACME	March 8, 2004
Internet Services, Ltd.	March 7, 2004
Web Monitoring Corp.	March 6, 2004
XYZ, Incorporated	March 5, 2004

Service Performance

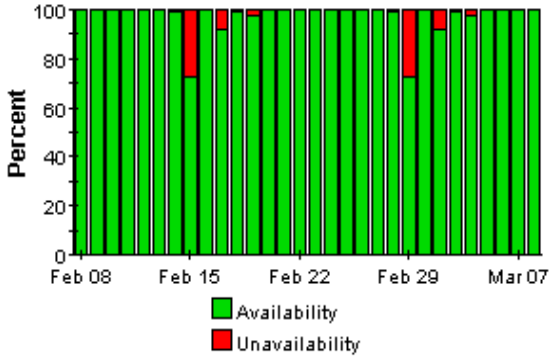
Sorted by number of service level violations

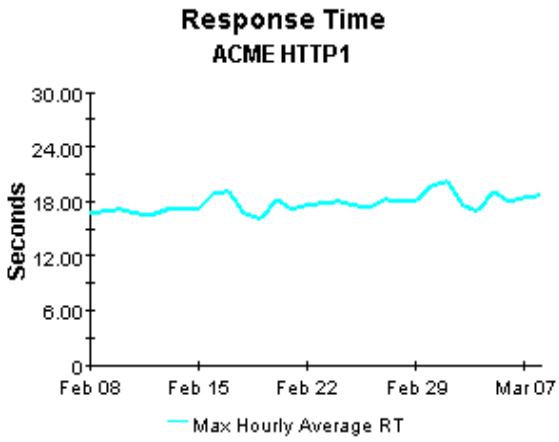
Service	Service Level Violations	Availability	Response Time	Throughput
ACME HTTP1	864	99.88	18.67	4.51
ACME DHCP	78	72.92	0.73	0.97
ACME DNS	9	100.00	0.95	
WINSAT5 FTP	4	100.00	1.81	89.07
ACME HTTP2	2	99.31	18.06	4.72
ACME ODBC	0	0.00		
Smith DHCP	0	26.39	1.08	0.52
ACME ICMP	0	100.00	0.03	0.34

Service Level Violation
ACME HTTP1

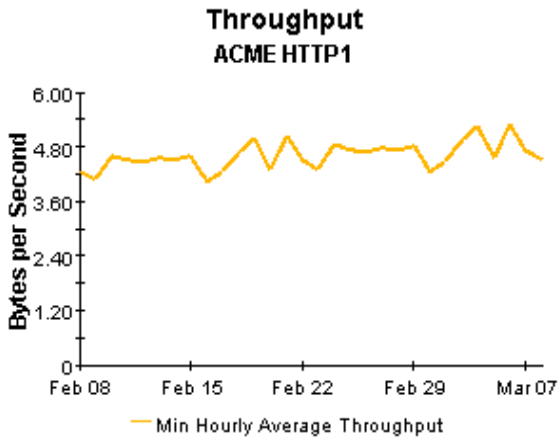


Availability
ACME HTTP1





Response time displayed is the maximum hourly average per day.



Throughput displayed is the minimum hourly average per day.

6

Detail Reports

The reports in the detail folder allow you to find out which OVIS tests are experiencing problems and whether or not the problem is typical or unusual compared to past performance. The detail folder contains the following probe type and service reports:

- 30 Day Probe Type Detail
- Daily Probe Type Detail
- Monthly Probe Type Detail
- 30 Day Service Detail
- Daily Service Detail
- Monthly Service Detail

All detail reports begin with a list of customers. Select a customer to display a list of services/probe types, sorted by violations highest to lowest, with data for the following statistics aggregated over all OVIS tests:

- Service level violations
- Availability
- Response time
- Throughput

By selecting a particular service or probe type, you can display (1) a list of the associated probe system/target combinations, sorted by violations highest to lowest, and (2) performance data for each combination. The graphs below the second table are linked to the item selected in the second table. These graphs provide test-level trending analysis, allowing you see whether violations, availability, response time, and throughput are improving or getting worse.

All OVIS tests calculate response time, but not all OVIS tests calculate throughput. If **`Null`** show up in a table or graph that reports throughput, none of the OVIS tests that target this particular service calculates throughput.

See below for samples of all six reports in the detail folder.

Internet Services

30 Day Probe Type Detail

The 30 Day Probe Type Detail Report presents performance statistics, calculated over the previous 30 days, for probe types associated with a given customer. By selecting a particular probe type, the user can see performance statisticsof the probe and target combinations for tests of the selected type. By selecting a probe and target combination, the daily service level violations, availability, response time and throughput for the selected test will be displayed for the preceding 30 days.

Customer

ACME

Internet Services, Ltd.

Web Monitoring Corp.

XYZ, Incorporated

Probe Type Performance

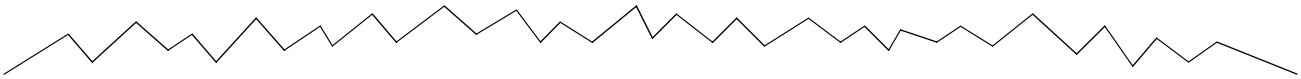
Sorted by number of service level violations

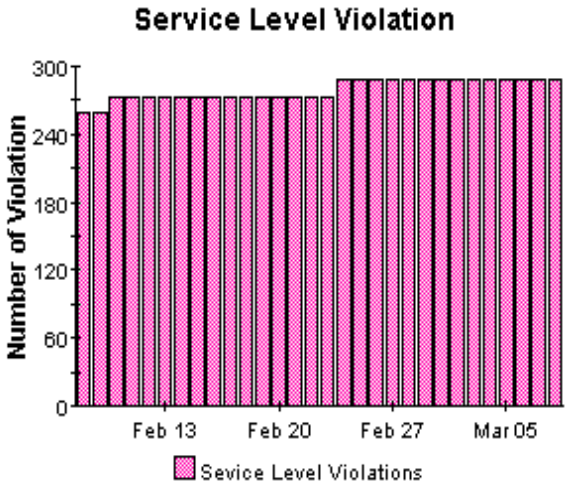
Probe Type	Service Level Violations	Availability	Response Time	Throughput
HTTP	25,380	97.3	17.70	4.52
DHCP	2,276	49.5	0.72	0.93
DNS	188	99.9	0.49	
FTP	66	99.9	1.54	114.00
ODBC	0	0.0		
ICMP	0	99.9	0.03	0.29

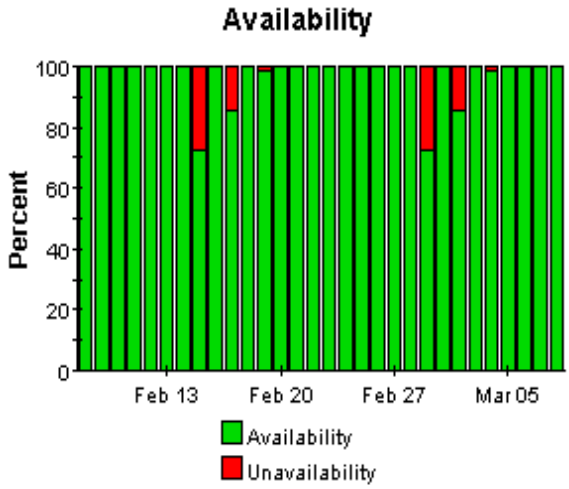
Probe System / Target Performance Breakdown

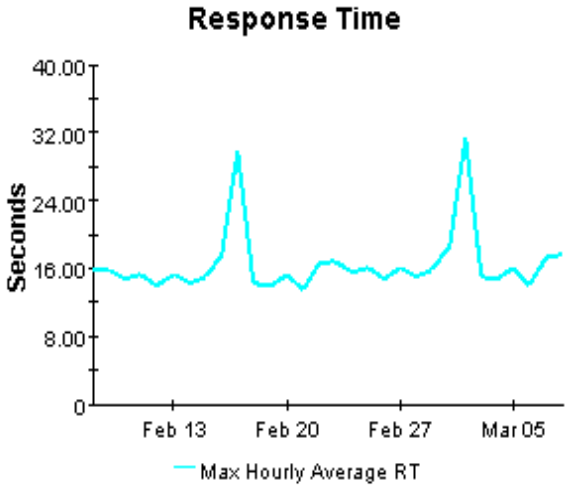
Sorted by number of service level violations

Probe System	Short Target Name	Service Level Violations	Availability	Response Time	Throughput
winsat5.esr.hp.com	www.hp.com/	8,382	97.0	16.50	4.98
winsat5.esr.hp.com	www.msn.com/	8,382	97.2	24.45	3.84
winsat5.esr.hp.com	athp.hp.com/	8,380	97.6	14.03	4.73
winsat5.esr.hp.com	www.yahoo.com/	233	97.2	18.04	4.20
winsat5	athp.hp.com/	2	100.0	10.76	5.53
winsat5	www.yahoo.com/	0	100.0	5.82	12.37

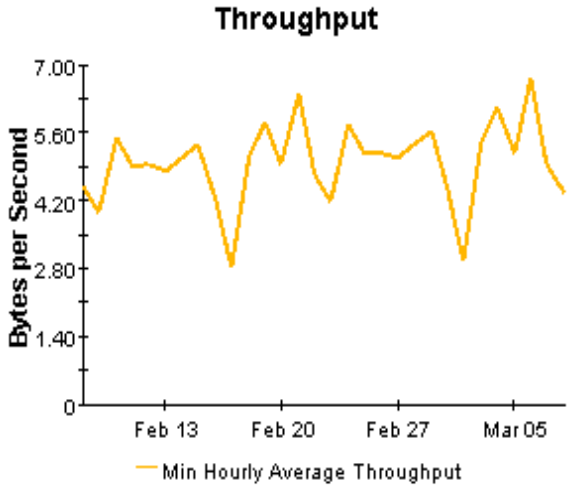








Response time displayed is the maximum hourly average per day.



Throughput displayed is the minimum hourly average per day.

Internet Services

Daily Probe Type Detail

The Probe Type Detail Report presents performance statistics for probe types associated with a given customer for the selected day. By selecting a particular probe type, the user can see performance statistics of the probe and target combinations for tests of the selected type. By selecting a probe and target combination, the service level violations, availability, response time and throughput for the selected test will be displayed for the preceding 30 days .

Customer	Day
ACME	March 8, 2004
Internet Services, Ltd.	March 7, 2004
Web Monitoring Corp.	March 6, 2004
XYZ, Incorporated	March 5, 2004

Probe Type Performance

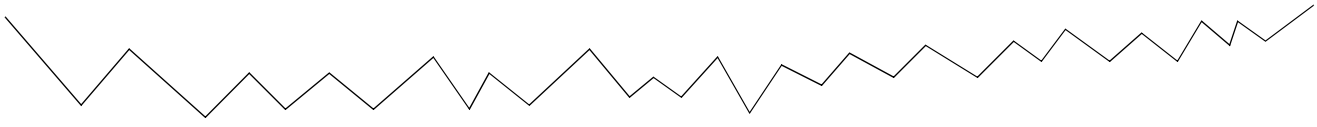
Sorted by number of service level violations

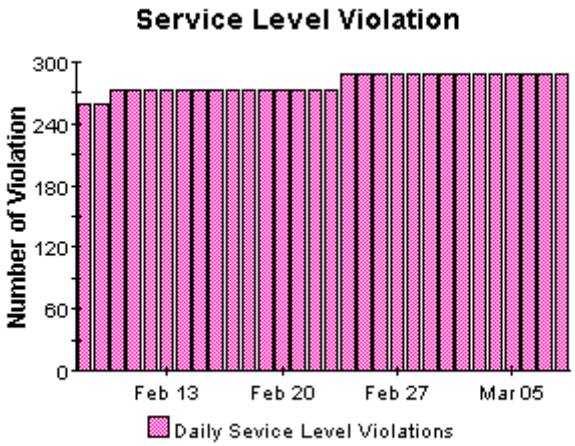
Probe Type	Service Level Violations	Availability	Response Time	Throughput
HTTP	866	99.7	18.52	4.56
DHCP	78	49.7	0.70	1.02
DNS	9	100.0	0.95	
FTP	4	100.0	1.81	89.07
ODBC	0	0.0		
ICMP	0	100.0	0.03	0.34

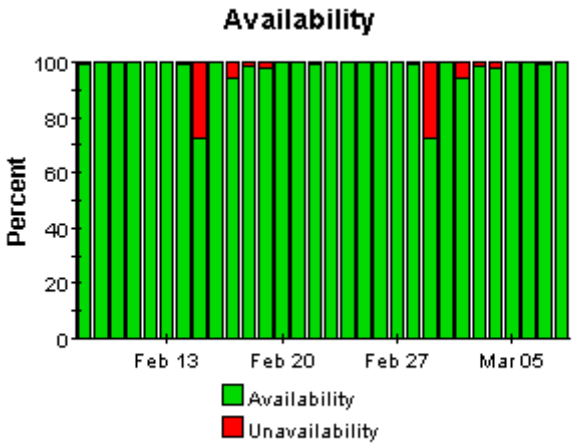
Probe System / Target Performance Breakdown

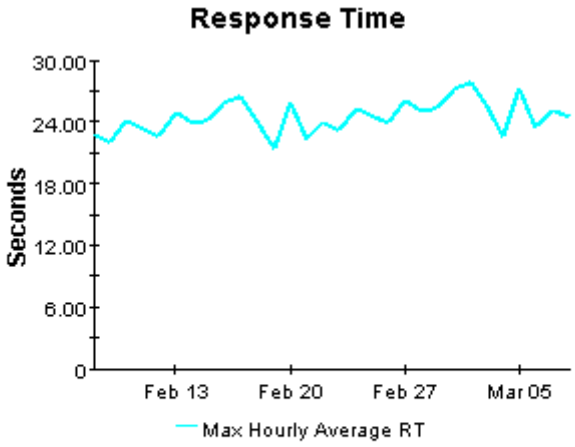
Sorted by number of service level violations

Probe System	Short Target Name	Service Level Violations	Availability	Response Time	Throughput
winsat5.esr.hp.com	www.msn.com/	288	99.7	24.43	4.21
winsat5.esr.hp.com	www.hp.com/	288	100.0	17.58	4.37
winsat5.esr.hp.com	athp.hp.com/	288	100.0	16.08	4.90
winsat5.esr.hp.com	www.yahoo.com/	2	99.3	18.06	4.72

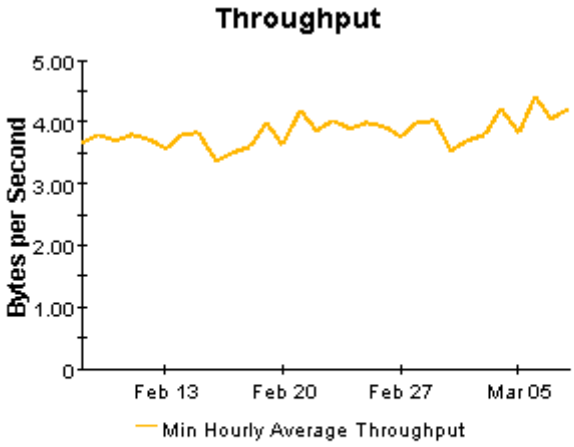








Response time displayed is the maximum hourly average per day.



Throughput displayed is the minimum hourly average per day.

Internet Services

Monthly Probe Type Detail

The Probe Type Detail Report presents performance statistics for probe types associated with a given customer for the selected month. By selecting a particular probe type, the user can see performance statistics of the probe and target combinations for tests of the selected type. By selecting a probe and target combination, the monthly service level violations, availability, response time and throughput for the selected test will be displayed for the preceding 12 months. Data for the current month covers results from the first of the month through yesterday.

Customer	Month
ACME	March, 2004
Internet Services, Ltd.	February, 2004
Web Monitoring Corp.	January, 2004
XYZ, Incorporated	December, 2003

Probe Type Performance

Sorted by number of service level violations

Probe Type	Service Level Violations	Availability	Response Time	Throughput
HTTP	6,948	98.5	18.70	4.63
DHCP	636	49.2	0.74	0.93
DNS	58	100.0	0.55	
FTP	23	100.0	1.66	124.87
ODBC	0	0.0		
ICMP	0	100.0	0.03	0.29

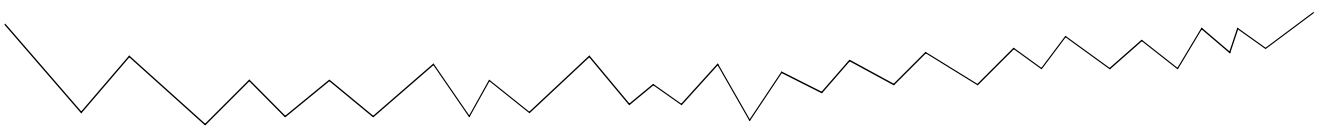
Probe System / Target Performance Breakdown

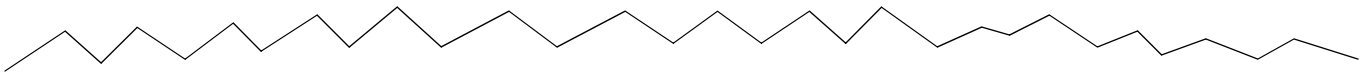
Sorted by number of service level violations

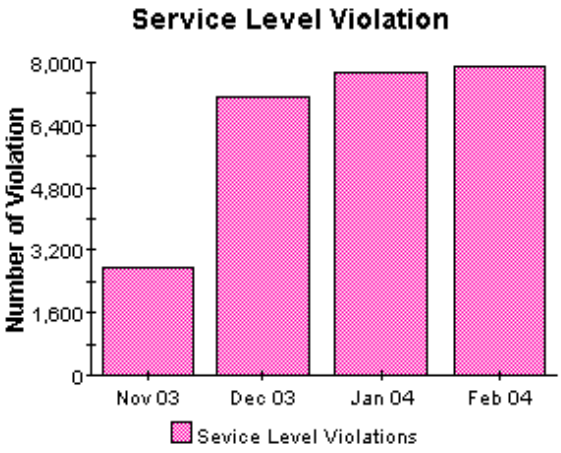
Probe System	Short Target Name	Service Level Violations	Availability	Response Time	Throughput
winsat5.esr.hp.com	www.hp.com/	2,304	97.9	18.09	5.02
winsat5.esr.hp.com	www.msn.com/	2,304	98.6	25.38	3.96
winsat5.esr.hp.com	athp.hp.com/	2,303	99.1	14.73	4.84
winsat5.esr.hp.com	www.yahoo.com/	36	98.4	19.52	4.24
winsat5	athp.hp.com/	1	100.0	11.03	5.67
winsat5	www.yahoo.com/	0	100.0	5.97	12.69

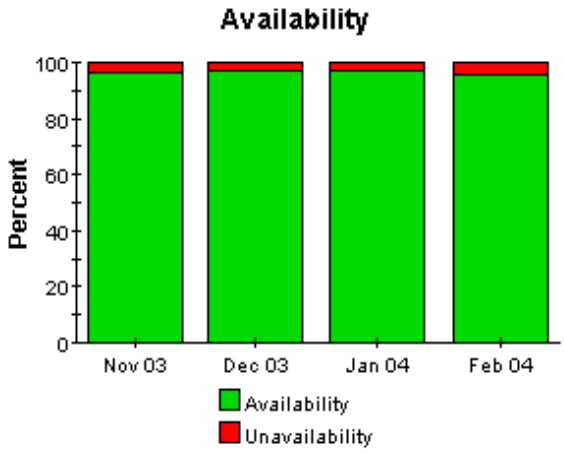
Service
ACME HTTP1

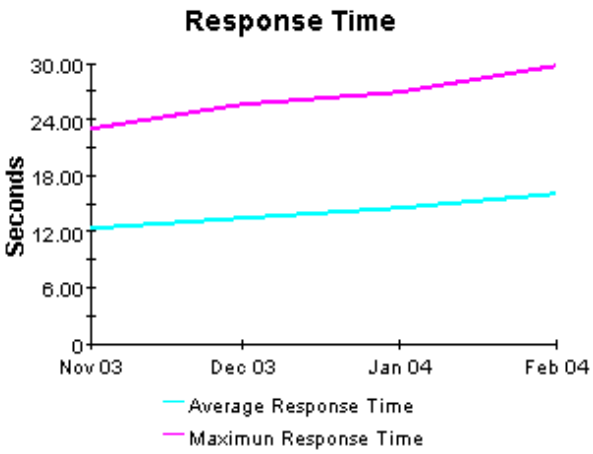
Full Target Name
www.hp.com/



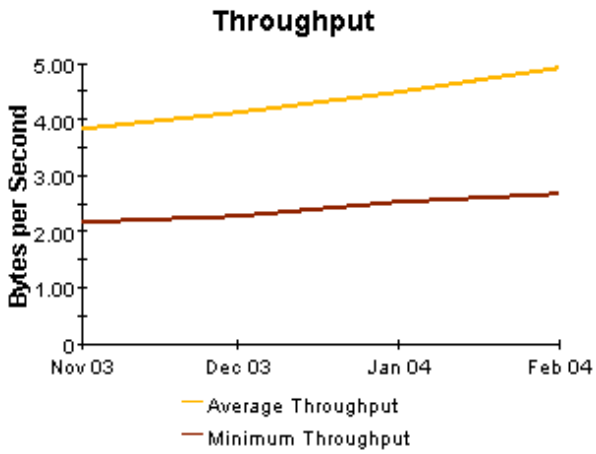








Response times displayed are the monthly average and maximum of the daily maximum hourly average.



Throughput displayed are the monthly average and minimum of the daily minimum hourly averages.

Internet Services

30 Day Services Detail

The 30 Day Services Detail Report presents performance statistics, calculated over the previous 30 days, for services associated with a given customer. By selecting a particular service, the user can see performance statistics for the probe and target combinations that are part of the selected service. By selecting a probe and target combination, the daily service level violations, availability, response time and throughput for the selected test will be displayed for the preceding 30 days.

Customer

ACME

Internet Services, Ltd.

Web Monitoring Corp.

XYZ, Incorporated

Service Performance

Sorted by number of service level violations

Service	Service Level Violations	Availability	Response Time	Throughput
ACME HTTP1	25,147	97.3	17.72	4.61
ACME DHCP	2,276	72.8	0.77	0.85
ACME HTTP2	233	97.2	18.04	4.20
ACME DNS	188	99.9	0.49	
WINSAT5 FTP	66	99.9	1.54	114.00
ACME ODBC	0	0.0		

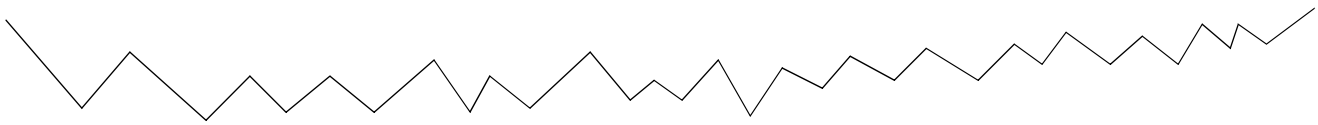
Probe System / Target Performance Breakdown

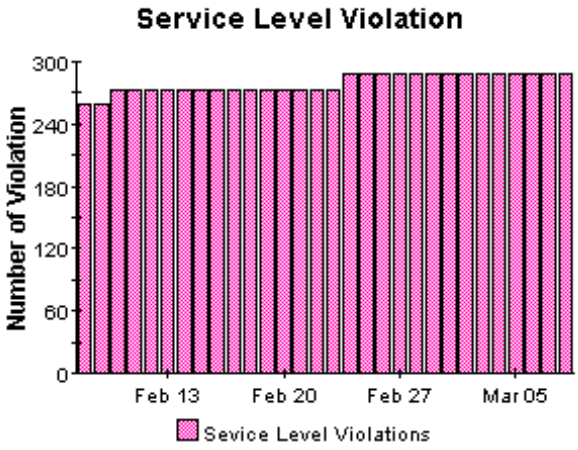
Sorted by number of service level violations

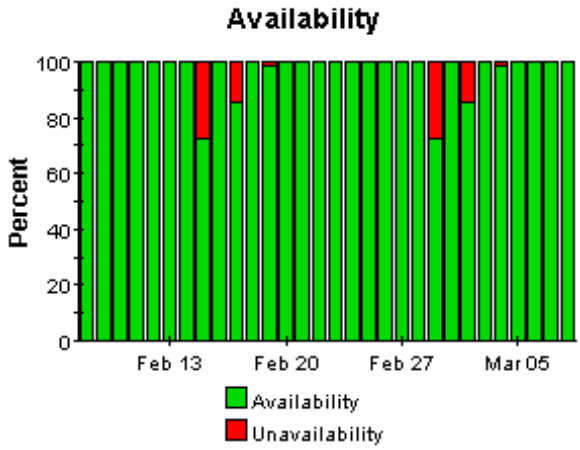
Probe System	Short Target Name	Service Level Violations	Availability	Response Time	Throughput
winsat5.esr.hp.com	www.hp.com/	8,382	97.0	16.50	4.98
winsat5.esr.hp.com	www.msn.com/	8,382	97.2	24.45	3.84
winsat5.esr.hp.com	athp.hp.com/	8,380	97.6	14.03	4.73
winsat5	athp.hp.com/	2	100.0	10.76	5.53

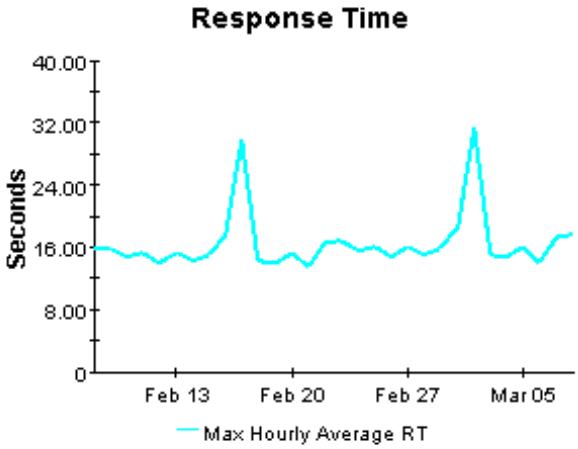
Full Target Name

www.hp.com/

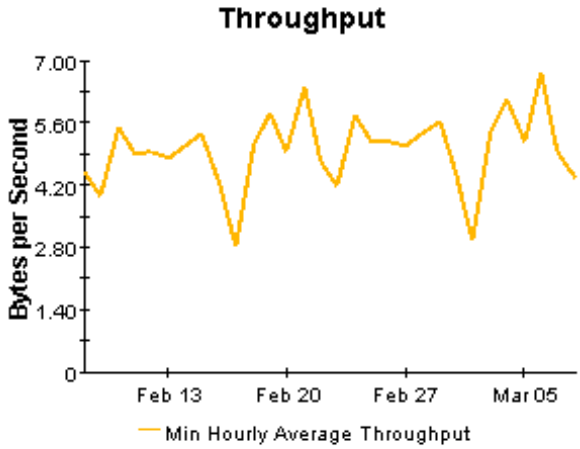








Response time displayed is the maximum hourly average per day.



Throughput displayed is the minimum hourly average per day.

Internet Services

Daily Services Detail

The Services Detail Report presents performance statistics for services associated with a given customer for the selected day. By selecting a particular service, the user can see performance statistics for the probe and target combinations that are part of the selected service. By selecting a probe and target combination, the service level violations, availability, response time and throughput for the selected test will be displayed for the last 30 days .

Customer	Day
ACME	March 8, 2004
Internet Services, Ltd.	March 7, 2004
Web Monitoring Corp.	March 6, 2004
XYZ, Incorporated	March 5, 2004

Service Performance

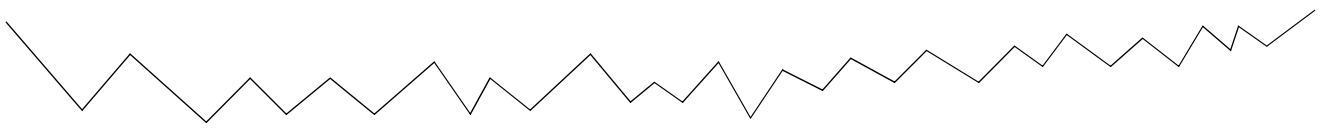
Sorted by number of service level violations

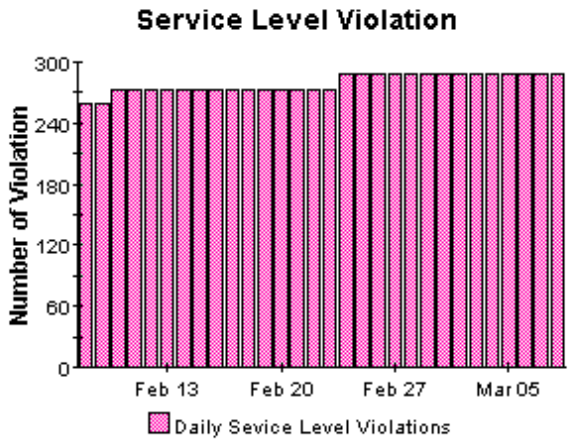
Service	Service Level Violations	Availability	Response Time	Throughput
ACME HTTP1	864	99.9	18.67	4.51
ACME DHCP	78	72.9	0.73	0.97
ACME DNS	9	100.0	0.95	
WINSAT5 FTP	4	100.0	1.81	89.07
ACME HTTP2	2	99.3	18.06	4.72
ACME ODBC	0	0.0		

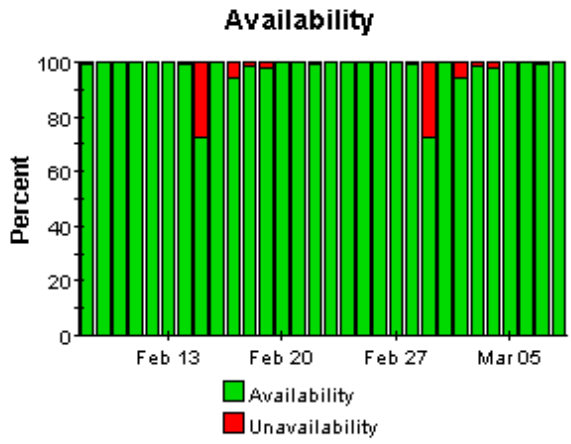
Probe System / Target Performance Breakdown

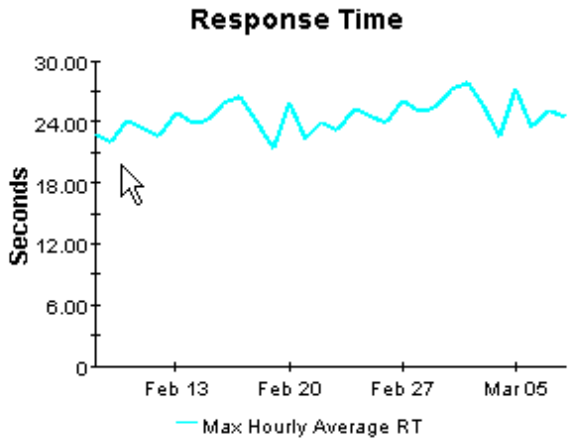
Sorted by number of service level violations

Probe System	Short Target Name	Service Level Violations	Availability	Response Time	Throughput
winsat5.esr.hp.com	www.msn.com/	288	99.7	24.43	4.21
winsat5.esr.hp.com	www.hp.com/	288	100.0	17.58	4.37
winsat5.esr.hp.com	athp.hp.com/	288	100.0	16.08	4.90

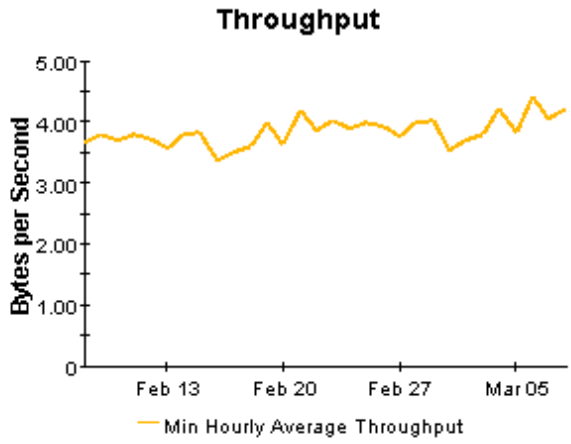








Response time displayed is the maximum hourly average per day.



Throughput displayed is the minimum hourly average per day.

Internet Services

Monthly Services Detail

The Services Detail Report presents performance statistics for services associated with a given customer for the selected month. By selecting a particular service, the user can see performance statistics for the probe and target combinations that are part of the selected service. By selecting a probe and target combination, the monthly service level violations, availability, response time and throughput for the selected test will be displayed for the preceding 12 months. Data for the current month covers results from the first of the month through yesterday.

Customer	Month
ACME	March, 2004
Internet Services, Ltd.	February, 2004
Web Monitoring Corp.	January, 2004
XYZ, Incorporated	December, 2003

Service Performance

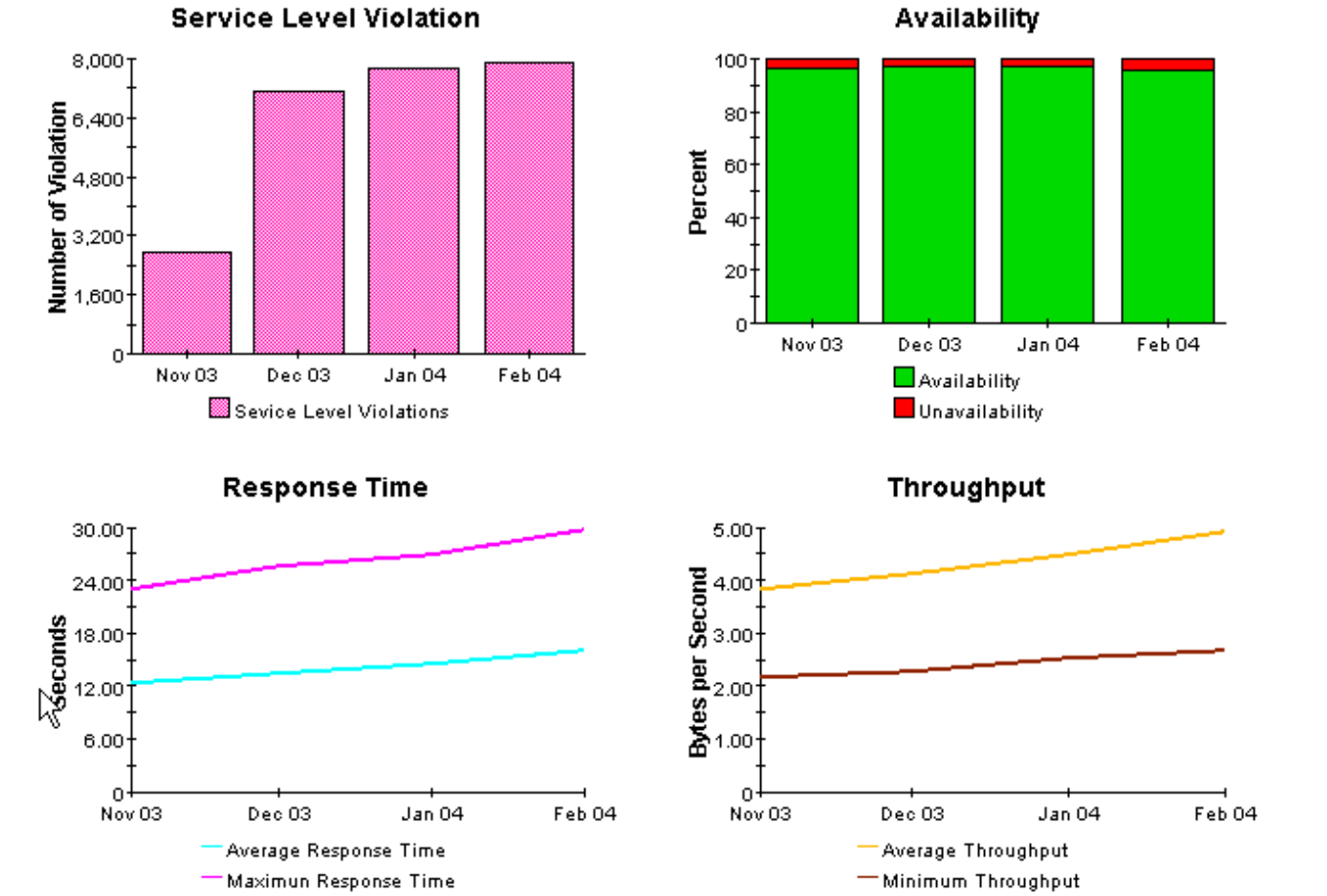
Sorted by number of service level violations

Service	Service Level Violations	Availability	Response Time	Throughput
ACME HTTP1	6,912	98.5	18.56	4.75
ACME DHCP	636	72.4	0.79	0.86
ACME DNS	58	100.0	0.55	
ACME HTTP2	36	98.4	19.52	4.24
WINSAT5 FTP	23	100.0	1.66	124.87
ACME ODBC	0	0.0		

Probe System / Target Performance Breakdown

Sorted by number of service level violations

Probe System	Short Target Name	Service Level Violations	Availability	Response Time	Throughput
winsat5.esr.hp.com	www.hp.com/	2,304	97.9	18.09	5.02
winsat5.esr.hp.com	www.msn.com/	2,304	98.6	25.38	3.96
winsat5.esr.hp.com	athp.hp.com/	2,303	99.1	14.73	4.84
winsat5	athp.hp.com/	1	100.0	11.03	5.67



Response times displayed are the monthly average and maximum of the daily maximum hourly average.

Throughput displayed are the monthly average and minimum of the daily minimum hourly averages.

7

Forecast Reports

The two reports in the forecast folder identify the services and probe types that are expected to see their performance deteriorating at the fastest rates in the weeks and months ahead. Use the forecast reports to spot:

- Probe types/services with the greatest *rate of increase* in service level violations
- Probe types/services with the greatest *rate of increase* in response time
- Probe types/services with the greatest *rate of decrease* in throughput

Forecast reports contain tables and charts. The tables perform the following functions:

- Calculate the 90-day forecast
- Calculate the baseline average
- Sort items by the rate of growth

The graphs perform the following functions:

- Display 30-day, 60-day, and 90-day forecasts [forecast tab]
- Compares the baseline average to 30/60/90 forecasts [forecast tab]
- Shows the data in the baseline that was used to generate the forecast [history tab]

See below for samples of the Probe Type Forecast and the Services Forecast.

Internet Services

Probe Type Forecast

The Probe Type Forecast Report predicts future performance statistics for probe types associated with a given customer based on the previous 30 days of data. Each list of probe types is sorted by greatest rate of projected increase (decrease for throughput). By selecting a particular probe type, the user can see the baseline average and 30, 60 and 90 day forecast of the metric, on the Forecast tab and the data used to calculate the forecast on the History tab.

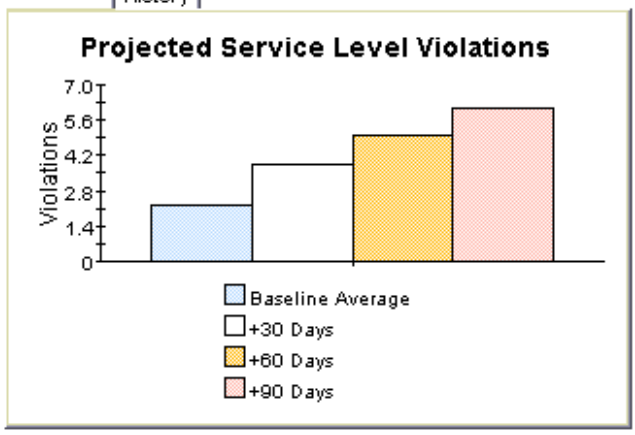
Customer

ACME
Internet Services, Ltd.
Web Monitoring Corp.

Service Level Violations

Probe Type	Baseline Average	90 Day Forecast
FTP	2.20	6.08
DNS	6.27	14.63
DHCP	75.88	110.64
HTTP	845.98	1,128.10
ICMP	0.00	0.00
ODBC	0.00	0.00

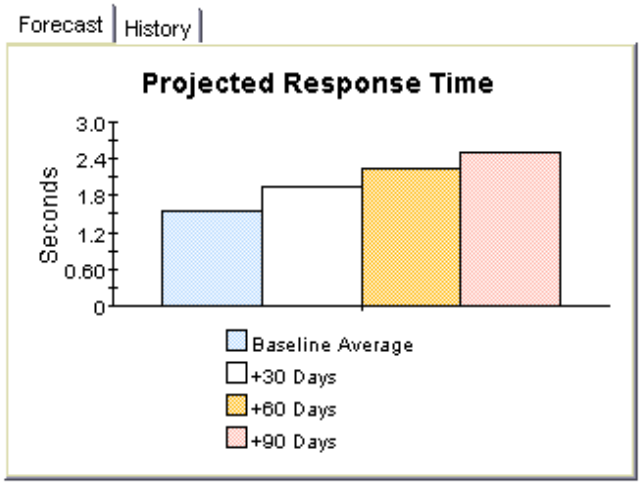
Forecast | History

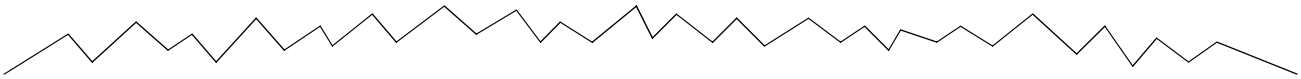


Response Time

Probe Type	Baseline Average	90 Day Forecast
FTP	1.54	2.52
DNS	0.49	0.78
HTTP	17.70	25.24
DHCP	0.72	0.94
ODBC		
ICMP	0.03	0.02

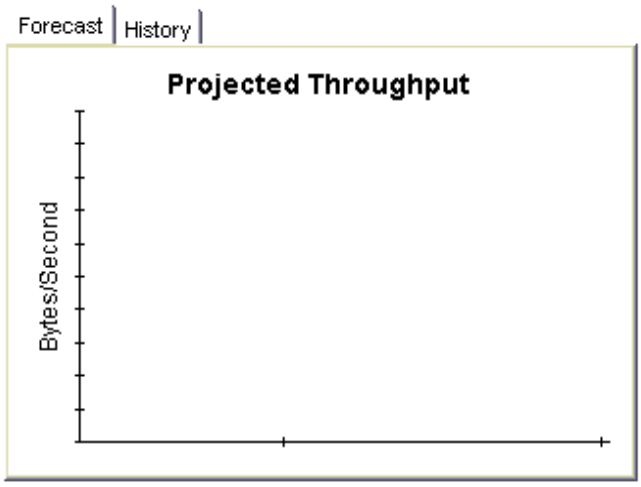
Forecast | History





Throughput

Probe Type	Baseline Average	90 Day Forecast
DNS		
ODBC		
DHCP	0.93	1.16
HTTP	4.52	6.13
ICMP	0.29	0.50
FTP	114.00	207.58



Internet Services

Services Forecast

The Services Forecast Report predicts future performance statistics for services associated with a given customer based on the previous 30 days of data. Each list of services is sorted by greatest rate of projected increase (decrease for throughput). By selecting a particular service, the user can see the baseline average and 30, 60 and 90 day forecast of the metric, on the Forecast tab and the data used to calculate the forecast on the History tab.

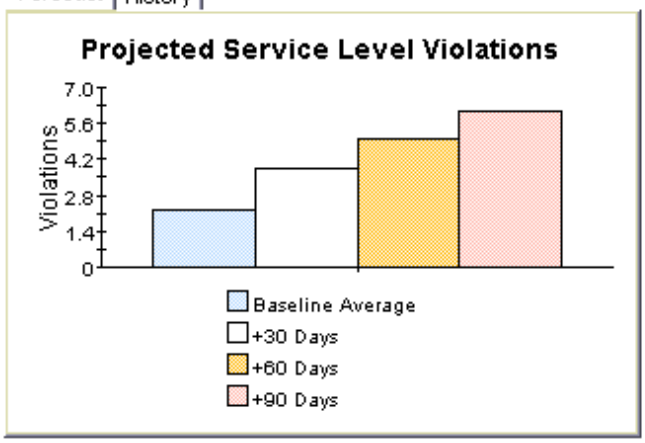
Customer

ACME
Internet Services, Ltd.
Web Monitoring Corp.

Service Level Violations

Service	Baseline Average	90 Day Forecast
WINSAT5 FTP	2.20	6.08
ACME DNS	6.27	14.63
ACME HTTP2	7.76	11.48
ACME DHCP	75.88	110.64
ACME HTTP1	838.22	1,116.62
ACME ICMP	0.00	0.00
ACME ODBC	0.00	0.00
Smith DHCP	0.00	0.00

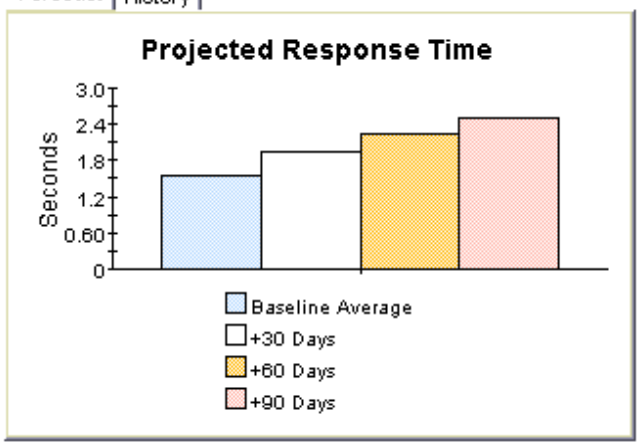
Forecast | History



Response Time

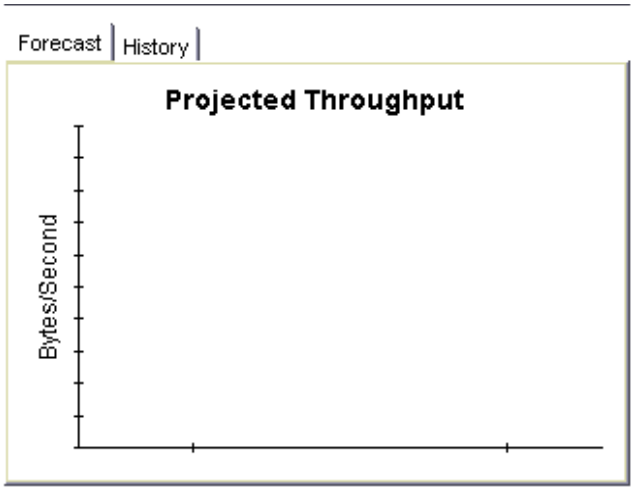
Service	Baseline Average	90 Day Forecast
WINSAT5 FTP	1.54	2.52
ACME DNS	0.49	0.78
ACME HTTP2	18.04	28.43
Smith DHCP	0.95	1.47
ACME HTTP1	17.72	24.25
ACME DHCP	0.77	1.02
ACME ODBC		
ACME ICMP	0.03	0.02

Forecast | History



Throughput

Service	Baseline Average	90 Day Forecast
ACME DNS		
ACME ODBC		
Smith DHCP	0.57	0.63
ACME HTTP2	4.20	5.38
ACME DHCP	0.85	1.09
ACME HTTP1	4.61	6.40
ACME ICMP	0.29	0.50
WINSAT5 FTP	114.00	207.58



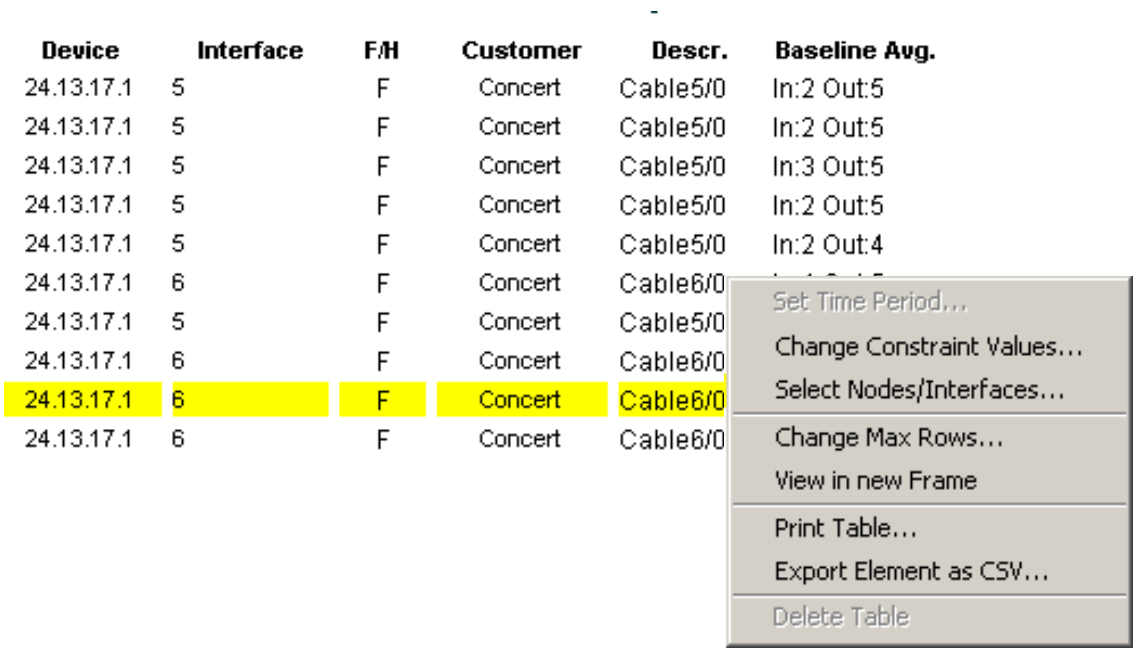
8

Editing Tables and Graphs

Any table or graph can be viewed in several ways. While the default view is usually adequate, you can easily change to a different view. If you are using 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.



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.

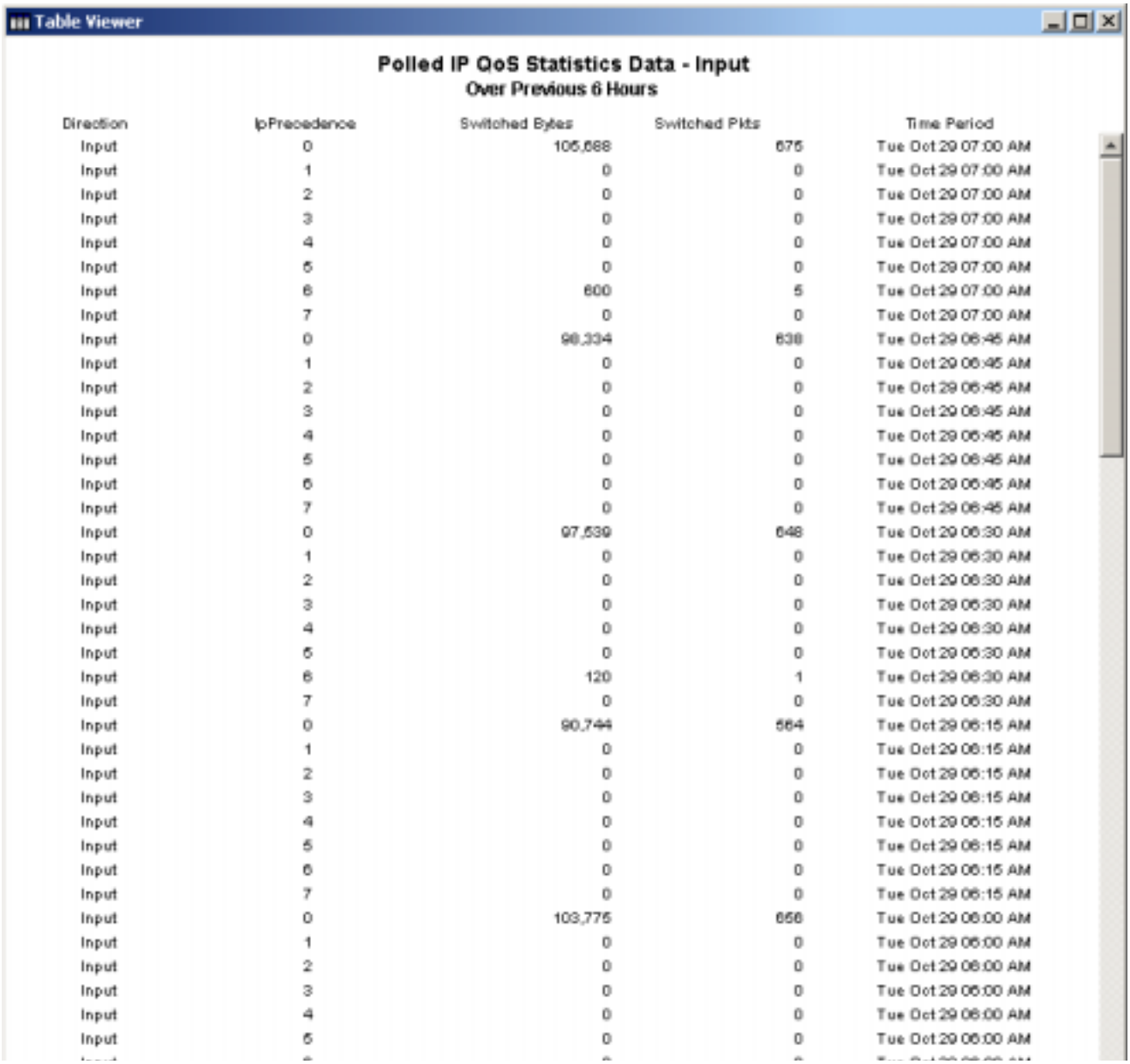


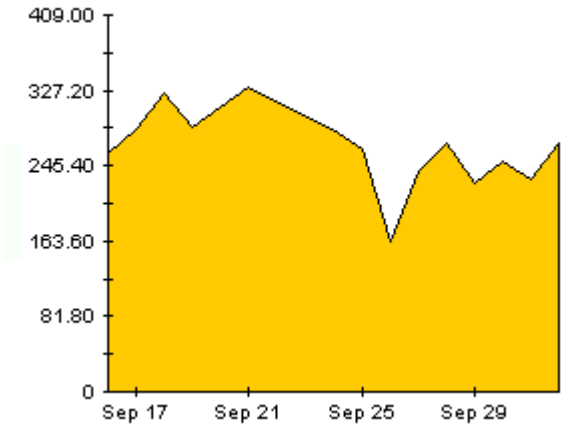
Table Viewer

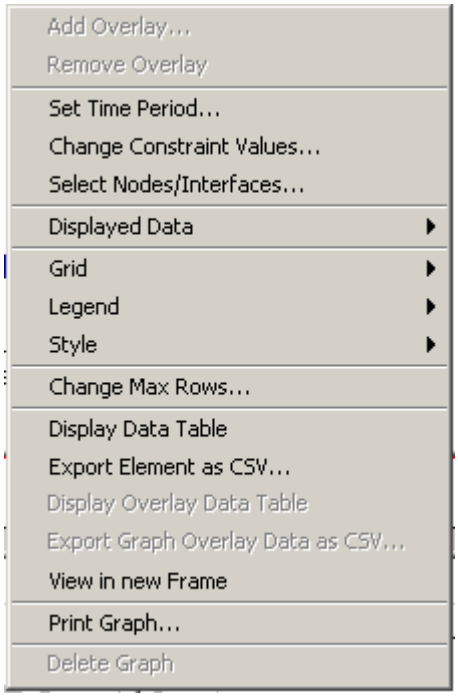
Polled IP QoS Statistics Data - Input
Over Previous 6 Hours

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

View Options for Graphs

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





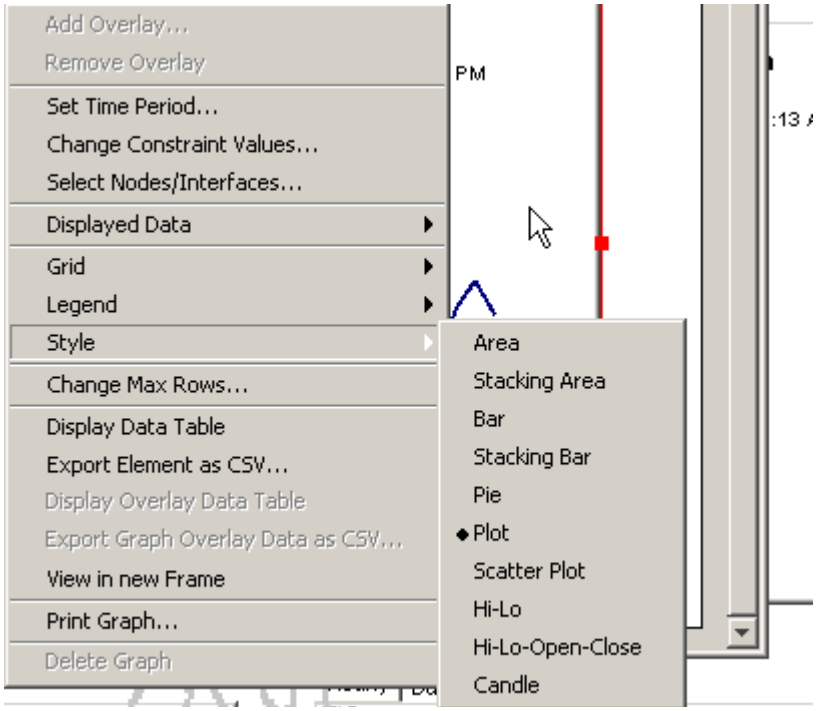
The following table provides details about each option.

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.

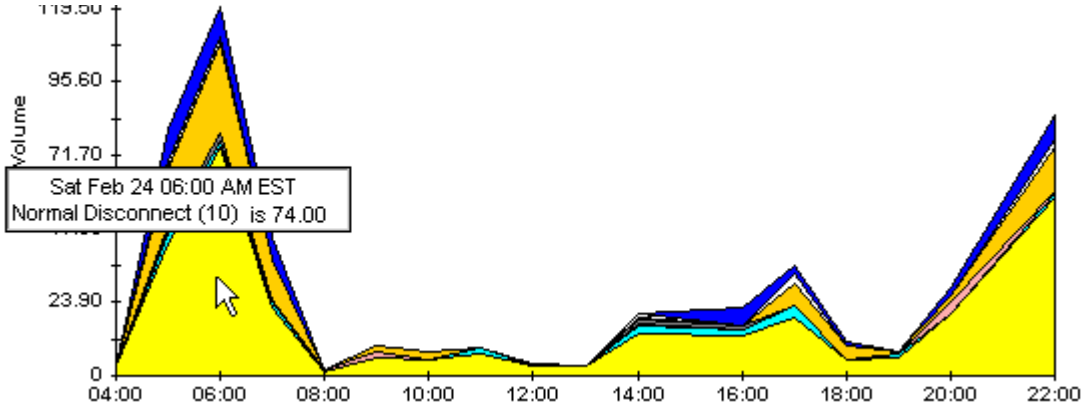
Style Options

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



Style > Area

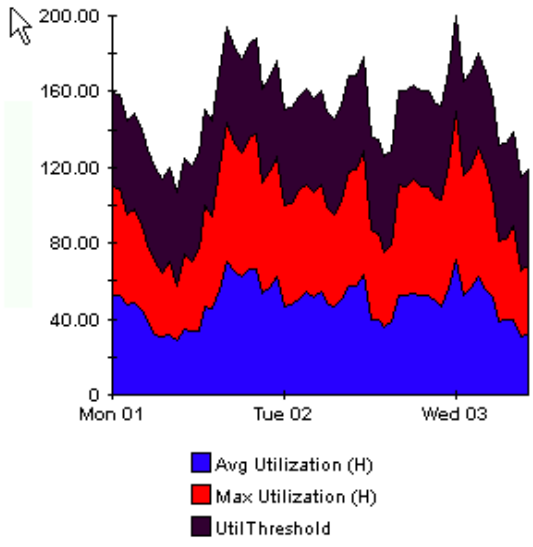
The plot or bar chart changes to an area graph. While relative values and total values are easy to view in this format, absolute values for smaller data types may be hard to see. Click anywhere within a band of color to display the exact value for that location



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.

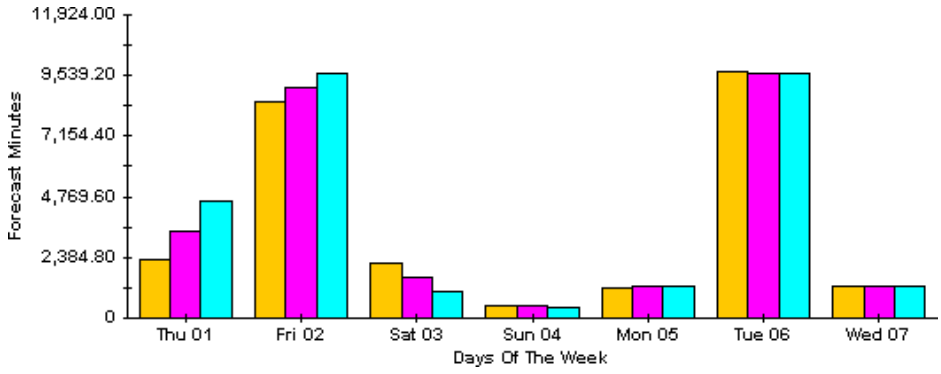
Style > Stacking Area

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



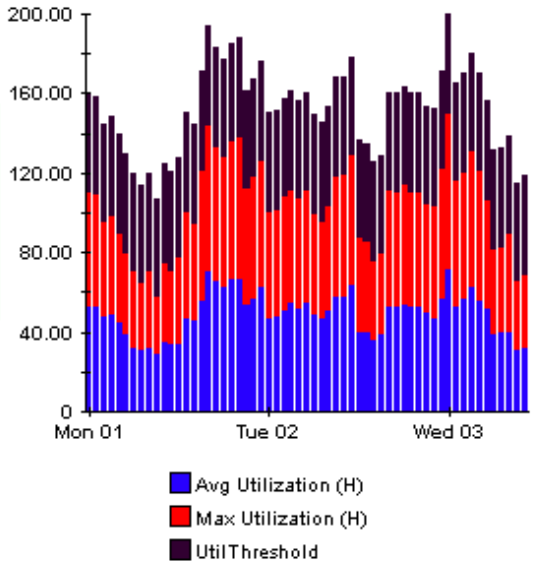
Style > Bar

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.



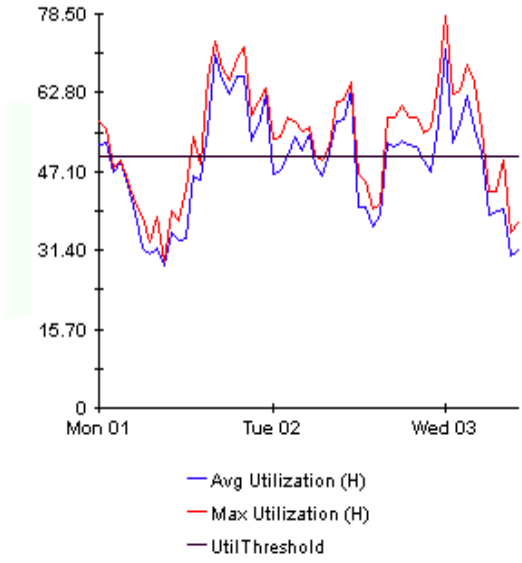
Style > Stacking Bar

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.



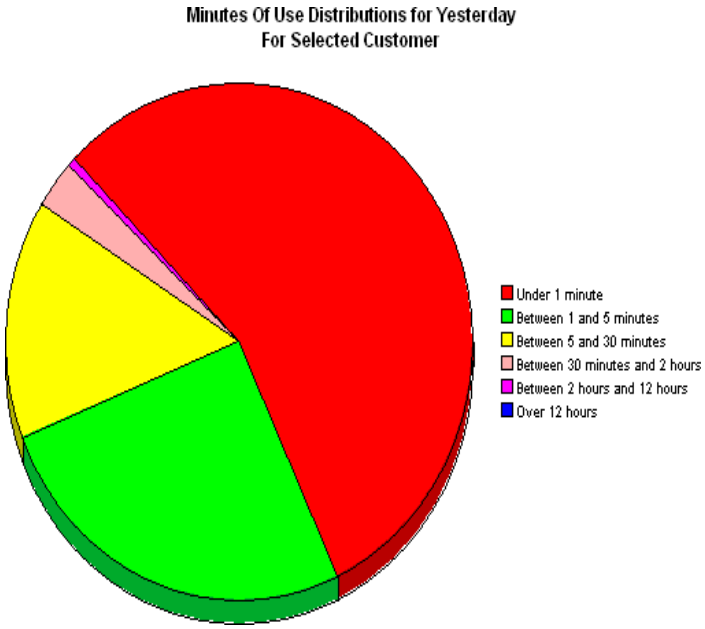
Style > Plot

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

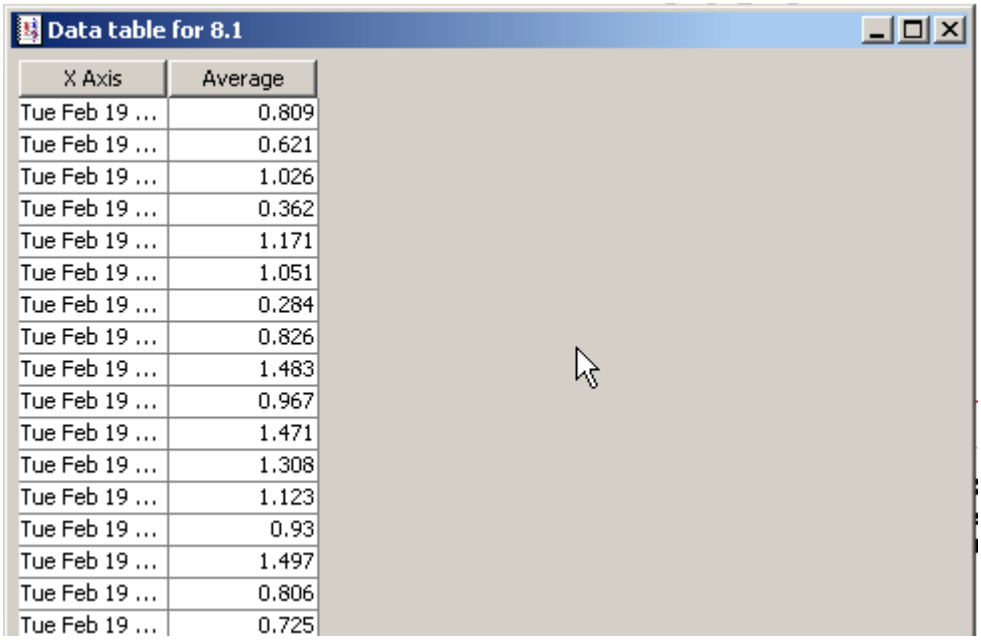
An area graph becomes a pie chart. Bands in an area graph convert to slices of a pie and the pie constitutes a 24-hour period. This view is helpful when a small number of data values are represented and you are looking at data for one day.



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

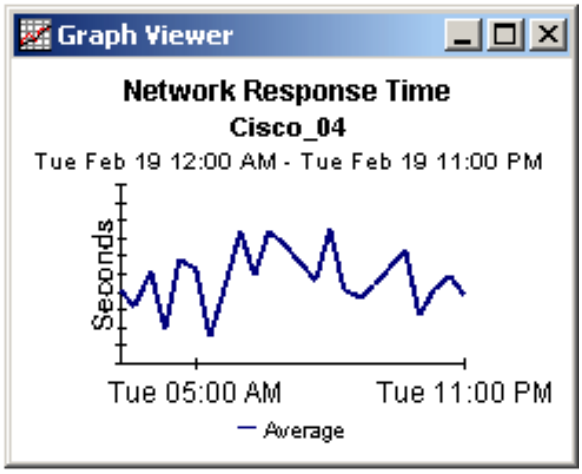
Display Data Table

This option changes a graph into a spreadsheet.



View in New Frame

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



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