Application Server Report Pack

Software Version: 1.40

HP Performance Insight 5.40

User Guide

February 2009

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Contents

1 Overview

This chapter covers the following topics:

Performance Insight and Application Server Reporting

HP Performance Insight collects data from many sources, performs in-depth trend analysis, maintains performance baselines, and provide users with convenient, web-based reporting. Following is a partial list of product features:

- Distributed architecture
- Easy to scale (supports data collection from thousands of agents)
- CODA/PA agent support
- Multi-company security model
- Data warehousing
- Near Real Time reporting
- Forecasting
- Extensive aggregation (by day, week, month; by location, by customer)
- Thresholding and alerting
- Easy identification of bottlenecks
- Easy assessment of capacity trends
- Accurate and timely documentation for management
- Integration with NNM and HP Operations/OM

The Application Server Report Pack monitors the performance of BEA WebLogic servers and IBM WebSphere servers. You can use the reports in this package to:

- Verify that a server is executing requests
- Monitor availability
- Compare availability to the transaction rate

- Measure EJB pool utilization
- Measure connection pool utilization
- Measure servlet request rate
- Measure servlet response time

Version 1.40 of the Application Server Report Pack requires Performance Insight 5.40. You cannot install the latest version of the report pack on earlier version of Performance Insight.

Enhancements in Version 1.40

Version 1.40 includes some defect fixes. For details about defect fixes in this release and the enhancements that were made to previous releases, see Appendix A, Product History.

SPIs and Datapipes

In order to use this report pack, you must install one of the following Smart Plug-ins (SPIs) on each application server you want to monitor:

- HP Operations Manager (OM) SPI for BEA WebLogic Server
- HP Operations Manager (OM) SPI for WebSphere Application Server

When you install the Application Server Report Pack, you must install at least one of the following datapipes:

- AppServer WebLogic SPI Datapipe 1.20
- AppServer WebSphere SPI Datapipe 1.30

Both datapipes have the same collection interval, 45 minutes, and both datapipes collect data from EPC, the Embedded Performance Component of HP Operations/OM.

Packages and Reports

The Application Server Report Pack includes a main package and two sub-packages. Reports in the main package are generic, while reports in the sub-packages are customized for the brand. The following table provides a list of the reports in each package.

Package	Reports
Main/Generic	• Server Availability — Throughput • EJB Pool Utilization • JDBC Throughput — Utilization • Near Real Time Server Availability — Throughput • Servlet Request Rate — Response Time
WebLogic	• EJB Cache Utilization • EJB Transactions • Execute Queue Throughput — Utilization • JMS Throughput — Utilization • Near Real Time Execute Queue Throughput — Utilization • Server Transaction Rollback

Package	Reports
WebSphere	• EJB Load-Stores Rate • EJB Method Calls Rate • EJB Top 20 • JDBC Connection Pool Details • Servlet Sessions • Thread Pool Activity • Transaction Throughput

Ways to Customize Reports

You can change the contents of reports by applying group filters, by editing parameters, and by changing view options for tables and graphs. Although group filters are usually used by service providers to produce customer-specific reports, anyone can edit a constraint or modify the look of a table or graph. For details about table and graph view options, see Appendix B, Editing Tables and Graphs.

Group Filters

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

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

For more information about how to create filters for group accounts, refer to the *PI Administration Guide*.

Editing Parameters

When you edit a parameter, you apply a constraint that eliminates the data you are not interested in seeing. For example, if you edit the Customer parameter, data for all customers except the customer you typed in the Customer field drops from the report.

You can apply multiple constraints at once. Application Server supports these parameters:

- Customer
- Device
- Location
- Vendor
- Server Name

If you are viewing the report on the web, edit parameters by clicking the edit parameters icon at the bottom right-hand corner of the report. When the Edit Parameters window opens, enter the constraint in the field and click **Submit.**

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

Sources for Additional Information

The demo package that comes with Application Server contains a sample of each report in the package. If you have access to the demo package and you want to know what fully-populated reports look like, install the demo package. Like real reports, demo reports are interactive. Unlike real reports, demo reports are static.

The following documents are related to this manual:

- *Application Server Report Pack Release Notes*
- *AppServer WebLogic SPI Datapipe Release Notes*
- *AppServer WebSphere SPI Datapipe Release Notes*
- *Common Property Tables User Guide*
- *Thresholds Module User Guide*
- *PI Report Packs, Version 14.00, CD-ROM Release Notes, February 2009*

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

http://h20230.www2.hp.com/selfsolve/manuals

User guides for the core product are listed under **Performance Insight**. User guides for PI report packs and datapipes are listed under **Performance Insight Report Packs**. Each manual indicates a date. If a manual is revised and reposted, the date will change. Since we post revised manuals on a regular basis, you should compare the date on your PDF to the date of the PDF on the web and download the web edition if it is newer.

2 Upgrading the Report Pack

This chapter covers the following topics:

- Guidelines for a Smooth Upgrade
- Upgrading to Version 1.40
- Package Removal

If you are installing the Application Server Report Pack for the first time, this chapter does not apply to you. See Chapter 3, Installing the Report Pack.

Guidelines for a Smooth Upgrade

When you insert the report pack CD in the CD-ROM drive and launch the package extraction program, the install script extracts every package from the CD and copies the results to the Packages directory on your system. When the extract finishes, the install script prompts you to launch Performance Insight and start Package Manager. Before running Package Manager, review the following guidelines:

- Prerequisites for the Application Server Report Pack
- Upgrading Common Property Tables
- Datapipes and Remote Pollers
- Custom Table Views
- Upgrading Application Server in a Distributed Environment

Prerequisites for the Application Server Report Pack

Make sure the following software is already installed before upgrading to version 1.40:

- Performance Insight 5.40
- All service packs available for PI 5.40
- Application Server Report Pack 1.20
- Common Property Tables 3.90

Upgrading Common Property Tables

If you are running an older version of Common Property Tables, you must upgrade that package to version 3.90. If you are not running any version of Common Property Tables, 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. 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 User Guide*.

Datapipes and Remote Pollers

If you uninstall an existing datapipe, the following information is lost:

- Single polling policy for a remote poller
- Cloned polling policies for multiple remote pollers
- Customized polling groups

To prevent this information from being lost, you can use the following commands to export existing polling policy configurations and customized polling groups:

- collection_manager
- group_manager

Exporting Polling Policy Configurations

If your environment contains polling policies for remote pollers, use the collection_manager command to export existing policy configurations to a file.

UNIX: As user trendadm, run the following command:

```
cd $DPIPE_HOME

./bin/collection_manager -export -file /tmp/savePollingPolicy.lst
```

Windows: As Administrator, launch a command window. Navigate to the PI install directory and run the following command:

```
bin\collection_manager -export -file \temp\savePollingPolicy.lst
```

Exporting Polling Group Configurations

If your environment contains customized polling groups, use the group_manager command to export groups to individual .xml files.

UNIX: As user trendadm, run the following command:

```
cd $DPIPE_HOME

./bin/group_manager -export_all -outfile /tmp/savePollingGroups
```

Windows: As Administrator, launch a command window, then navigate to the PI install directory and run the following command:

```
bin\group_manager -export_all -outfile \temp\savePollingGroups
```

Custom Table Views

If you are using table views you created yourself, the views you created may interfere with the report pack upgrade, causing the upgrade to fail. Whether or not your views interfere with the upgrade process depends on how you created them. If you used SQL to create them, the upgrade will succeed, however, your custom views will not be available once the upgrade is complete. If you used Datapipe Manager to create them, the upgrade is likely to fail. To prevent the upgrade from failing, delete custom table views before you upgrade the report pack, then recreate those views after the report pack is upgraded.

Upgrading Application Server in a Distributed Environment

Following is an overview of the installation procedure for a distributed environment:

1. Disable trendcopy on the central server.
2. For the central server:
   - Upgrade to Common Property Tables 3.90 and deploy reports
   - Upgrade to Application Server 1.40; deploy reports
3. For each satellite server:
   - Upgrade to Common Property Tables 3.90
   - Upgrade to Application Server 1.40
   - Remove AppServer WebSphere SPI Datapipe 1.20
   - Install AppServer WebSphere SPI Datapipe 1.30
4. Re-enable trendcopy on the central server.
5. Reconfigure your central and satellite servers.

When Application Server 1.20 was installed, the person who installed that version had to set up connections with satellite server databases, configure trendcopy commands, and switch off aggregations above the hourly level at each satellite server. If you just upgraded to PI 5.40, server configuration changes that were made when Application Server 1.40 was installed must be redone. For details, see Chapter 4, Setting Up a Distributed System.

Upgrading to Version 1.40

Perform the following tasks to upgrade from any earlier version to version 1.40:

- Task 1: Stop OVPI Timer and extract packages from the report pack CD
- Task 2: Upgrade to Common Property Tables 3.90
- Task 3: Install the upgrade packages
- Task 4: Remove AppServer WebSphere SPI Datapipe 1.20 (if installed)
- Task 5: Install AppServer WebSphere SPI Datapipe 1.30
- Task 6: Restart OVPI Timer

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

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

   On Windows, do the following:

   a. Select **Control Panel > Administrative Tools > Services**.

   b. Select OVPI Timer from the list of services.

   c. From the Action menu, select **Stop**.

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

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

   Sun: **`sh /etc/init.d/ovpi_timer stop`**
3. Insert the report pack CD in the CD-ROM drive. On Windows, a Main Menu opens automatically; on UNIX, mount the CD if the CD does not mount automatically, navigate to the top level directory on the CD, and run the **`./setup`** command.
4. Type **1** in the choice field and press **Enter**. The install script displays a percentage complete bar. When the copy is complete, the install script starts Package Manager. The Package Manager welcome window opens.

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

- ApplicationServer.ap
- ApplicationServer_Threshold.ap
- ApplicationServer_WebLogic.ap
- ApplicationServer_WebSphere.ap
- ApplicationServer_Demo.ap
- UPGRADE_ApplicationServer_to_14.ap
- UPGRADE_ApplicationServer_WebLogic_to_12.ap
- UPGRADE_ApplicationServer_WebSphere_to_12.ap

Task 2: Upgrade to Common Property Tables 3.90

Follow 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. If you do not deploy reports, you will not deploy the change forms that come with Common Property Tables.
- When the install finishes, click **Done** to return to the Management Console.

If you need more help with this task, refer to the *Common Property Tables User Guide*.

Task 3: Install the upgrade packages

1. From the Management Console, select **Tools > Package Manager**. The Package Manager welcome window opens.
2. Click **Next**. The Package Location window opens.

3 Click **Install**.

4 Click **Next**. The Report Deployment window opens. Accept the defaults for Deploy Reports, Application Server, and Port. Type your user name and password for the PI Application Server.

5 Click **Next**. The Package Selection window opens.

6 Click the check box next to the following packages (depending on which packages you are upgrading):

ApplicationServer_Upgrade_to_14

ApplicationServer_WebLogic_Upgrade_to_12

ApplicationServer_WebSphere_Upgrade_to_12

7 Click **Next.** The Type Discovery window opens. Disable the default.

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

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

10 Click **Done**.

Do not be surprised if the UPGRADE packages you just installed disappear from view. Package Manager will display what you just installed as *Application Server Report Pack 1.40*. This is not an error.

Task 4: Remove AppServer WebSphere SPI Datapipe 1.20 (if installed)

The AppServer WebSphere SPI Datapipe cannot be upgraded. You must remove AppServer WebSphere SPI Datapipe 1.20, then install AppServer WebSphere SPI Datapipe 1.30. Start Package Manager and follow the on-screen instructions for package removal. When Package Manager tells you that removal is complete, click **Done** to return to the Management Console.

Task 5: Install AppServer WebSphere SPI Datapipe 1.30

1 Start Package Manager. The Package Manager welcome window opens.

2 Click **Next.** The Package Location window opens.

3 Click **Install**.

4 Click **Next.** The Report Deployment window opens; disable the default for Deploy Reports.

5 Click **Next.** The Package Selection window opens.

6 Click the check box next to the following package:

AppServer WebSphere SPI Datapipe 1.3

7 Click **Next.** The Type Discovery window opens.

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

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

10 Click **Done**.

Task 6: Restart OVPI Timer

On Windows, do the following:

a Select **Control Panel > Administrative Tools > Services**.

b Select OVPI Timer from the list of services.

c From the Action menu, select **Start**.

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

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

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

Post-Upgrade Steps

Reconfigure any polling policies and customized group definitions that need to be restored. Do not re-import the configurations you exported. Since the old datapipe may be incompatible with the new datapipe you just installed, re-importing the configurations you exported could lead to data corruption. In addition, if you removed any custom table views before upgrading the report pack, you can recreate those custom table views now.

Package Removal

Follow these steps to uninstall the Application Server Report Pack. Removing this package automatically removes the associated datapipe and sub-packages. You can also use this procedure to remove a single sub-package only.

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, do one of the following:

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

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

3 Start Package Manager. The Package Manager welcome window opens.

4 Click **Next.** The Package Location window opens.

5 Click **Uninstall.**

6 Click **Next.** The Report Undeployment window opens.

7 If Application Server reports were deployed from this server, accept the defaults for Undeploy Reports, Application Server Name, and Port. If Application Server reports were **not** deployed from this server, clear the check box and skip to step 9.

8 Type the username and password for the PI Application Server.

9 Click **Next.** The Package Selection window opens.

10 Click the check boxes next to the following packages, if they appear in the list:

   a *Application Server 1.4*

   b *ApplicationServer_WebLogic 1.2*

   c *ApplicationServer_WebSphere 1.2*

   d *Application Server Thresholds 1.1*

   e *Application Server Demo 1.1*

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.

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

   UNIX: As root, do one of the following:

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

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

15 Restart OVPI Timer.

   On Windows, do the following:

   a Select **Control Panel > Administrative Tools > Services**.

   b Select OVPI Timer from the list of services.

   c From the Action menu, select **Start**.

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

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

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

3 Installing the Report Pack

This chapter covers the following topics:

- Guidelines for a Smooth Installation
- Installing Application Server Report Pack 1.40
- Accessing Deployed Reports
- Seeing Performance Data in Reports
- Package Removal

If you have already installed an earlier version of the Application Server Report Pack, go to Chapter 2, Upgrading the Report Pack, for information on how to upgrade your software.

Guidelines for a Smooth Installation

A PI reporting solution has two ingredients, a report pack and a datapipe. Some reporting solutions include multiple datapipes. When you install the datapipe, you configure PI to collect performance data at a specific interval. When you install the report pack, you configure PI to summarize and aggregate the data collected by the datapipe.

The report pack CD contains report packs, datapipes, shared packages, and documentation. If you, or someone else, extracted packages from the report pack CD, every package, including the Application Server Report Pack, was copied to the Packages directory on your system and is ready to install. If you have not extracted packages from the report pack CD, follow the package extract procedure later in this chapter.

HP Operations/OM Prerequisites

The HP Operations/OM prerequisites are:

- HP Operations for Windows 7.21
- Operations Manager for UNIX 8.10

The application servers monitored by HP Operations/OM must have one of the following SPIs:

- OM Smart Plug-in for BEA WebLogic Server (WebLogic SPI)
  - for Windows, version B.02.09
  - for UNIX, version A.03.50
- OM Smart Plug-in for IBM WebSphere Server (WebSphere SPI)
  - for Windows, version B.02.09
  - for UNIX, version A.03.50

PI Prerequisites

- PI 5.40
- Any and all service packs available for PI 5.40
- Common Property Tables 3.90 or higher
- OVPA Collection Datapipe 1.10

Upgrading Common Property Tables

If you are running an older version of Common Property Tables, you must upgrade that package to version 3.90 or higher. If you are not running any version of Common Property Tables, Package Manager will install the latest version of Common Property Tables for you, automatically.

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

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 PI 5.40 and all available service packs for the installed version of PI.
2. On the central server:
   a. Disable trendcopy.
   b. Upgrade Common Property Tables to version 3.90 or higher.
   c. Install Application Server Report Pack 1.40 and deploy reports.
   d. Install the Thresholds sub-package.
3. For each satellite server:
   a. Upgrade Common Property Tables to version 3.90 or higher.
   b. Install these packages:
      - Application Server Report Pack 1.40
      - One or both of the following sub-packages, depending on the server type(s) you want to monitor.
        - Application Server WebLogic sub-package 1.20
        - Application Server WebSphere sub-package 1.20
      - One or both of the following datapipes, depending on the server type(s) you want to monitor.
        - AppServer WebLogicSPI Datapipe 1.20
        - AppServer WebSphereSPI Datapipe 1.30

4 Re-enable trendcopy on the central server.

When installation is complete, you must set up connections with satellite server databases, configure trendcopy pull commands, and switch off aggregations at each satellite server. These steps are covered in Chapter 4, Setting Up a Distributed System.

Installing Application Server Report Pack 1.40

This section covers the following tasks:

- Task 1: Extract packages from the report pack CD
- Task 2: If necessary, upgrade Common Property Tables
- Task 3: Install these packages:
  - Application Server Report Pack
  - One or both of the following sub-packages:
    - Application Server WebLogic sub-package
    - Application Server WebSphere sub-package
  - One or both of the following datapipes:
    - AppServer WebLogicSPI Datapipe
    - AppServer WebSphereSPI Datapipe

Task 1: Extract packages from the report pack 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/init.d/ovpi_timer stop`**

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

3 Insert the report pack CD in the CD-ROM drive. 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 PI 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 Application Server folder:

- ApplicationServer.ap
- ApplicationServer_Threshold.ap
- ApplicationServer_WebLogic.ap
- ApplicationServer_WebSphere.ap
- ApplicationServer_Demo.ap

- UPGRADE_ApplicationServer_to_14.ap
- UPGRADE_ApplicationServer_WebLogic_to_12.ap
- UPGRADE_ApplicationServer_WebSphere_to_12.ap

You can ignore the upgrade packages. Installing the demo package is optional. You may install the demo package and only the demo package, or you can install the demo package along with everything else (except the upgrade packages).

Task 2: Upgrade to Common Property Tables 3.90

When performing this upgrade, observe these rules:

- Do not install anything else at the same time; install the upgrade package and *only* the upgrade package.
- When prompted to accept or disable the option to Deploy Reports, accept the default. If you do not deploy reports, you will not have access to the forms that come with Common Property Tables.
- 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 User Guide*.

Task 3: Install the report pack and the datapipe

1. From the Management Console select **Tools > Package Manager**. The Package Manager welcome window opens.
2. Click **Next.** The Package Location window opens.
3. Click **Install**. Approve the default installation directory or use the browse feature to select a different directory if necessary.
4. Click **Next.** The Report Deployment window opens. Accept the default for Deploy Reports; accept the default for application server name and port. Type your username and password for the PI Application Server.
5. Click **Next.** The Package Selection window opens.
6. Click the check box next to the following packages:
   a. *ApplicationServer 1.4*
   b. One or both of the following:
      – *ApplicationServer_WebLogic 1.2*
      – *ApplicationServer_WebSphere 1.2*
   c. One or both of the following:
      – *AppServerWebLogicSPI_Datapipe 1.2*
      – *AppServerWebSphereSPI_Datapipe 1.3*
   d. *ApplicationServer_Thresholds 1.1* (optional)
   e. *ApplicationServer_Demo* (optional)
7. Click **Next.** The Type Discovery window opens.

8 Disable the default to run Type Discovery immediately after package installation.

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

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

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

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

12 Restart OVPI Timer.

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

UNIX: As root, type one of the following:

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

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

Accessing Deployed Reports

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

- PI client applications
- Web browser

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

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

Seeing Performance Data in Reports

Some reports populate with data sooner than others. The first report to populate with data are the Near Real Time (NRT) reports. You will begin to see data in this report immediately after the first data collection completes. Any report that begins with an analysis of yesterday's performance will need at least one full day's worth of data before results are viewable.

All the reports other than the NRT reports have graphs that display data on an hourly, daily, and monthly basis. If the data you collected includes data for any part of the previous calendar month, the monthly graphs 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 the next month.

Package Removal

Follow these steps to uninstall the Application Server Report Pack. Removing this package automatically removes the associated datapipe and sub-packages. You can also use this procedure to remove a single sub-package only.

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, do one of the following:

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

   Sun: **`sh /etc/init.d/ovpi_timer stop`**
3. Start Package Manager. The Package Manager welcome window opens.
4. Click **Next.** The Package Location window opens.
5. Click **Uninstall.**
6. Click **Next.** The Report Undeployment window opens.
7. If Application Server reports were deployed from this server, accept the defaults for Undeploy Reports, Application Server Name, and Port. If Application Server reports were **not** deployed from this server, clear the check box and skip to step 9.
8. Type the username and password for the PI Application Server.
9. Click **Next.** The Package Selection window opens.
10. Click the check boxes next to the following packages, if they appear in the list:
    a. *Application Server 1.4*
    b. *ApplicationServer_WebLogic 1.2*
    c. *ApplicationServer_WebSphere 1.2*
    d. *Application Server Thresholds 1.1*
    e. *Application Server Demo*
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.

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

    UNIX: As root, do one of the following:

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

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

4 Setting Up a Distributed System

These are the steps to follow when setting up a distributed system:

- Decide whether or not you want local reporting
- Install the right set of packages on each server (a central server that is not polling will not need datapipes; the satellite servers will need datapipes)
- Verify that the system clocks in your environment are synchronized
- Register your satellite servers
- If you are not copying rate data to the central server, enable LIR on the central server
- If you enable LIR, add LIR mapping with the time type set to rate
- Verify that you have all the copy policies you need
- Configure the central server (manual edits to trendtimer.sched and .pro files)
- Configure each satellite server (manual edits to trendtimer.sched and .pro files)

When you set up a distributed system, you can have local reporting or you can have centralized reporting. If you want local reporting, you need to deploy reports when you install the report pack on each satellite server, and you also need to allow summarizations to run on each satellite server. If you do not want local reporting, then you do not need to deploy reports when you install a report pack on a satellite server, and you can disable the scripts that run summarizations on each satellite server.

Before Location Independent Reporting (LIR) was available, our recommendation to anyone setting up a distributed system was to deploy reports on satellite servers, keep rate data on satellite servers, copy hourly data to the central server, and disable summarizations above the hourly level on satellite servers. The advantage to this approach was that it kept a large volume of rate data off the network and it decreased the processing load on the central server. The disadvantage is that the central server could not display a Near Real Time (NRT) report. The only NRT report was a local NRT report, on a satellite server. LIR overcomes this disadvantage. If you enable LIR, you can open an NRT report on the central server and drill-down on table selections. The selections you make cause the central server to query a satellite server for locally aggregated data. Of course, if you would rather copy rate data to the central server, you can. If you do that, then enabling LIR is not necessary.

Several report packs in the October 2007 release include a copy policy enhancement based on a copy policy import file. This file contains a list of data tables. When you install a report pack that has this file, the core product will generate copy policies automatically. As a result, you do not need to use the Managment Console to create copy policies. Instead, your only task related to copy policies is to verify that the copy policies you need already exist.

Because you are likely to have multiple satellite servers, we designed the hourly process files to be satellite-server friendly. This means that most of the time, most of the defaults are correct. But some defaults will be incorrect, or less than optimal, and to improve performance, you should change them. These manual edits, as well as the other steps listed above, are spelled out in detail below.

Verifying Correct Package Installation

Verify that you have the right packages installed on each server.

Packages on the Central Server

- Application Server Report Pack, with reports deployed
- Common Property Tables, with forms deployed
- ApplicationServer_WebLogic sub-package, with reports deployed
- ApplicationServer_WebSphere sub-package, with reports deployed

Packages on Each Satellite Server

- Application Server Report Pack
- Common Property Tables
- ApplicationServer_WebLogic sub-package and AppServerWebLogicSPI_Datapipe, *or*
- ApplicationServer_WebSphere sub-package and AppServerWebSphereSPI_Datapipe

Typically, the central server does not poll. If you want the central server in your system to poll, install a datapipe on the central server. If you want to view reports on satellite servers (local reporting), accept the Deploy Reports option when you install report packs at each satellite server. If central server reporting is the only reporting you want, you do not need to deploy reports and forms when you install report packs at satellite servers.

Configuring the Central Server

To configure the central server, perform the following tasks:

- Task 1: Register the satellite server by setting the database role
- Task 2: If you are not copying rate data to the central server, enable LIR.
- Task 3: If you enable LIR, add LIR mappings
- Task 4: Verify that you have the copy policies you want.

For more information about LIR and copy policies, refer to the *HP Software Performance Insight Administration Guide*.

Task 1: Register the satellite server by setting the database role.

1. Start the Management Console (log on with Administrator privileges).
2. Click the **Systems** icon in the navigation pane.
3. Navigate to the OVPI Databases folder and select the database system.
4. Click **Database Properties**.
5. From the Database Role list, select the Satellite Server role.
6. Enter any information necessary to configure the Satellite Server role.

To add a new database reference, you can use the Add Database Reference Wizard in the System and Network Administration application.

Task 2: If you are not copying rate data from satellie servers to the central, enable LIR.

1. Start the Management Console (log on with Administrator privileges).
2. Click the **Systems** icon in the navigation pane.
3. Navigate to the OVPI Databases folder and select the central server.
4. Click **LIR Configuration**.
5. Select the **LIR enabled** check box.

Task 3: If you enable LIR, add LIR mappings.

Configure LIR mappings for the following categories (for the application server and sub-packages you have installed): ApplicationServer, AppServerWebLogic_Reporting, and ApplicationServer_WebSphere.

1. Start the Management Console (log on with Administrator privileges).
2. Click the **Systems** icon in the navigation pane.
3. Navigate to the OVPI Databases folder and select the central server.
4. Click **LIR Configuration**.
5. Click **Add Mapping**.
6. From the Select Satellite Server list, select a satellite server to which to add a mapping.
7. Select the **Category** data table option.
8. Select **ApplicationServer** from the drop down list.
9. Select the **`rate`** data type.
10. Click **Add to List**.
11. To add additional LIR mappings for the WebLogic and/or WebSphere sub-packages, click **Add Mapping** and repeat step 6 through step 10.
12. Click **OK**.
13. Click **Apply**.

A copy policy is automatically generated for the hourly data and for each LIR mapping that you add. The data type selected when adding an LIR mapping (in step 9 above) determines the type of data copied (defined in the generated copy policy). The type of data copied (defined in the generated copy policy) is one greater than the data type selected in the LIR mapping. For example, if you select an hourly data type, a daily data copy policy is generated.

Task 4: Verify that you have the copy policies you want.

Verify that a copy policy has been generated for the following tables and that the copy type is set correctly (to Property and Data):

1. Start the Management Console (log on with Administrator privileges).
2. Click the **Copy Policy** icon in the navigation pane to start the Copy Policy Manager.

3 Find the following tables (for the application server and sub-packages you have installed) and verify the copy type is set to Property and Data for each table:

Application Server	WebLogic Sub-package	WebSphere Sub-package
SHAPPSRVR_SERVER	SHWLS_SERVER	SHWBS_SERVER
SHAPPSRVR_EJB	SHWLS_EJB	SHWBS_EJB
SHAPPSRVR_SERVLET	SHWLS_JMS	SHWBS_JDBC
SHAPPSRVR_JDBC	SHWLS_QUEUE	SHWBS_THREAD
SHAPPSRVR_JDBC_SERVER		SHWBS_EJB_SERVER
		SHWBS_JDBC_SERVER
		SHWBS_THREAD_SERVER

If a copy policy has not been generated for a table, do the following:

1 Click the **New Copy Policy** icon or select **File > New Copy Policy** from the Copy Policy Manager. The Copy Policy Wizard displays.

2 Click **Next**. The Satellite Server and Copy Policy Selection Page displays.

3 Select a satellite server from the pull down list. This is the satellite server from which data is copied to the central server.

4 Select **Single Table** and select the table from the pull down list.

5 Click **Next**. The Copy Type Selection Page displays.

6 Select **Property and Data**.

7 Click **Next**. The Summary page displays.

8 Verify the information in the summary window. If the information is not correct, you can modify it by clickin **Back**..

9 Click **Finish**.

10 Repeat step 1 - step 9 for all missing tables.

If only the copy type is not set to Property and Data, do the following:

1 Double-click the copy policy.

2 Select the **Property and Data** copy type.

3 Click **OK**.

Configuring Satellite Servers

You probably want the satellite server to maintain NRT data, but you do not want it to run aggregations at the hourly level or above. Those aggregations can be handled by the central server. To disable the higher-level aggregations on the satellite server, comment out the aggregation commands in the trendtimer.sched file. You also need to enable copy commands that are disabled by default. These copy commands appear in hourly process files in the Scripts directory.

Follow these steps to configure a satellite server:

1. Disable aggregations at the hourly level and above.
   a. Open the `{DPIPE_HOME}/lib/trendtimer.sched` file (where *`{DPIPE_HOME}`* is the directory in which PI is installed)
   b. Find and comment out the following lines:

```
24:00+3:00 - - {DPIPE_HOME}/bin/trend_proc -f
{DPIPE_HOME}/scripts/AppServer_Reporting_DMF.pro

24:00+3:00 - - {DPIPE_HOME}/bin/trend_proc -f
{DPIPE_HOME}/scripts/WLS_Reporting_DMF.pro

24:00+3:00 - - {DPIPE_HOME}/bin/trend_proc -f
{DPIPE_HOME}/scripts/WBS_Reporting_DMF.pro
```

2. Edit copy commands in hourly process files for the main package and each sub-package that you installed.
   a. Modify the *`{DPIPE_HOME}`*`/scripts/AppSrvr_Reporting_Hourly.pro` file (where *`{DPIPE_HOME}`* is the directory in which PI is installed):
      — Uncomment the DB_1 block, including the begin and end lines.
   b. If you installed the WebLogic sub-package, modify the *`{DPIPE_HOME}`*`/scripts/WLS_Reporting_Hourly.pro` file:
      — Uncomment the DB_1 block, including the begin and end lines.
   c. If you installed the WebSphere sub-package, modify the *`{DPIPE_HOME}`*`/scripts/WBS_Reporting_Hourly.pro` file:
      — Uncomment the WBS_1 block, including the begin and end lines.

5 Thresholds for HP Operations/OM

This chapter covers the following topics:

- Modifying Thresholds
- Update Server Details
- Integration with HP Operations/OM

Modifying Thresholds

If you install the optional thresholds sub-package (ApplicationServer_Thresholds), the Thresholds Module will monitor your application servers for threshold conditions and send threshold traps to your HP Operations/OM management station as needed.

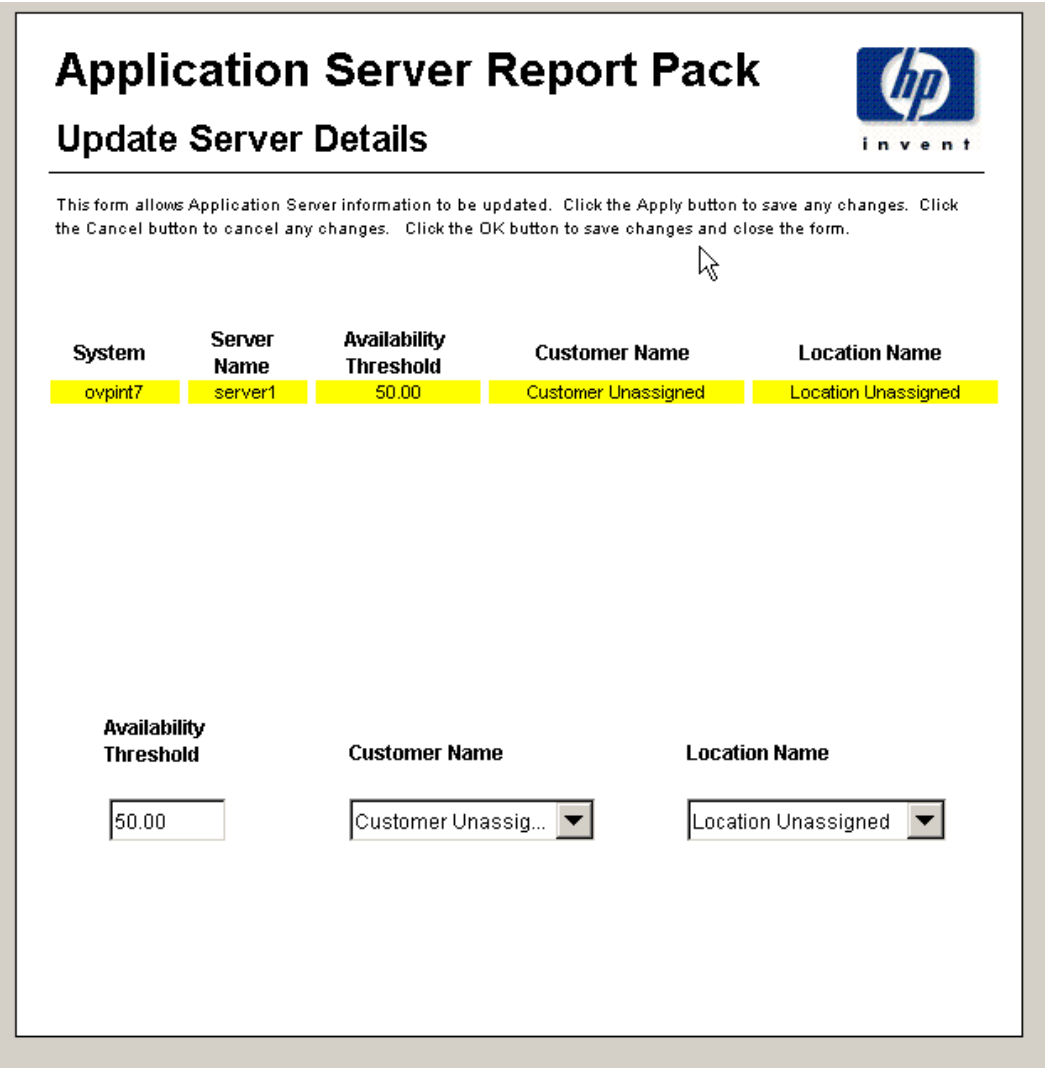
This is the default threshold:

Server availability = 50%

Update Server Details

You can use the Update Server Details form (Figure 1 on page 34) to modify the default threshold and to assign Customer/Location properties.

Figure 1 Update Server Details form



Integration with HP Operations/OM

You can improve your fault isolation and problem diagnosis abilities by integrating the Application Server Report Pack with HP Operations Manager (OM). To do that, install the thresholds sub-package that comes with the report pack. The thresholds sub-package supplies default thresholds to the Thresholds Module. The Thresholds Module uses the defaults to monitor the PI database for threshold conditions. When the Thresholds Module detects a threshold condition, it takes one of several possible actions. The default action is to send breach and clear traps to Network Node Manager (NNM).

Although NNM is the default destination for traps, you can easily configure the Thresholds Module to send traps to HP Operations/OM. From the Management Console, open the SNMP Trap Action Definition form, fill in the necessary information, and save your changes. In addition to using the form to configure a new destination for traps, someone (probably the HP Operations/OM administrator) will need to prepare a trap template definition for HP Operations/OM. The *Thresholds Module User Guide* contains the information you need to prepare the template.

6 Generic Application Server Reports

The generic application server reports provide information that is not specific to the type of server that is being monitored. Each report is summarized below.

Server Availability — Throughput

The server availability chart plots the availability status of the application server on an hourly, daily, and monthly basis. The transaction throughput chart displays the number of transactions processed by the application server per second.

EJB Pool Utilization

This report shows the percentage of EJB pool utilization. When the maximum pool size is reached, the server passivates (transfers from memory to secondary storage) some EJBs (Enterprise Java Beans) that have not been recently used by a client. This could result in performance degradation.

When using the SPI for BEA WebLogic Server, this report is only available if the SPI for BEA WebLogic Server is running on Windows. This report is not available for the SPI for BEA WebLogic Server running on UNIX.

JDBC Throughput — Utilization

This report shows the percentage of available JDBC (Java Database Connectivity) connections in a connection pool (utilization) and the number of clients serviced by this connection pool per second (throughput). Without available connections, the system cannot service requests that require access to a database. If this report indicates that there are not enough available JDBC connections and if the database can support additional connections, the administrator should add more database connections.

Near Real Time Server Availability — Throughput

This report portrays the server status for the last six hours.

Servlet Request Rate — Response Time

The servlet request rate measures the number of requests for a servlet per second. System administrators can analyze this value over time to help with capacity planning. The servlet response time chart shows the average execution time for an individual servlet. Analysis over time will give administrators clear indications of how each servlet is performing under different loads.

Application Server Report Pack

Server Availability - Throughput

This report contains a histogram showing the percentages of uptime on an hourly basis. The availability for the server highlighted in the table is shown in the graph. The table shows the daily average availability. A lower than expected number of measurements may indicate unrecorded system downtime, but it may also reveal issues with the availability monitoring service, which may or may not affect actual availability. The Server transaction throughput report shows the average number of transactions processed per second for each server.

Server Availability - Throughput

Tue, Apr 12, 2005

System Name	Server Name	Avg. Availability	Avg. Transaction Throughput
APPSRVR_01	Server1	45.03	15.65
APPSRVR_02	Server2	65.21	16.51
WEBSPHERE_01	WebSphereServer1	52.26	697.24
WEBSPHERE_02	WebSphereServer2	52.39	740.93

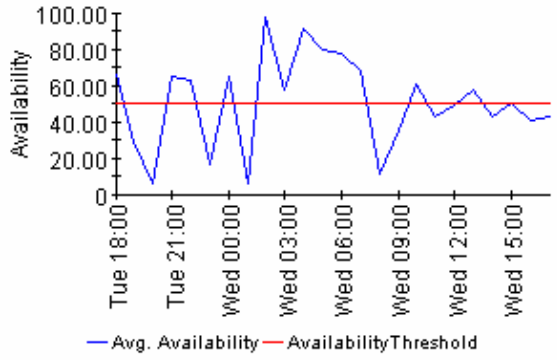
Application Server Details for

APPSRVR_01

Vendor	Location Name	Customer Name	Availability Threshold
WebLogic	Reston-AppSrvr	HP-AppSrvr	50.00

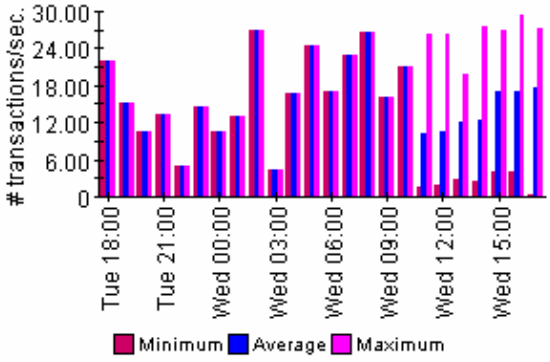
Hourly | Daily | Monthly

Server Availability for
APPSRVR_01
Tue, Apr 12 6:00 PM - Wed, Apr 13 5:00 PM



Hourly | Daily | Monthly

Server Transaction Throughput
for APPSRVR_01
Tue, Apr 12 6:00 PM - Wed, Apr 13 5:00 PM



Application Server Report Pack

EJB Pool Utilization

This report shows the utilization of an EJB pool as a percent of the number of EJB instances configured for the pool on the selected server. The EJBs are sorted based on the highest average pool utilization for yesterday.

EJB Pool Utilization

Tue, Apr 12, 2005

System Name	Server Name	EJB Name	A
WEBSPHERE_02	WebSphereServer2	beanModule,PlantsByWebSphere#PlantsByWebSphereEJB.jar,ejb.stateless,Catalog	
APPSRVR_01	Server1	Server1_Server1EAR_SessionEJB_RecordSessionEJB	
WEBSPHERE_02	WebSphereServer2	beanModule,PlantsByWebSphere#PlantsByWebSphereEJB.jar,ejb.stateless,Mailer	
WEBSPHERE_01	WebSphereServer1	beanModule,PlantsByWebSphere#PlantsByWebSphereEJB.jar,ejb.stateless,Mailer	
WEBSPHERE_01	WebSphereServer1	beanModule,PlantsByWebSphere#PlantsByWebSphereEJB.jar,ejb.stateless,BackOrderStock	
WEBSPHERE_01	WebSphereServer1	beanModule,PlantsByWebSphere#PlantsByWebSphereEJB.jar,ejb.stateless,Catalog	

Application Server Details for

WEBSPHERE_02

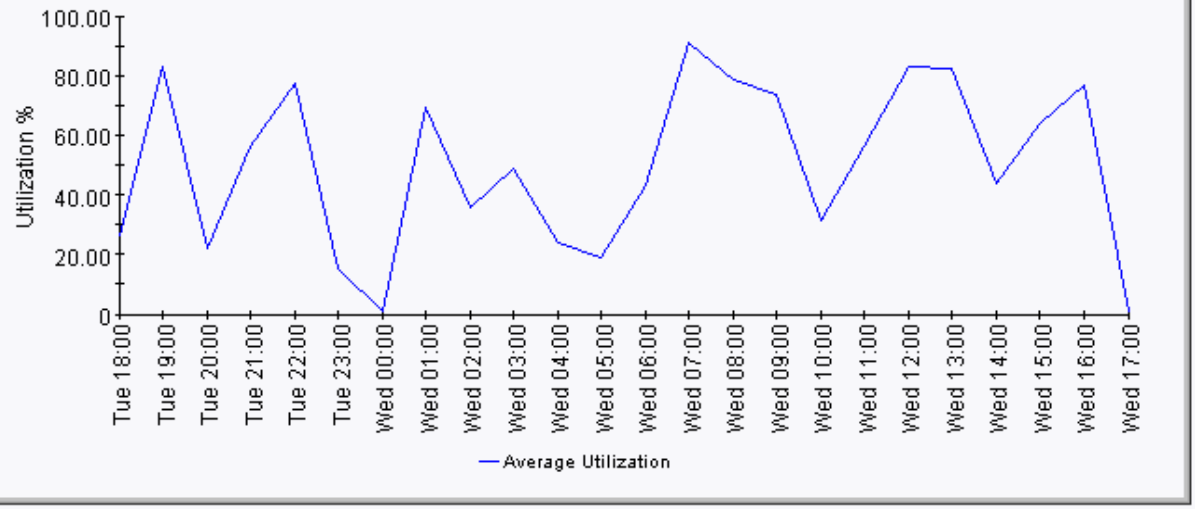
Vendor	Location Name	Customer Name
WebSphere	Reston-WebSphere	NetRadix-WebSphere

Hourly | Daily | Monthly

Pool Utilization for

beanModule,PlantsByWebSphere#PlantsByWebSphereEJB.jar,ejb.stateless,Catalog

Tue, Apr 12 6:00 PM - Wed, Apr 13 5:00 PM



Application Server Report Pack

JDBC Throughput - Utilization

This report compares the throughput vs. the utilization of the DB connection pools on the selected server . Throughput is the number of connections allocated by a DB connection pool per second, and is shown in blue according to the scale on the left. The utilization of a connection pool is the number of connections being used as a percent of the maximum capacity configured for the pool and is shown in red according to the scale on the right.

Server JDBC Throughput - Utilization

Tue, Apr 12, 2005

System Name	Server Name	Avg. JDBC Throughput	Avg JDBC Utilization
APPSRVR_01	Server1	13.49	48.59
APPSRVR_02	Server2	16.39	52.61

Application Server Details for

APPSRVR_01

Vendor	Location Name	Customer Name
WebLogic	Reston-AppSrvr	HP-AppSrvr

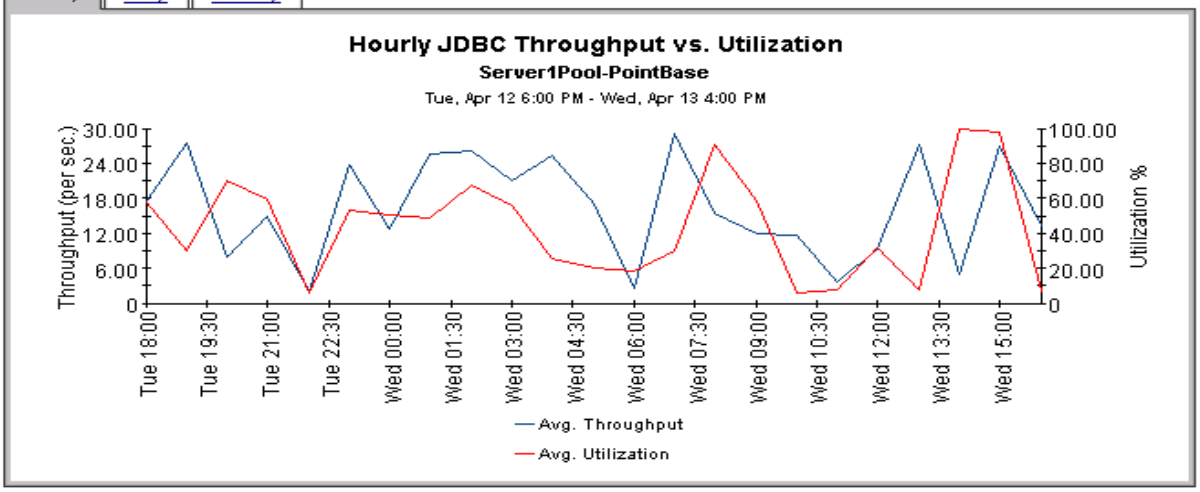
JDBC Pool Throughput - Utilization

APPSRVR_01_Server1

Tue, Apr 12, 2005

JDBC Pool	Avg. Throughput	Avg. Utilization
Server1Pool-PointBase	14.70	40.94
Server1XAPool-PointBase	12.28	56.24

Hourly | Daily | Monthly



Application Server Report Pack

Near Real Time Server Availability - Throughput

The near real time server availability report contains a graph showing the percentages of application server uptime. The top table shows the near real time availability and transaction throughput. A lower than expected number of measurements may indicate unrecorded system downtime, but it may also reveal issues with the availability monitoring service, which may or may not affect actual availability. The Server transaction throughput graph shows the average number of transactions processed per second for each server.

NRT Server Availability - Throughput

Wed, Apr 13 12:45 PM

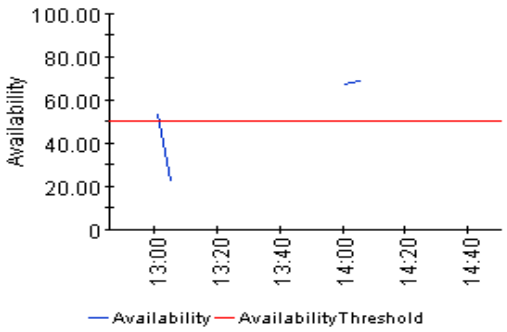
Averages over the last six hours

Target Name	Server Name	Server Availability	Transaction throughput
APPSRVR_01	Server1	47.08	15.14
APPSRVR_02	Server2	47.00	14.00
WEBSPHERE_01	WebSphereServer1	46.12	743.30
WEBSPHERE_02	WebSphereServer2	76.94	721.75

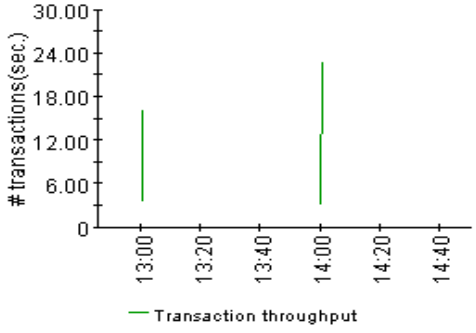
Application Server Details for APPSRVR_01

Vendor	Location Name	Customer Name	Availability Threshold
WebLogic	Reston-AppSrvr	HP-AppSrvr	50.00

NRT Server Availability
for APPSRVR_01
Wed, Apr 13 12:45 PM - Wed, Apr 13 2:50 PM



NRT Server Transaction Throughput
for APPSRVR_01
Wed, Apr 13 12:45 PM - Wed, Apr 13 2:50 PM



Application Server Report Pack

Servlet Request Rate - Response Time

The Servlet request rate report shows the number of servlet requests per second by a server. The servlet response time report shows the average response time for the top 20 servlets. The top 20 servlets are selected based on the highest average response time over the reporting period.

Servlet Request Rate - Response Time

Tue, Apr 12, 2005

System	Server Name	Servlet Name
WEBSPHERE_02	WebSphereServer2	webAppModule,MDBSamples#MDBGalleryFRWeb.war,webAppModule.servlets,SimpleFileServle
WEBSPHERE_01	WebSphereServer1	webAppModule,adminconsole#adminconsole.war,webAppModule.servlets,action
WEBSPHERE_02	WebSphereServer2	webAppModule,adminconsole#adminconsole.war,webAppModule.servlets,SimpleFileServlet
WEBSPHERE_02	WebSphereServer2	webAppModule,adminconsole#adminconsole.war,webAppModule.servlets,action
WEBSPHERE_02	WebSphereServer2	1.2_Processor
WEBSPHERE_01	WebSphereServer1	webAppModule,adminconsole#adminconsole.war,webAppModule.servlets,SimpleFileServlet

Application Server Details for

WEBSPHERE_02 : WebSphereServer2

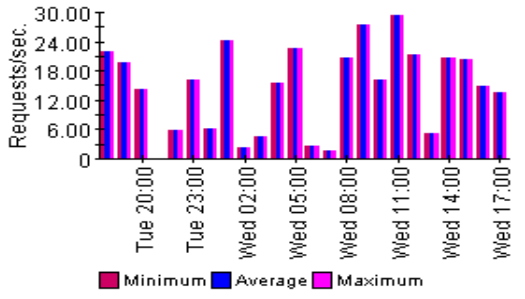
Vendor	Location Name	Customer Name
WebSphere	Reston-WebSphere	NetRadix-WebSphere

Hourly | Daily | Monthly

Servlet Request Rate

WEBSPHERE_02 : WebSphereServer2

Tue, Apr 12 6:00 PM - Wed, Apr 13 5:00 PM

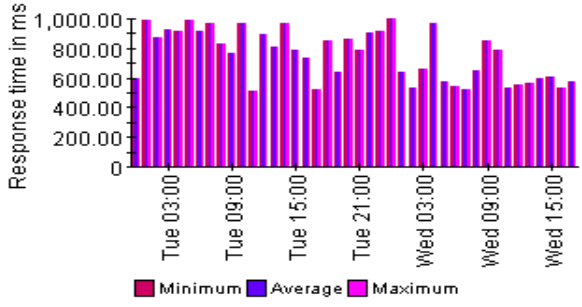


Hourly | Daily | Monthly

Servlet Response Time

WEBSPHERE_02 : WebSphereServer2

Tue, Apr 12 12:00 AM - Wed, Apr 13 5:00 PM



7 WebLogic Application Server Reports

The WebLogic Application Server reports provide information that is specific to WebLogic servers. Each report is summarized below.

EJB Cache Utilization

This report shows the percentage of the EJBs in the cache in use. When the maximum cache size is reached, the WebLogic Server passivates (transfers from memory to secondary storage) some EJBs that have not been recently used by a client. This could result in performance degradation.

EJB Transaction Reports

The EJB Free Pool Wait Rate measures the number of times per minute that no stateless session beans were available from the free pool. This means the client must wait for an available bean, impacting response time.

The EJB Load Timeout Rate measures the number of times a client timed out waiting for an EJB. This could result in new clients requesting the EJB class being blocked until an active EJB completes a method call.

The EJB Transaction Throughput measures the number of EJB transactions per second.

Execute Queue Throughput — Utilization

This report measures the number of requests serviced by an execute queue per second. The Queue Utilization chart shows the percentage of threads used for a server's execute queue. At 100% utilization, the WebLogic server will not have any threads available to service incoming requests. System administrators can increase the total number of execute threads via the administrator's console.

JMS Throughput — Utilization

This report measures the number of messages/bytes that have passed through this JMS (Java Message Service) Server per second.

The JMS Utilization report indicates what percentage of a JMS queue is filled based on the number of messages/bytes. If the value reaches the threshold, the administrator should consider increasing the size of the queue so that users will still be able to deliver messages.

Near Real Time Execute Queue Throughput — Utilization

This report provides the throughput/utilization trend of execute queues for the last six hours.

Server Transaction Rollback

This report plots, using a stacked bar graph, the percentage of transactions that are rolled back due to Resource error/Application error/Timeout error/System error.

The following metrics are collected by the WebLogic SPI and later by the WebLogic SPI Datapipe:

Table 1 JVM

Metric Number and Name	Metric Description
B005_JVMMemUtilPct	Percentage of heap space used in the JVM

Table 2 Server Performance

Metric Number and Name	Metric Description
B010_ExQueThruRate	Number of requests serviced by an execute queue per second
B011_ExQThrdUtilPct	Percentage of threads in use for a server's execute queue
B012_ExQueWaitCnt	The number of client requests waiting to be serviced
B013_ SocketTrafficRt	Number of socket connections opened per second
B014_ActiveSocketCnt	Number of socket connections opened

Table 3 Enterprise Java Beans (EJB)

Metric Number and Name	Metric Description
B025_EJBPoolWtRtSum	Number of times per minute that no EJB beans were available from the free pool
B026_EJBTimeoutRtSum	Number of times per minute a client timed out waiting for an EJB bean
B035_EJBTranThruRt	Number of EJB transactions per second
B036_EJBTranRbRt	Number of EJB transactions rolled back per second

Table 4 JDBC

Metric Number and Name	Metric Description
B061_JDBCConPlWtCnt	Number of clients waiting for a connection from connection pools
B063_JDBCConLkRtSum	Number of unclosed JDBC connections and JDBC connections that have exceeded their maximum idle times in the connection pool per minute

Table 5 Connector Service

Metric Number and Name	Metric Description
B078_CnctrLeakRtSum	Number of unclosed connector connections and connector connections that have exceeded their maximum idle times in the connection pool per minute

Table 6 Transaction

Metric Number and Name	Metric Description
B070_TranAveTime	Average commit time for transactions
B071_TranRollbackPct	Percentage of transactions rolled back, based on the total
B072_TranResErrRbPct	Percentage of the transactions rolled back due to resource error
B073_TranAppErrRbPct	Percentage of transactions rolled back due to application error
B074_TranTimErrRbPct	Percentage of transactions rolled back due to a timeout error
B075_TranSysErrRbPct	Percentage of the transactions rolled back due to system error.

Table 6 Transaction

Metric Number and Name	Metric Description
B076_TranThruRate	Number of transactions processed per second.
B077_TranHeurCnt	Percentage of transactions returning a heuristic decision.
B079_TranCapUtil	Percentage utilization of transaction capacity.

Table 7 Cluster

Metric Number and Name	Metric Description
B080_ClsOutMesFailRt	Number of multicast messages per minute to cluster re-sent
B081_ClsInMesFailRt	Number of multicast messages per minute from cluster lost by server

Table 8 Security

Metric Number and Name	Metric Description
B085_InvLoginAttCnt	Number of invalid login attempts

Table 9 WebLogic Time Service

Metric Number and Name	Metric Description
B091_TimeSerThruRt	Number of triggers executed per second

For more information about metrics collected by WebLogic SPI, see *HP Operations Smart Plug-in for BEA WebLogic Server Configuration Guide* and *HP Operations Smart Plug-in for BEA WebLogic Server Reference Guide*.

The following figures display a few sample reports:

Application Server Report Pack

EJB Cache Utilization

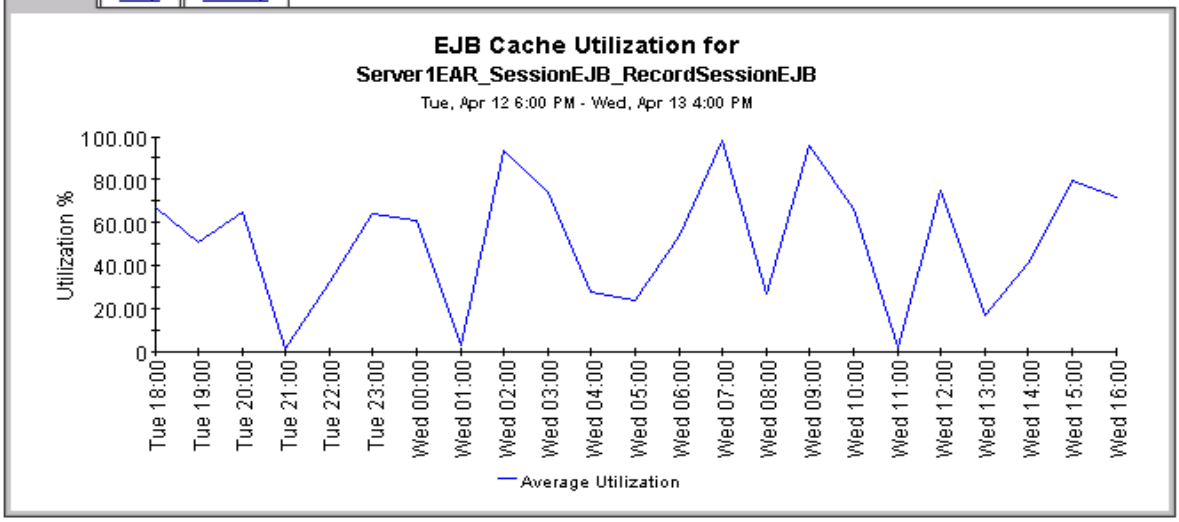
This report shows the percent of time a request to access a bean from an EJB's cache succeeded for the selected server. The EJBs are sorted based on the highest average cache hit percent over the reporting period. Stateful and entity EJBs are included in this data. This report is available for WebLogic Server versions 7.0 and higher.

EJB Selection List

Tue, Apr 12, 2005

System	Server Name	EJB Name	Avg. Cache Util.
APPSRVR_01	Server1	Server1EAR_SessionEJB_RecordSessionEJB	49.64
APPSRVR_01	Server1	Server1EAR_WebServicesEJB_Server1WebServicesEJB	52.15
APPSRVR_01	Server1	PhysicianEAR_PhysicianSessionEJB_PhysicianSessionEJB	47.44
APPSRVR_02	Server2	ProjectBeans_SyncDispatcher	51.53
APPSRVR_02	Server2	HelloWorldAsync_1h6zn35qieh7z_StatelessContainer	40.43

Hourly | Daily | Monthly



Application Server Report Pack

EJB Transaction Reports

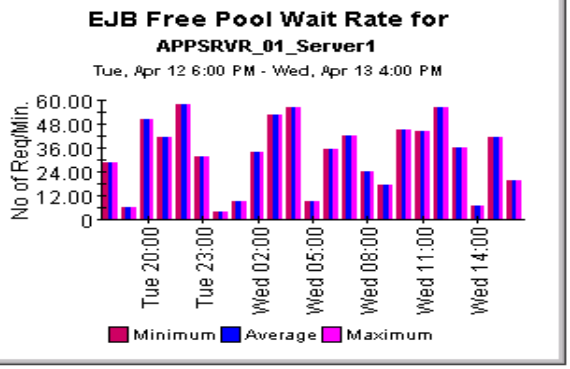
The EJB free pool wait rate graph shows the number of requests per minute that had to wait for an instance of the EJB to become available from the EJB's free pool. The servers were sorted based on the average wait rate (number of requests that had to wait per minute) during the reporting period.
The EJB Load Timeout rate graph shows the number of requests for an EJB that timed out per minute while waiting for an instance of the EJB to become available from this EJB's free pool.
The EJB Transaction throughput graph shows the minimum, average and maximum number of transactions processed per second by EJBs. This report is available only for WebLogic version 6.1

EJB Transaction

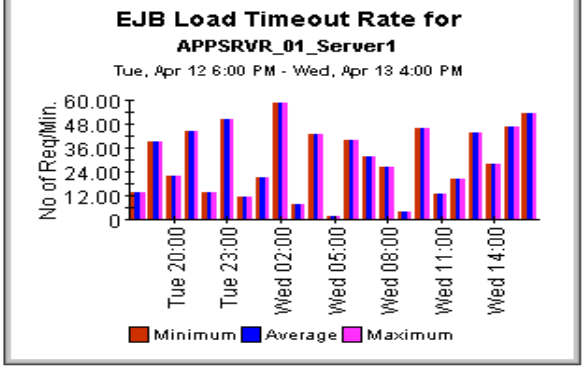
Tue, Apr 12, 2005

System Name	Server Name	Avg. Pool Wait Rate	Avg. Timeout Rate	Avg. Transaction Throughput	Customer	Location
APPSRVR_01	Server1	29.67	28.76	6.52	HP-AppSrvr	Reston-AppSrvr
APPSRVR_02	Server2	31.99	36.11	4.89	NetRadix-AppSrvr	Bangalore-AppSrvr

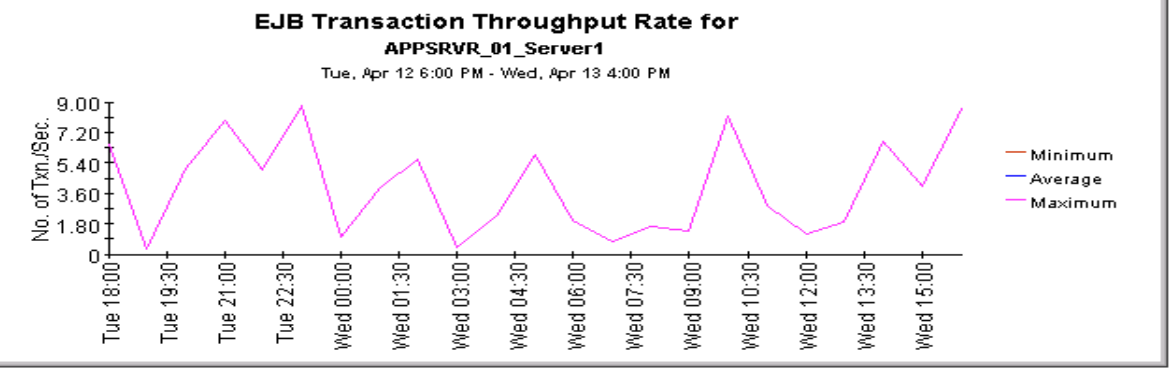
Hourly | Daily | Monthly



Hourly | Daily | Monthly



Hourly | Daily | Monthly



Application Server Report Pack

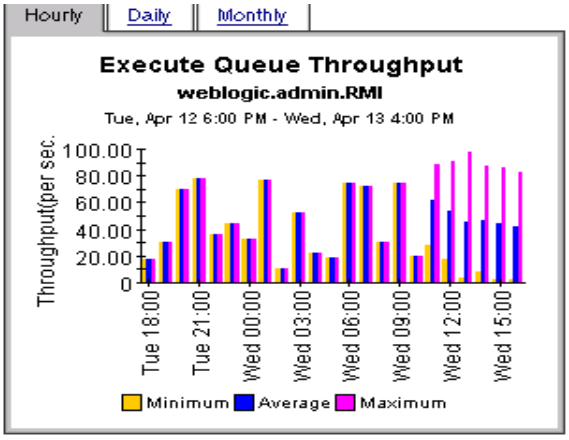
Execute Queue Throughput - Utilization

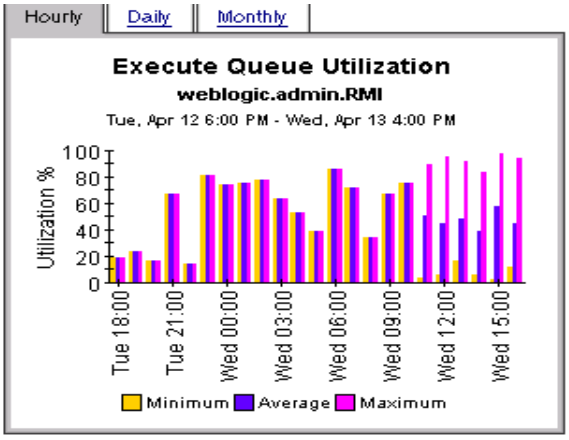
The Execute Queue throughput graph shows the average number of requests processed by a server's executing queue per second. The Execute Queue Utilization graph shows the utilization of the server execute queue thread pool as a percent of the number of threads configured for the pool.
The WebLogic Server queue throughput vs. utilization graph compares the throughput vs. the utilization of the execute queues on the selected server.

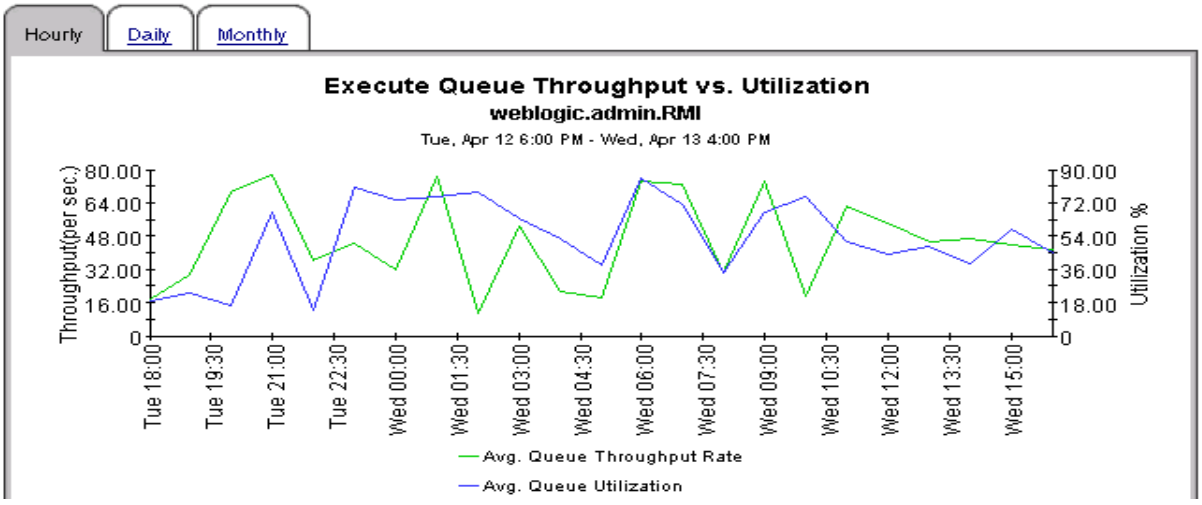
Execute Queue Throughput - Utilization

Tue, Apr 12, 2005

System Name	Server Name	Queue Name	Avg. Throughput	Avg. Utilization
APPSRVR_01	Server1	weblogic.admin.RMI	50.53	46.00
APPSRVR_01	Server1	weblogic.admin.HTTP	51.90	45.57
APPSRVR_01	Server1	weblogic.admin.System	62.11	48.63
APPSRVR_02	Server2	weblogic.admin.RMI	32.90	47.42
APPSRVR_02	Server2	weblogic.admin.HTTP	64.40	55.46
APPSRVR_02	Server2	weblogic.admin.System	49.01	46.57







Application Server Report Pack

JMS Throughput - Utilization

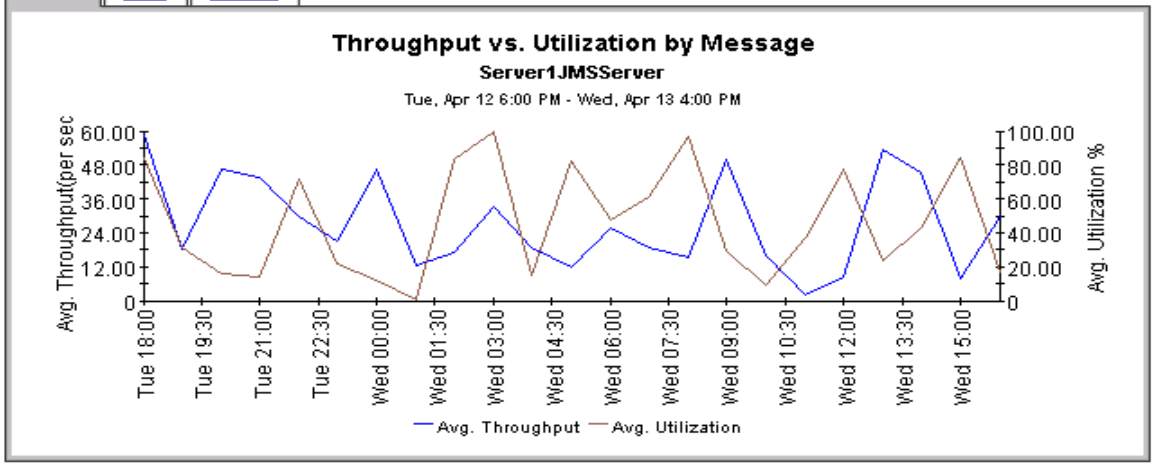
The JMS Server throughput vs. utilization by Message graph compares the throughput vs. utilization of the JMS Servers on the selected server based on the size of JMS messages. The throughput is the number of JMS messages processed by a JMS server per second. The utilization of the message queue is the total size of the messages beeing processed as a percent of the maximum size configured for the queue. The JMS Server throughput vs. utilization by Bytes graph compares the throughput vs. utilization of the JMS Servers on the selected server based on the number of JMS messages.

JMS Server Throughput vs. Utilization

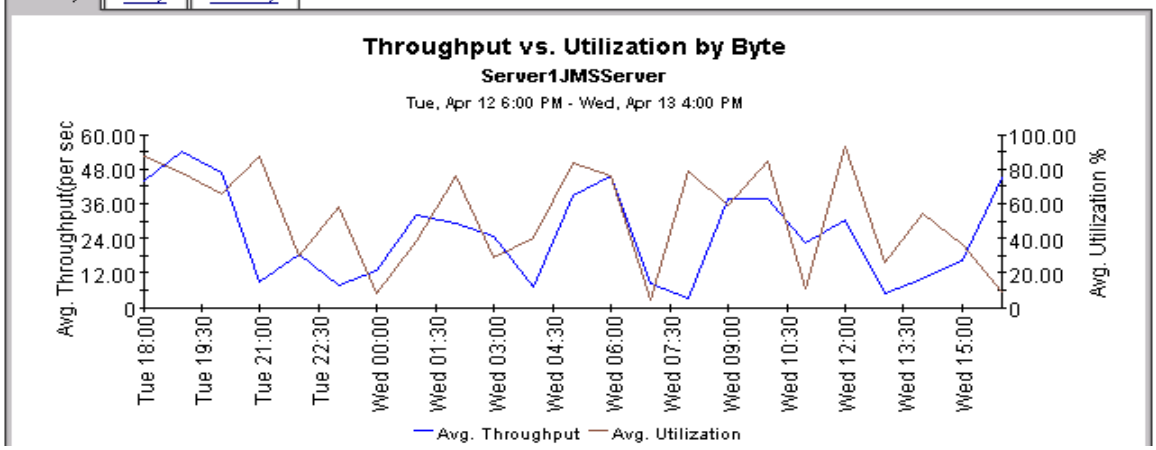
Tue, Apr 12, 2005

System Name	Server Name	JMS Server Name	Avg. Tput by Msg.	Avg. Util. by Msg.	Avg. Tput by Byte	Avg. Util. by Byte
APPSRVR_01	Server1	Server1JMSServer	30.23	53.73	30.63	44.11
APPSRVR_01	Server1	WSStoreForwardInternalJMSServerServer1	29.82	47.86	28.01	45.57
APPSRVR_02	Server2	Server2JMSServer	30.54	47.57	32.24	48.86

Hourly | Daily | Monthly



Hourly | Daily | Monthly



Application Server Report Pack

Near Real Time Execute Queue Throughput - Utilization

The NRT Execute Queue Throughput graph shows the average number of requests processed by a server's executing queue per second. The NRT Execute Queue Utilization graph shows the utilization of the server execute queue thread pool as a percent of the number of threads configured for the pool.

NRT Execute Queue Throughput - Utilization

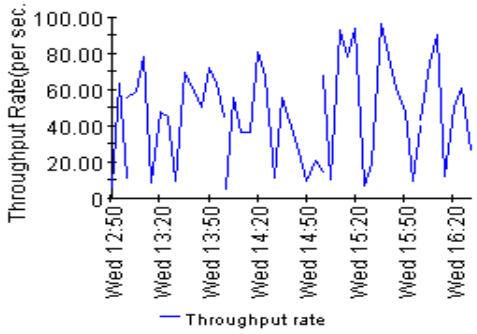
Wed, Apr 13, 2005

Averages over the last 6 hours

System Name	Server Name	Queue Name	Queue Utilization	Queue Throughput
APPSRVR_01	Server1	weblogic.admin.System	49.92	46.26
APPSRVR_02	Server2	weblogic.admin.RMI	47.44	53.35
APPSRVR_02	Server2	weblogic.admin.System	47.20	50.72
APPSRVR_01	Server1	weblogic.admin.RMI	46.82	45.14

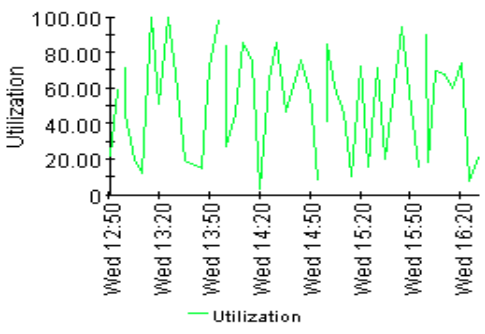
NRT Execute Queue Throughput Rate for APPSRVR_01

Wed, Apr 13 12:50 PM - Wed, Apr 13 4:30 PM



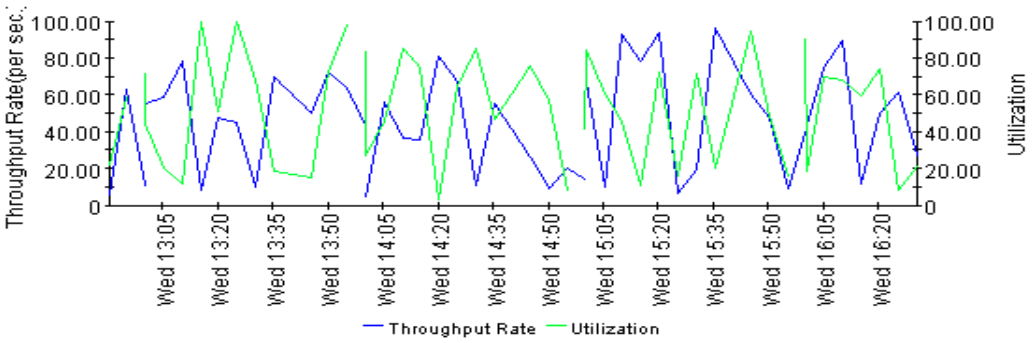
NRT Execute Queue Utilization for APPSRVR_01

Wed, Apr 13 12:50 PM - Wed, Apr 13 4:30 PM



NRT Execute Queue Throughput vs. Utilization for APPSRVR_01

Wed, Apr 13 12:50 PM - Wed, Apr 13 4:30 PM



Application Server Report Pack

Server Transaction Rollback

This report shows the percentage of transactions that have been rolled back for the selected server.

Server Transaction Rollback

Tue, Apr 12, 2005

System Name	Server Name	System Error	Resource Error	Application Error	Timeout Error
APPSRVR_01	Server1	27.79	30.52	31.17	32.73
APPSRVR_02	Server2	22.89	30.87	32.02	27.50

Application Server Details for

APPSRVR_01_Server1

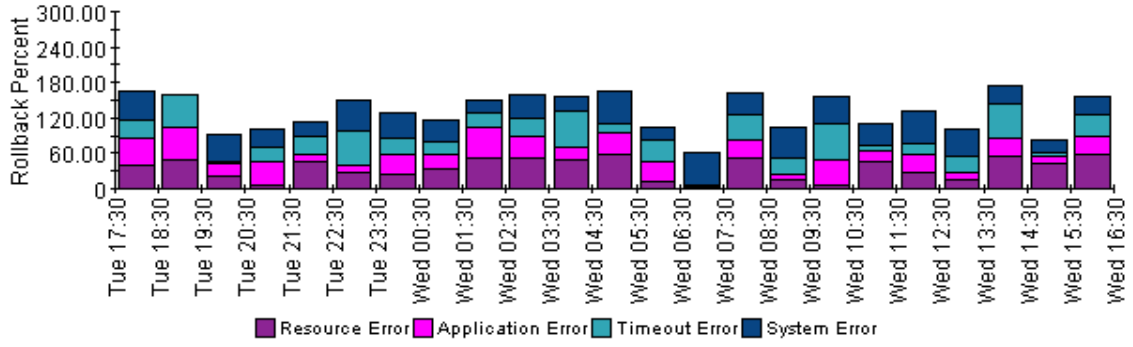
Vendor	Customer Name	Location Name
WebLogic	HP-AppSrvr	Reston-AppSrvr

Hourly | Daily | Monthly

Transaction Rollback by type

APPSRVR_01_Server1

Tue, Apr 12 6:00 PM - Wed, Apr 13 4:00 PM



8 WebSphere Application Server Reports

The WebSphere Application Server reports provide information that is specific to WebSphere servers. See below for a summary of report contents.

EJB Load-Stores Rate

Displays the number of all entity EJB loads and stores to and from the database per minute for the top 20 servers. For the selected server it lists the top 20 EJBs; the EJB is shown along with the number of all EJB loads and stores to and from the database per minute.

EJB Method Calls Rate

Displays the number of all EJB method calls per minute for the top 20 servers. The EJB is shown along with the number of all EJB method calls per minute. The top 20 EJBs are selected based on the highest average method calls per minute over the reporting period.

EJB Top 20

This report contains statistics for:

- Percentage of EJB retrievals that were not successful during the collection interval
- Average pool size for the top 20 EJBs
- Average response time in milliseconds for the top 20 EJBs

JDBC Connection Pool Details

Shows the average number of connections allocated per day for the top 20 servers. The top 20 servers are selected based on the highest average number of connections allocated over the reporting period. The DB Pool is shown along with Clients Waiting, Client Timeout Rate, Average Pool Size, and Average Wait Time.

Servlet Sessions

Shows the total number of servlet sessions being handled by the top 20 servers.

Thread Pool Activity

Compares the average size of thread pools with the average number of active threads on the selected server.

Transaction Throughput

Displays the average number of transactions processed per second by the top 20 servers for the previous day. The top 20 servers are selected based on the highest average number of transactions processed per second over the reporting period. For the selected server it displays hourly data points representing the average number of transactions processed; this extends back 7 days and forward up to the last hour for which data was summarized.

The following metrics are collected by the WebSphere SPI and later by the WebSphere SPI Datapipe:

Table 1 JVM

Metric Number/Name	Metric Description
I005_JVMMemUtilPct	Percentage of heap space used in the JVM

Table 2 Server Performance

Metric Number/Name	Metric Description
I013_ ThrdPoolPctMax	Percentage of time Number of threads in pool reached configured maximum size
I014_ThrdPoolCrtRt	Number of threads created per minute

Table 3 Enterprise Java Beans (EJB)

Metric Number/Name	Metric Description
I020_EJBPoolUtil	Percentage of active beans in the pool
I022_EJBMethCallsRt	Number of EJB method calls per minute
I024_EJBEntDatLdStRt	Number of times an EJB was written to or loaded from the database per minute.
025_EJBPoolMissPct	Average Percentage of time a call to retrieve an EJB from the pool failed
I026_EJBConcLives	Average Number of bean objects in the pool

Table 4 Servlets

Metric Number/Name	Metric Description
I040_ServSessAveLife	Average lifetime of a servlet session in milliseconds
I041_ServSessActSess	Number of sessions currently being accessed
I042_ServInvSessRt	Number of sessions being invalidated per second

Table 5 Web Applications

Metric Number/Name	Metric Description
I045_WebAppServReqRt	Number of requests for a servlet per second
I047_WebAppServErrRt	Number of errors in a servlet per second
I048_WebAppServLoad	Number of servlets currently loaded for a web application
I049_WebAppServRelRt	Number of servlets reloaded for a web application per minute

Table 6 JDBC

Metric Number/Name	Metric Description
I061_JDBCConPoolWait	Average number of threads waiting for a connection from connection pools
I062_JDBConPoolWtTim	Average time that a client waited for a connection in milliseconds
I065_JDBConPoolTimRt	Number of times a client timed out waiting for a connection from the pool per minute
I066_JDBCConPoolThru	Number of connections allocated and returned by applications per second

Table 7 Transactions

Metric Number/Name	Metric Description
I070_TranGlobDur	Average duration of global transactions
I071_TranLocDur	Average duration of local transactions
I072_TranGlobCommDur	Average duration of commits for global transactions
I073_TranLocCommDur	Average duration of commits for local transactions
I074_TranRollbackRt	Number per second of global and local transactions rolled back

Table 7 Transactions

Metric Number/Name	Metric Description
I075_TranTimeoutRt	Number per second of timed out global and local transactions
I076_TranCommitRt	Number per second of global and local transactions that were committed
I078_TranStartRtt	Number per second of global and local transactions that were begun

For more information about metrics collected by WebLogic SPI, see *HP Operations Smart Plug-in for IBM WebSphere Application Server Configuration Guide* and *HP Operations Smart Plug-in for IBM WebSphere Application Server Reference Guide*.

The following figures display a few sample reports:

Application Server Report Pack

EJB Load-Stores Rate

This report shows the number of all entity EJB loads and stores to/from the database per minute for the top 20 servers. The top 20 servers are selected based on the highest average loads and stores per minute.

EJB Load-Stores (Server)

Tue, Apr 12, 2005

System Name	Server Name	Avg. Load-Stores
WEBSPHERE_01	WebSphereServer1	7.72
WEBSPHERE_02	WebSphereServer2	7.59

EJB Load-Stores (EJB)

WEBSPHERE_01 : WebSphereServer1

Mon, Apr 11, 2005

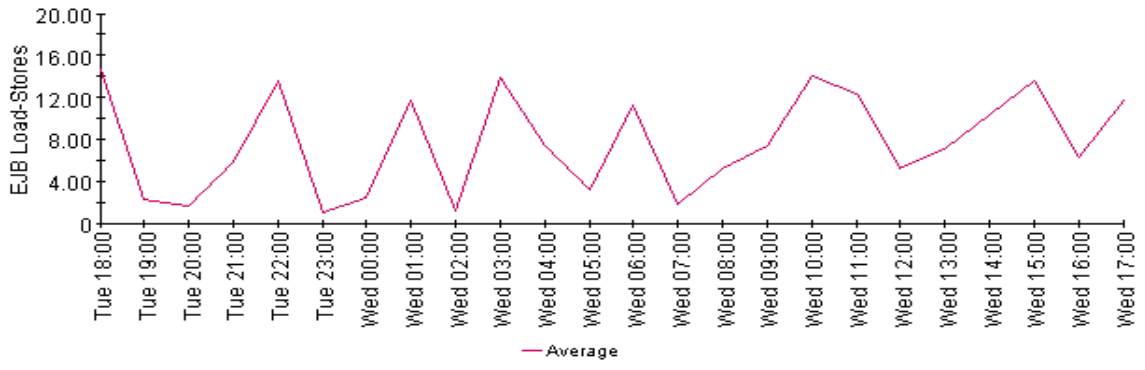
EJB Name	Avg. Load-Stores
PlantsByWebSphere#PlantsByWebSphereEJB.jar_Mailer	8.45
PlantsByWebSphere#PlantsByWebSphereEJB.jar_Login	8.36
petstore#catalog-ejb.jar_CatalogEJB	8.15
TechnologySamples#MovieReviewEJB.jar_MovieReview	7.81
MDBSamples#PSSampleMDB.jar_PSSampleMDB	7.51
PlantsByWebSphere#PlantsByWebSphereEJB.jar_Login	7.44

Hourly | Daily | Monthly

Hourly EJB Load-Stores Rate for

PlantsByWebSphere#PlantsByWebSphereEJB.jar_Mailer

Tue, Apr 12 6:00 PM - Wed, Apr 13 5:00 PM



Application Server Report Pack

EJB Method Calls Rate

This report shows the number of all EJB method calls per minute for the top 20 EJBs. The top 20 EJBs are selected based on the highest average method calls per minute over the reporting period.

EJB Method Calls (Server)

Tue, Apr 12, 2005

System Name	Server Name	Avg. Method Calls
WEBSPHERE_01	WebSphereServer1	7.35
WEBSPHERE_02	WebSphereServer2	6.91

EJB Method Calls (EJB)

WEBSPHERE_01 : WebSphereServer1

Tue, Apr 12, 2005

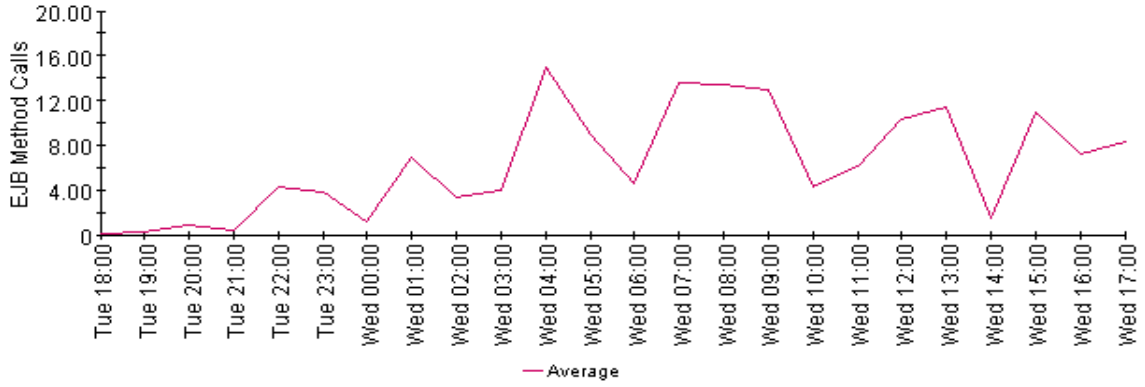
EJB Name	Minimum	Average	Maximum
MDBSamples#PSSampleMDB.jar_PSSampleMDB	0.11	7.02	14.89
PlantsByWebSphere#PlantsByWebSphereEJB.jar_Login	0.57	6.58	14.56
PlantsByWebSphere#PlantsByWebSphereEJB.jar_Mailer	1.26	8.36	14.79
TechnologySamples#MovieReviewEJB.jar_MovieReview	0.80	7.76	13.01
petstore#catalog-ejb.jar_CatalogEJB	0.01	7.02	13.65

Hourly | Daily | Monthly

Hourly EJB Method Calls Rate for

MDBSamples#PSSampleMDB.jar_PSSampleMDB

Tue, Apr 12 6:00 PM - Wed, Apr 13 5:00 PM



Application Server Report Pack

EJB Top 20

This report shows the average EJB pool misses for the top 20 EJBs. The top 20 EJBs are selected based on the highest average pool misses over the reporting period. This report also shows the average pool size for the top 20 EJBs. The top 20 EJBs are selected based on the highest average pool size over the reporting period. This report also shows the average response time in milliseconds for the top 20 EJBs. The top 20 EJBs are selected based on the highest average response time over the reporting period.

EJB Pool Misses

Tue, Apr 12, 2005

System Name	Server Name	EJB Name	Avg. Pool Misses
WEBSPHERE_02	WebSphereServer2	petstore#catalog-ejb.jar_CatalogEJB	54.40
WEBSPHERE_02	WebSphereServer2	PlantsByWebSphere#PlantsByWebSphereEJB.jar_Mailer	53.11
WEBSPHERE_02	WebSphereServer2	TechnologySamples#MovieReviewEJB.jar_MovieReview	51.60
WEBSPHERE_01	WebSphereServer1	PlantsByWebSphere#PlantsByWebSphereEJB.jar_Mailer	51.45
WEBSPHERE_02	WebSphereServer2	MDBSamples#PSSampleMDB.jar_PSSampleMDB	51.38
WEBSPHERE_01	WebSphereServer1	TechnologySamples#MovieReviewEJB.jar_MovieReview	50.07
WEBSPHERE_02	WebSphereServer2	PlantsByWebSphere#PlantsByWebSphereEJB.jar_Login	49.21
WEBSPHERE_01	WebSphereServer1	MDBSamples#PSSampleMDB.jar_PSSampleMDB	47.77
WEBSPHERE_01	WebSphereServer1	PlantsByWebSphere#PlantsByWebSphereEJB.jar_Login	46.65
WEBSPHERE_01	WebSphereServer1	petstore#catalog-ejb.jar_CatalogEJB	44.71

EJB Pool Size

Tue, Apr 12, 2005

System Name	Server Name	EJB Name	Avg. Pool Size
WEBSPHERE_01	WebSphereServer1	petstore#catalog-ejb.jar_CatalogEJB	19.19
WEBSPHERE_02	WebSphereServer2	petstore#catalog-ejb.jar_CatalogEJB	17.10
WEBSPHERE_01	WebSphereServer1	MDBSamples#PSSampleMDB.jar_PSSampleMDB	16.38
WEBSPHERE_02	WebSphereServer2	MDBSamples#PSSampleMDB.jar_PSSampleMDB	15.53
WEBSPHERE_01	WebSphereServer1	TechnologySamples#MovieReviewEJB.jar_MovieReview	15.30
WEBSPHERE_02	WebSphereServer2	TechnologySamples#MovieReviewEJB.jar_MovieReview	14.43
WEBSPHERE_02	WebSphereServer2	PlantsByWebSphere#PlantsByWebSphereEJB.jar_Login	14.42
WEBSPHERE_01	WebSphereServer1	PlantsByWebSphere#PlantsByWebSphereEJB.jar_Mailer	13.73
WEBSPHERE_02	WebSphereServer2	PlantsByWebSphere#PlantsByWebSphereEJB.jar_Mailer	11.44
WEBSPHERE_01	WebSphereServer1	PlantsByWebSphere#PlantsByWebSphereEJB.jar_Login	10.03

EJB Response Time

Tue, Apr 12, 2005

System Name	Server Name	EJB Name	Avg. Response Time
WEBSPHERE_01	WebSphereServer1	PlantsByWebSphere#PlantsByWebSphereEJB.jar_Login	816.18
WEBSPHERE_01	WebSphereServer1	PlantsByWebSphere#PlantsByWebSphereEJB.jar_Mailer	787.40
WEBSPHERE_02	WebSphereServer2	TechnologySamples#MovieReviewEJB.jar_MovieReview	762.73
WEBSPHERE_02	WebSphereServer2	PlantsByWebSphere#PlantsByWebSphereEJB.jar_Mailer	754.13
WEBSPHERE_01	WebSphereServer1	TechnologySamples#MovieReviewEJB.jar_MovieReview	745.70
WEBSPHERE_02	WebSphereServer2	PlantsByWebSphere#PlantsByWebSphereEJB.jar_Login	737.57
WEBSPHERE_02	WebSphereServer2	petstore#catalog-ejb.jar_CatalogEJB	729.35
WEBSPHERE_01	WebSphereServer1	petstore#catalog-ejb.jar_CatalogEJB	723.26
WEBSPHERE_01	WebSphereServer1	MDBSamples#PSSampleMDB.jar_PSSampleMDB	719.84

Application Server Report Pack

JDBC Connection Pool Details

This report shows the average number of connections allocated per day for the top 20 servers. The top 20 servers are selected based on the highest average number of connections allocated over the reporting period. For the selected server it displays DB Connection Pools Details.

Connection Pool Throughput

Tue, Apr 12, 2005

System Name	Server Name	Connections Allocated
WEBSPHERE_02	WebSphereServer2	766.33
WEBSPHERE_01	WebSphereServer1	754.57

Connection Pool Details

WEBSPHERE_02 : WebSphereServer2

Tue, Apr 12, 2005

Connection Pool	Clients Waiting	Client Timeout Rate	Avg. Pool Size	Avg. Wait Time
Cloudscape_JDBC_Provider_DefaultDatasource	2.27	15.62	806.99	15.12
Samples_Cloudscape_JDBC_Provider_(XA)_jdbc/CatalogDB	2.57	16.80	764.57	13.94
Samples_Cloudscape_JDBC_Provider_(XA)_jdbc/petstore/PetStoreDB	2.57	14.33	796.71	11.90
Samples_Cloudscape_JDBC_Provider_WSsamples/TechSampDatasource	2.16	13.50	723.17	12.47

Hourly | Daily | Monthly

Hourly Clients Waiting vs. Client Timeout Rate

Cloudscape_JDBC_Provider_DefaultDatasource

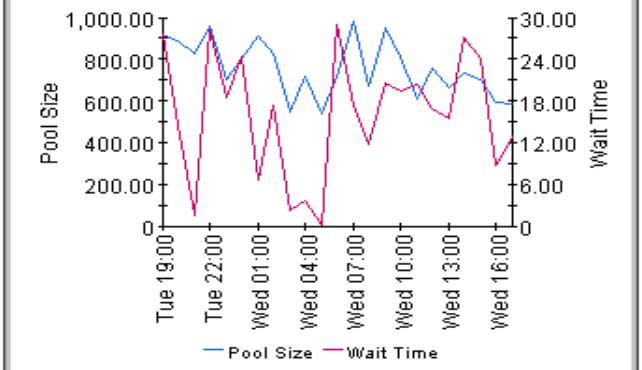
Tue, Apr 12 7:00 PM - Wed, Apr 13 5:00 PM

Hourly | Daily | Monthly

Hourly Pool Size vs. Wait Time

Cloudscape_JDBC_Provider_DefaultDatasource

Tue, Apr 12 7:00 PM - Wed, Apr 13 5:00 PM



Application Server Report Pack

Servlet Sessions

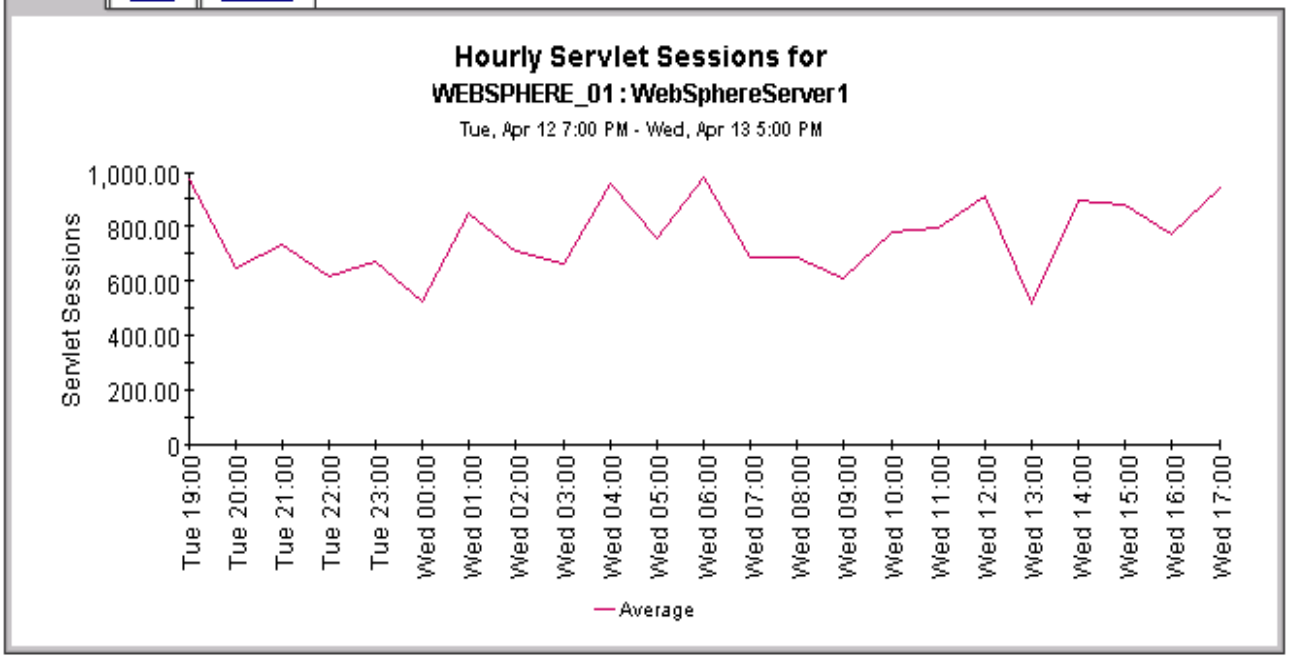
This report shows the total number of servlet sessions being handled by the top 20 servers. The top 20 servers are selected based on the highest average number of sessions over the reporting period.

Servlet Sessions

Tue, Apr 12, 2005

System Name	Server Name	Avg. Servlet Sessions
WEBSPHERE_01	WebSphereServer1	746.07
WEBSPHERE_02	WebSphereServer2	743.47

Hourly | Daily | Monthly



Application Server Report Pack

Thread Pool Activity

This report compares the average size of thread pools with the average number of active threads on the selected server.

Thread Pool Activity (Server)

Tue, Apr 12, 2005

System Name	Server Name	Thread Pool Size	Active Threads
WEBSPHERE_02	WebSphereServer2	24.84	14.96
WEBSPHERE_01	WebSphereServer1	24.66	14.94

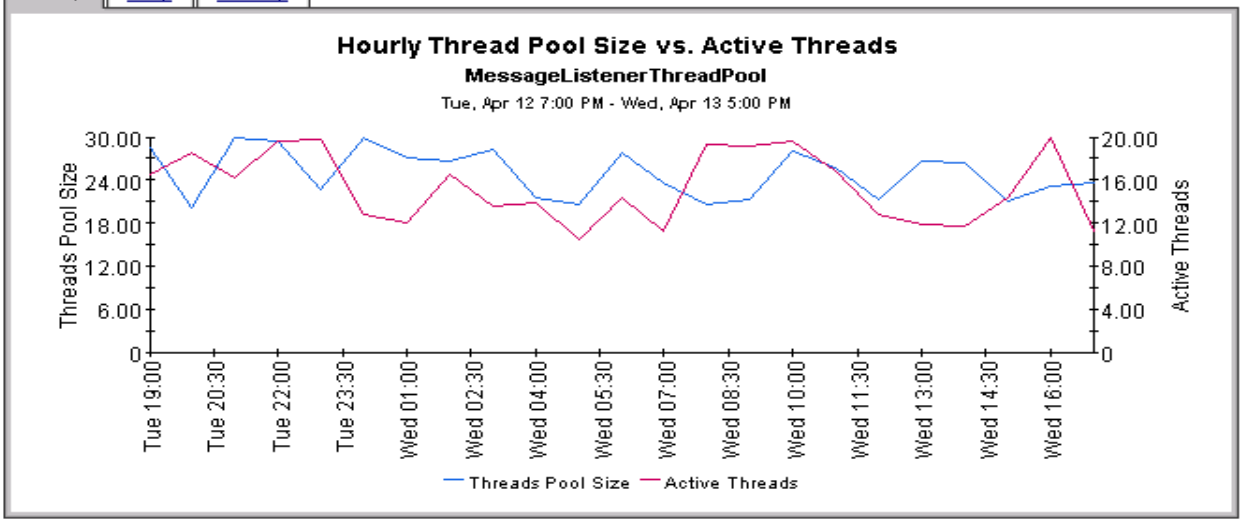
Thread Pool Activity (Thread Pool)

WEBSPHERE_02 : WebSphereServer2

Tue, Apr 12, 2005

Thread Pool Name	Thread Pool Size	Active Threads
MessageListenerThreadPool	24.11	15.54
ORB.thread.pool	25.90	14.79
Servlet.Engine.Transports	24.90	14.41
SoapConnectorThreadPool	24.43	15.11

Hourly | Daily | Monthly



Application Server Report Pack

Transaction Throughput

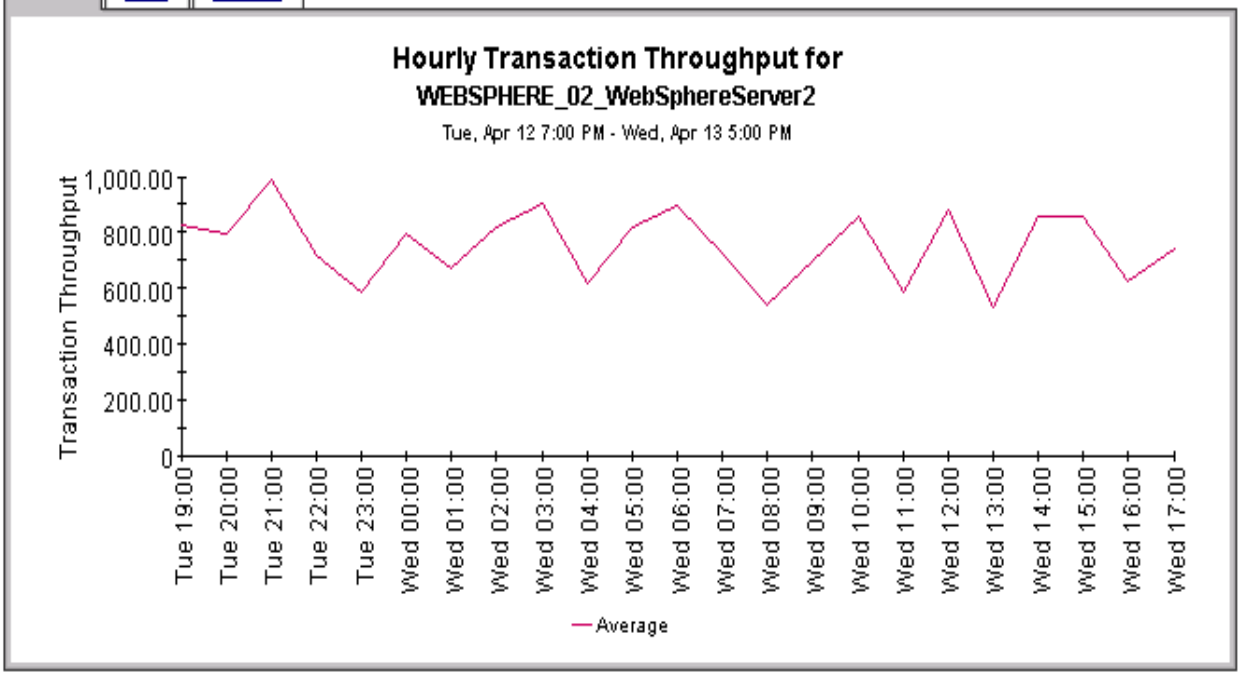
This report shows the average number of transactions processed per second by top 20 servers. The top 20 servers are selected based on the highest average number of transactions processed per second over the reporting period.

Transaction Throughput

Tue, Apr 12, 2005

System Name	Server Name	Minimum	Average	Maximum
WEBSPHERE_02	WebSphereServer2	544.21	740.93	989.87
WEBSPHERE_01	WebSphereServer1	504.33	697.24	998.74

Hourly | Daily | Monthly



A Product History

Version	Release Date	Enhancements
1.00	March 2005	18 reports *packages:* • ApplicationServer • ApplicationServer_Threshold • ApplicationServer_WebLogic • ApplicationServer_WebSphere • ApplicationServer_Demo *datapipes:* • AppServer WebLogic SPI Datapipe 1.00 • AppServer WebSphere SPI Datapipe 1.00
1.00	May 2006	ApplicationServer_Threshold 1.1: AppServer WebLogic SPI Datapipe 1.10 *defect fixes:* • QXCM1000294696 • QXCR1000320737 • QXCR1000296384
1.10	April 2007	*new features:* • Location Independent Reporting • Supports **Management Console > Copy Policy Manager** • Rate data removed from NRT reports, top table *new upgrade packages:* • UPGRADE_ApplicationServer_to_11.ap • UPGRADE_ApplicationServer_WebLogic_to_11.ap • UPGRADE_ApplicationServer_WebSphere_to_11.ap *new version of the WebSpere datapipe:* • AppServer WebSphere SPI Datapipe 1.10 *defect fix:* • QXCR1000378911

Version	Release Date	Enhancements
1.20	October 2007	*new features:* • Copy Policy Enhancement *new upgrade packages:* • UPGRADE_ApplicationServer_to_12.ap • UPGRADE_ApplicationServer_WebLogic_to_12.ap • UPGRADE_ApplicationServer_WebSphere_to_12.ap *new version of the WebSpere datapipe:* • AppServer WebSphere SPI Datapipe 1.20 *defect fixes:* • QXCM1000419420: WebSphere unique constraint violated (DSI_DPIPE.PK_SRAPPSRVR_SERVER) • QXCR1000424908: “unique constraint” message with every execution of the WebSphere report pack.
1.40	February 2009	*new upgrade packages:* • UPGRADE_ApplicationServer_to_14.ap *new version of the WebSpere datapipe:* • AppServer WebSphere SPI Datapipe 1.30 *new version of the WebLogic datapipe:* • AppServer WebLogic SPI Datapipe 1.20

B Editing Tables and Graphs

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

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

View Options for Tables

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

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

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

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

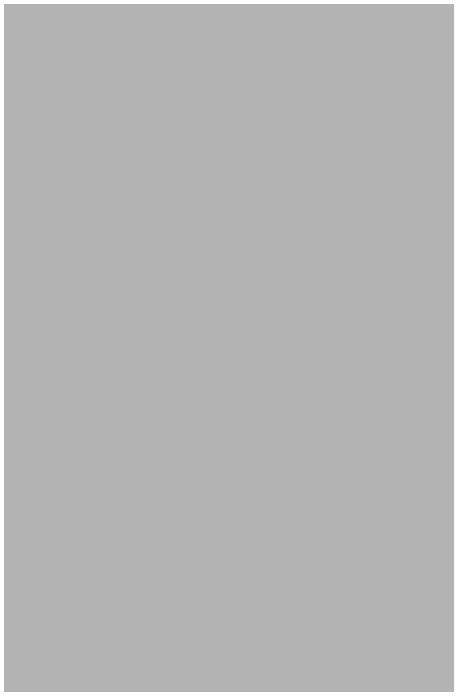
The **Select Nodes/Interfaces** allows you to change the scope of the table by limiting the table to specific nodes, specific interfaces, or a specific group of nodes or interfaces. The Select Node Selection Type window opens.

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

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

View Options for Graphs

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



The following table provides details about each option.

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

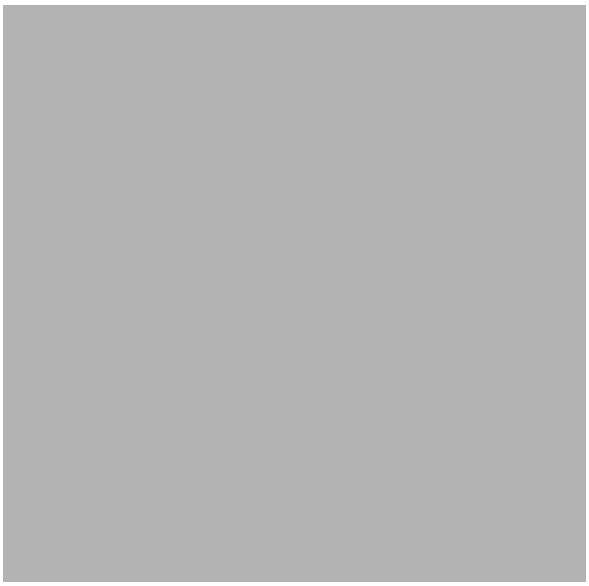
Style > Area

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.

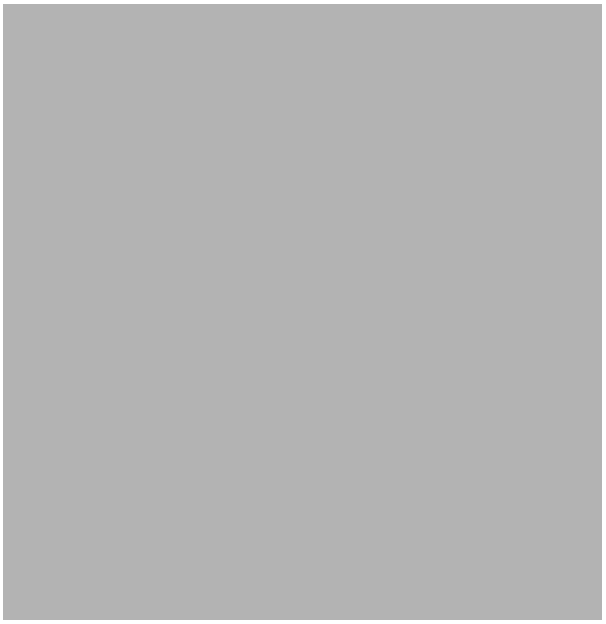


Style > Bar

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.

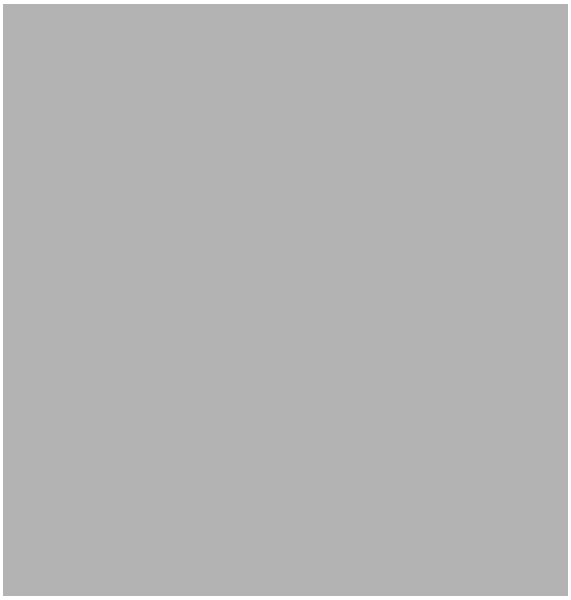
Style > Stacking Bar

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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