

HP OpenView Smart Plug-in for IBM WebSphere Application Server

For HP-UX and Solaris OpenView Operations Management Servers

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Configuration Guide

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1 WBS SPI Concepts

The Smart Plug-in for WebSphere Application Server (WBS SPI) allows you to manage WebSphere Application Servers from an HP OpenView Operations (OVO) console. WBS SPI adds monitoring capabilities otherwise unavailable to OVO. For more information on OVO refer to *HP OpenView Operations for UNIX Concepts Guide*.

This chapter offers a basic introduction to WBS SPI concepts. The following topics are covered:

- [Introducing WBS SPI](#)
- [Functions of WBS SPI](#)
- [WBS SPI Components](#)

Introducing WBS SPI

In conjunction with OVO, WBS SPI offers centralized tools that help you monitor and manage systems using WebSphere Server. From the OVO console, you can apply the HP OpenView performance and problem managing processes to monitor systems using WebSphere Server. WBS SPI metrics are automatically sent to the OVO agent. These metrics can generate alarms or be consolidated into reports and graphs to help you analyze trends in server usage, availability, and performance. You can also integrate WBS SPI with HP OpenView Reporter and HP OpenView Performance Manager (both products must be purchased separately) to obtain additional reporting and graphing flexibility and capabilities. For details on integrating WBS SPI with other HP OpenView products see [Integrating HP OpenView Reporting and Graphing Products with WBS SPI](#) on page 75.

Smart Plug-in Data

WBS SPI has several server-related metrics that gather data about the following areas:

- server availability
- server performance
- memory usage
- transaction rates
- servlet executing times, time-outs, request rates
- JDBC connection status
- Web application processing

Smart Plug-in Data Interpretation

WebSphere server administrators can choose those metrics most crucial to the successful operation of WebSphere servers by modifying WBS SPI templates. These templates contain settings that allow incoming data to be measured against predefined rules that generate useful information in the form of messages. These messages with severity-level color-coding can be reviewed for problem analysis and resolution. Corrective actions are often available in Instruction Text as are automatically generated metric reports, available in the Annotations area of a message.

Functions of WBS SPI

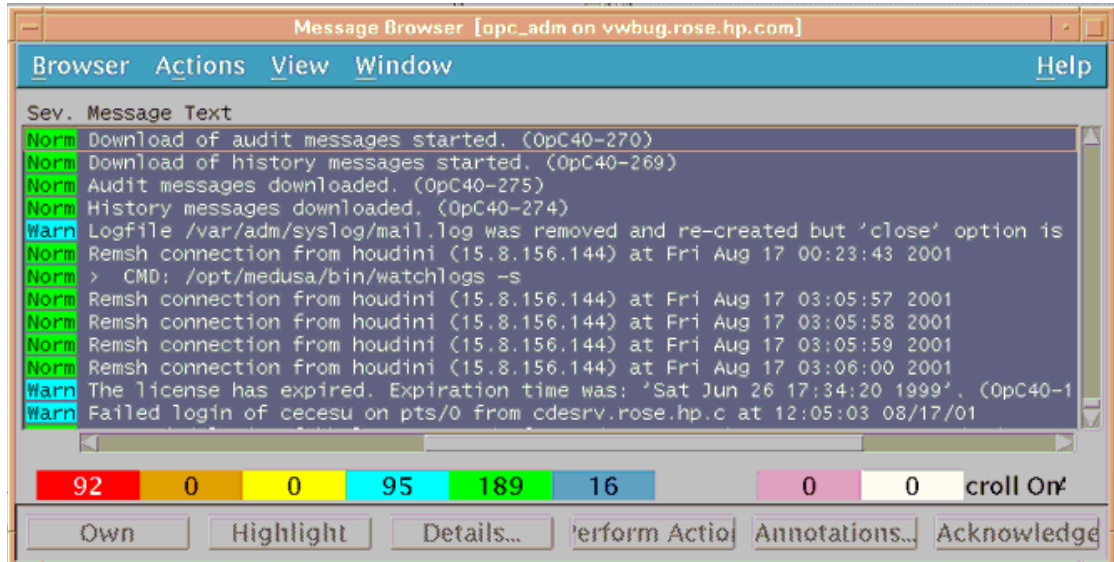
WBS SPI messaging, reporting, and action-executing capabilities are based on the OVO concept of templates. The settings within these templates define various conditions within the WebSphere server. Once in use, WBS SPI templates allow information to be sent back to the OpenView Operations management server to help you proactively address potential or existing problems and avoid serious disruptions to Web transaction processing.

Collecting and Interpreting Server Performance/Availability Information

The WBS SPI, once configured and deployed to managed nodes, gathers data that is interpreted and acted upon, according to settings within the deployed templates. Those templates, described in a later section, define conditions that can occur within the WebSphere server, such as queue throughput rates, cache use percentages, timeout rates, average transaction times, etc. Default thresholds, set within the templates, monitor these conditions and trigger messages to the console when a threshold has been exceeded.

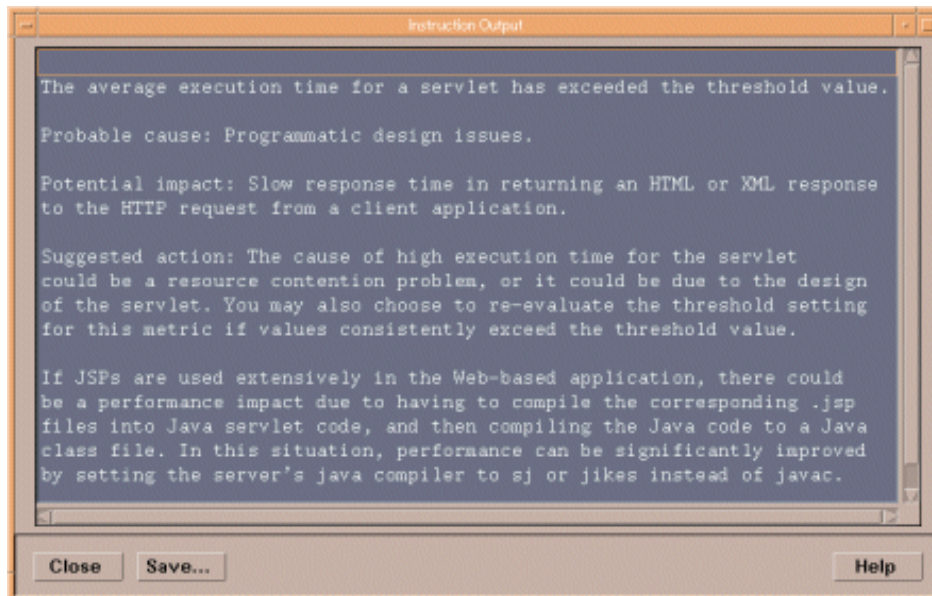
Displaying Information

Messages in the Message Browser: Comparing the values gathered for WebSphere server performance/availability against the schedule template settings relating to those specific areas, OVO agent software forwards the appropriate messages to the OVO console. These messages are displayed with color-coded severity levels in the OVO Message Browser.



Instruction Text: Messages generated by WBS SPI programs contain instruction text to help diagnose and remedy problems. With each Message Details window, you can press the **Instructions** button to view the text.

You can usually find instruction text in the message details; this same text is also available in the *HP OpenView Smart Plug-in for WebSphere Application Server Reference Guide* metric definition.

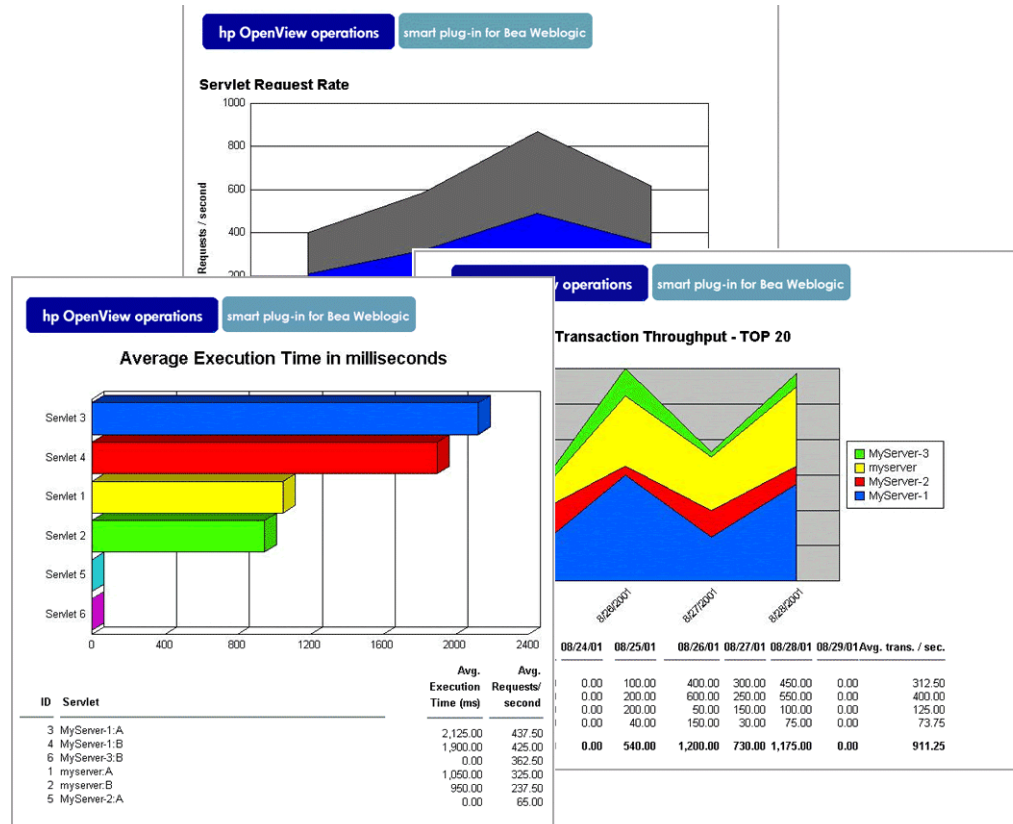


ASCII-Text Reports: In addition to the instruction text mentioned above, metrics with alarms also have automatic action reports that are generated when a defined threshold is exceeded. These reports show conditions of a specific WebSphere server instance. When a report is available, like the instruction text, you can find it within the Message Details, specifically in the Annotations area.

Generating Reports Using HP OpenView Reporter

The WBS SPI also integrates with HP OpenView Reporter to provide you with over 20 management-ready, Web-based reports. WBS SPI includes the templates for generating these reports within its Report package, which you can install on the Reporter Windows system. After you have installed the product and completed some configuration steps, you can expect to see new reports of summarized, consolidated data generated nightly that can help you assess how the WebSphere server is performing over time.

The WBS SPI reports can use WBS SPI data to vividly illustrate servlet request rates, transaction throughput rates, and average transaction execution time, to name just a few generated reports.



Changes You Can Make

You can use WBS SPI templates with no customization, or you can change them as you find necessary. Possible minor modifications and major customizations are listed here:

- **Modification of Default Templates** - Within a template you can change the default settings for (1) collection interval, (2) threshold, (3) message text, (4) duration (5) severity level of the condition, (6) actions assigned to the condition (operator-initiated or automatic).
- **Creation of Custom Template Groups** - Create custom template groups, using default templates as a starting point. To do this, see [Chapter 4, Using and Customizing WBS SPI](#).
- **Custom Metrics** - The ability to define your own metrics or user-definable metrics (UDMs) is a powerful feature that you can use to expand the monitoring capabilities of WBS SPI. Instructions are available in the *HP OpenView Smart Plug-in User Defined Metrics User Guide*.

WBS SPI Components

The WBS SPI components include applications and templates that allow you to configure and receive data in the form of messages and short reports. These messages (available in the Message Browser) and short reports (through applications or message details) provide you with information about conditions present in the servers running on specific managed nodes.

WBS SPI configuration applications let you configure the management server's connection to named server instances on specific managed nodes. After you have configured the connection, you can assign templates to the nodes. With OVO agent software running on the managed nodes, you can use WBS SPI reporting applications to generate reports.

[Chapter 2, Installing, Upgrading, and Removing the WBS SPI](#) details how to install the components and use them to configure server instances on the managed nodes and then deploy the template groups. The sections that follow here give you brief descriptions of all components.

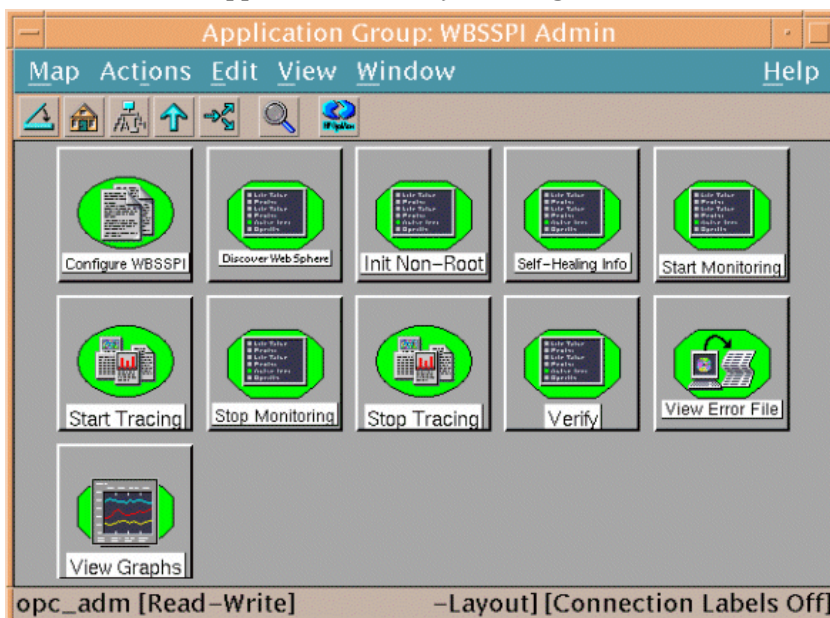
Applications

The WBS SPI applications include configuration, troubleshooting, and report-generating utilities. In the OVO Application Bank window the WBS SPI applications are accessed by double-clicking WBSSPI and are divided into three categories (all three categories are available in both UNIX and Windows for a total of six application groups): WBSSPI Admin, WebSphere, and WBSSPI Reports. Additional applications are available in the JMX Metric Builder application group if you install the WASSPI-UDM-BUILDER software bundle.

WBSSPI Admin Applications Group

This group contains configuration and troubleshooting applications requiring “root” permission, so it is recommended the Admin group be assigned to the OVO administrator. The applications in this group allow you to configure the connection to the server you are monitoring and to turn collections and tracing on and off. The group contains subgroups and applications that are nearly duplicate for UNIX and Windows nodes.

WBSSPI Admin applications allow you configure, control, and troubleshoot the WBS SPI.



The WBSSPI Admin group contains the following applications (additional information is located in [Appendix C, Applications](#)):

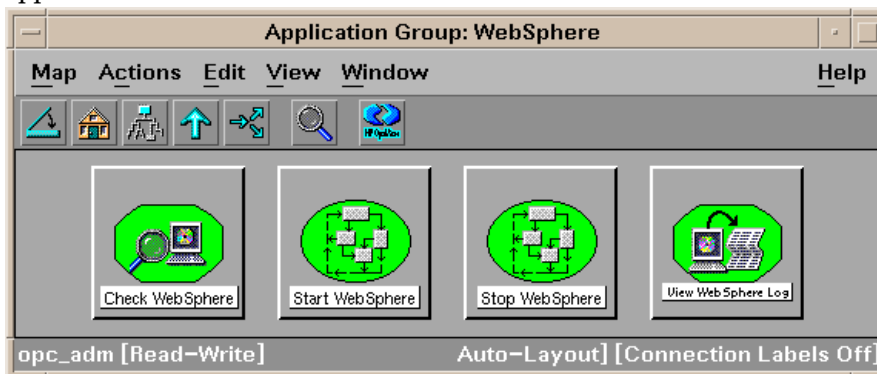
- **Config WBSSPI** - Launches the configuration editor and maintains the WBS SPI configuration.
- **Discover WebSphere**- Sets basic configuration properties needed for discovery.
- **Init Non-Root** - Simplifies the configuration of a non-root HTTPS agent on a UNIX managed node (OVO 8.x only). Refer to [Configuring a Non-Root HTTPS Agent on a UNIX Managed Node \(OVO 8.x Only\)](#) on page 50 for all the steps necessary to configure a non-root HTTPS agent on a UNIX managed node.
- **Self-Healing Info** - Collects data to be sent to your HP support representative.
- **Start/Stop Monitoring** - Starts/Stops the collection of metrics for the entire WBS SPI or for a selected server on the managed node.
- **Start/Stop Tracing** - Starts/Stops tracing of the collections of metrics into a file. Run this application only when instructed by your HP support representative.
- **Verify** - Verifies that the WBS SPI is properly installed on the server or managed node.
- **View Error File** - View the contents of the WBS SPI error log file.
- **View Graphs** - View WBS SPI metric data in OpenView Performance Manager i a web browser (additional setup is required: see [Task 1: Configure the Management Server to Launch your Web Browser](#) on page 35 for more information).

WebSphere Application Group

These applications offer a quick way of checking the status or logfiles of a WebSphere server and starting or stopping a server.

WebSphere applications provide you with convenient access to WebSphere server functions.

You can open the WebSphere applications by double-clicking **WBSSPI** → **WebSphere** in the Application Bank window.



The WebSphere group contains the following applications:

- **Check WebSphere** - Does an interactive status check of selected WebSphere application servers.
- **Start WebSphere** - Allows an OpenView Operations user to start one or all WebSphere application servers on a managed node (requires setup).
- **Stop WebSphere** - Allows an OpenView Operations user to stop one or WebSphere application servers on a managed node (requires setup).
- **View WebSphere Log** - Allows a user to view the entire specified WebSphere log file.

WBSSPI Reports

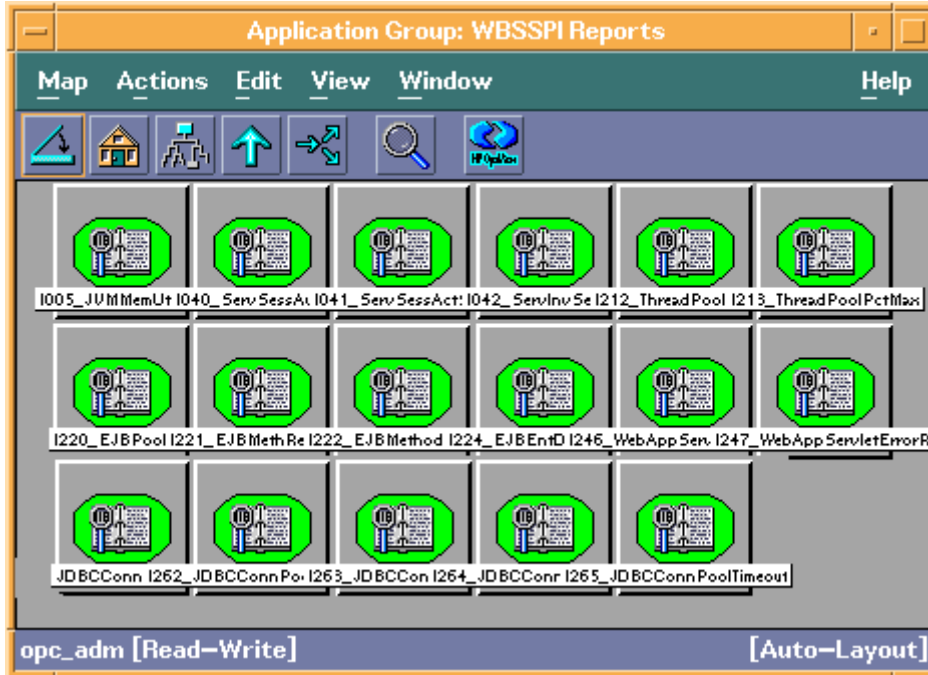
Generated manually by dragging the managed node onto the window/report you have accessed by selecting

Application Bank → **WBSSPI** → **WBSSPI Reports** → *<selected_report>*.

Definitions for the individual metrics contained in each report are available in the *HP OpenView Smart Plug-in for WebSphere Application Server Reference Guide*.

These reports reflect the current condition of all configured server instances on the managed node at the time you generate it. WBS SPI reports require that the targeted managed node have a PMI level setting at or above the rating for the metric you are selecting.

WBSSPI Reports show collected data on all server instances on the targeted node.



WBSSPI Reports Generated from Alarms

WBS SPI reports are also used to capture the data on a current condition in a server. Such a report is triggered by an alarm condition and shows an individual server instance on a managed node. These reports are available by clicking the Annotations button in the OVO Message Browser. If you have configured your Message Browser to display the SUIAONE columns, an S in the A column (adjacent to the message) indicates that a report has been successfully generated and is waiting in the Annotations of the message.

JMX Metric Builder Applications

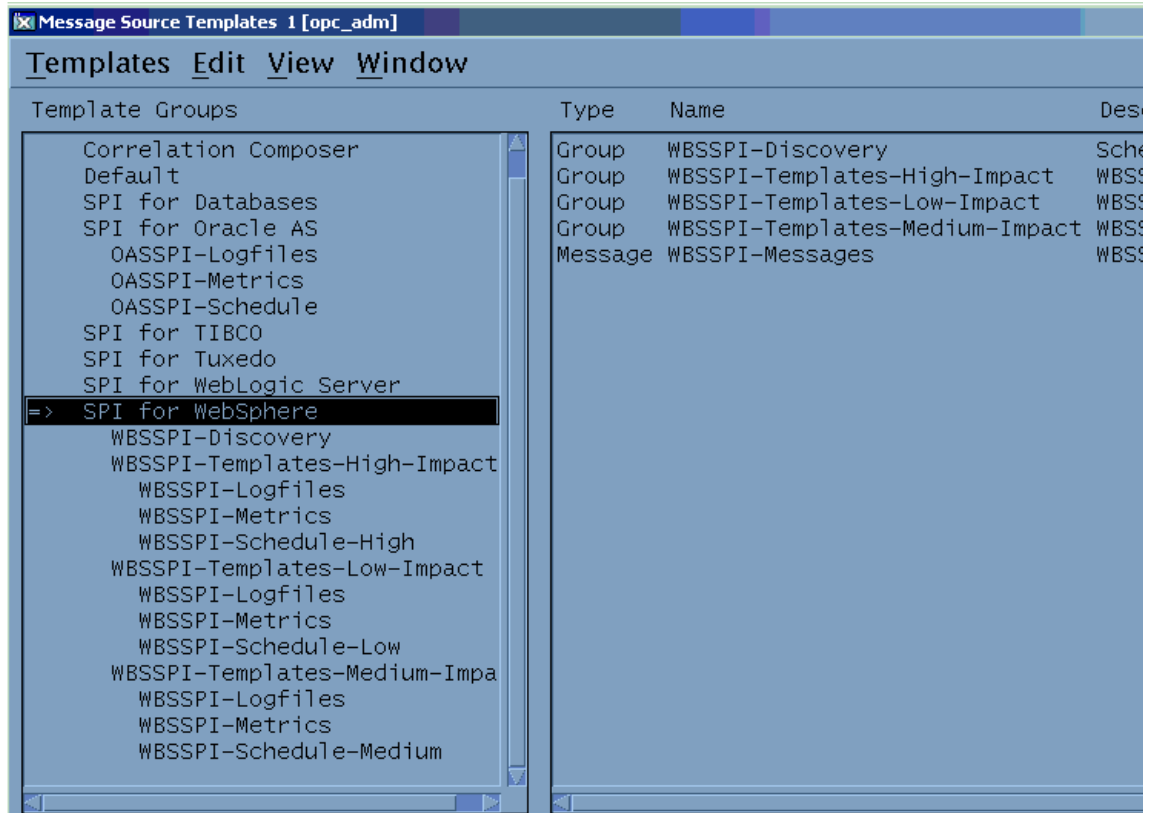
If you install the WASSPI-UDM-BLDR software bundle, the following applications are installed in the JMX Metric Builder application group (refer to the *HP OpenView Smart Plug-in User Defined Metrics User Guide* for more information about these applications and how to install the WASSPI-UDM-BLDR software bundle):

- Deploy UDM - Deploys the UDM file.
- Gather MBean Data - Collects MBean information to be used with the JMX Metric Builder.
- JMX Metric Builder - Launches the JMX Metric Builder application that is used to create UDMs and browse MBeans.
- UDM Graph Enable/Disable - Starts/Stops data collection for UDM graphs. Also starts/stops the OVO subagent.

WBS SPI Templates

WBS SPI template groups provide a means of organizing various OVO templates. The SPI for WebSphere template group organizes templates into WebSphere High, Medium, and Low Impact groups, based on the impact that their data collections incur on system performance. The Low Impact group has only low impact metrics. The Medium Impact group has both medium and low impact metrics. The High Impact group has all metrics: high, medium, and low impact metrics. Refer to the *HP OpenView Smart Plug-in for WebSphere Application Server Reference Guide* for complete listings of the specific metrics included in each group.

All data collection affects performance in some way, with impact varying according to metric (counter). The overhead cost associated with each WBS SPI metric is represented with a rating of high, medium, or low. Metrics with medium or high ratings have higher performance impacts. The calculations required for the collected data generally require multiplication, division, or both. A metric with a low rating involves only a minor performance cost since its calculation requires just a single addition or subtraction.



The SPI for WebSphere template group contains the following template groups and individual templates:

- **WBSSPI-Logfiles** - Contains templates that generate messages according to log file and error text detected in both the WebSphere server log files and in the WBS SPI log files. The information captured from these log files includes errors that occur in the operation of the WebSphere server or the WBS SPI and changes to WebSphere server configuration.
- **WBSSPI-Metrics** - Contains metric templates that monitor the performance levels and availability of a WebSphere server.

Each metric template determines the threshold conditions for the monitored metric, the message text that is sent to the OVO message browser when the threshold is exceeded, the actions to execute, and instructions that appear.

- **WBSSPI-Schedule** - Contains collector templates that specify the collection interval of metric templates. Within the name of each collector template is its collection interval. For example, the collection interval of template WBSSPI-40-High-1h is one hour (where 1h represents one hour). Each collector template is assigned a collection interval of 5 minutes, 15 minutes, or one hour.

When you open any collector template, you see the metrics collected within the interval (listed by number, following the -m option of the collector/analyzer command `wasspi_wbs_ca`).

Each collector template controls when and what metrics are collected. Specifically, the collector template does the following:

- Runs the collector/analyzer at each collection interval
- Specifies which metrics are collected

- WBSPI-Messages - A single template that is used to intercept WBS SPI messages for the OVO message browser.
- WBSPI Discovery - A single template that updates the configuration on the OVO management server and managed nodes.

WebSphere Template Groups and System PMI Levels

When you deploy a template group on a managed node, the PMI level of the node is automatically adjusted to that of the template group. For example, deploying the WebSphere High Impact template group on a node would result in a PMI setting of “high” for the node.



PMI levels, once set, do not automatically revert to lower impact levels, even after removing templates from a node and/or deploying a lower impact level template group. To lower a PMI level for a node requires that you manually reset the PMI level within WebSphere.

2 Installing, Upgrading, and Removing the WBS SPI

This chapter covers installing, upgrading, and removing Smart Plug-in for WebSphere Application Server (WBS SPI) components.

The sections that follow provide instructions for:

- [Installing WBS SPI](#)
- [Removing WBS SPI](#)
- [Upgrading WBS SPI](#)

Installing WBS SPI

The OpenView Operations (OVO) management server and discovery package must be installed before you can install the WBS SPI. It is not necessary to stop OVO sessions before beginning the WBS SPI installation.

The discovery package and WBS SPI are available on the HP OpenView Smart Plug-ins for OVO/UNIX DVD.

For a complete list of software requirements, refer to the *HP Smart Plug-in for WebSphere Application Server Release Notes*.

▶ The instructions that follow cover a command line swinstall installation. For HP-UX systems, you can also use the graphical user interface (GUI). However, the GUI method is not covered here.

▶ If you are going to create UDMs, also install the `WASSPI-UDM-BLDR` software bundle. Refer to the *HP OpenView Smart Plug-in User Defined Metrics User Guide* for more information about this software bundle.

For an HP-UX 11.0 management server, enter:

```
swinstall -s /cdrom/OV_DEPOT/11.0HPUX.sdtape WBSSPI
```

For a Solaris management server, enter:

```
swinstall -s /cdrom/OV_DEPOT/SOLARIS.sdtape WBSSPI
```

WBS SPI Bundles/Filesets

The `swinstall` commands in the previous section install filesets for all managed node platforms. If you have only one kind of managed node, you may want to install the filesets only necessary for the platform you have. Instead of specifying `WBSSPI` on the `swinstall` command, you can specify one or more of the bundle names listed below.

Bundle Name	Filesets	Description
SPIWebSphereHPUX	WBSSPI-CORE WBSSPI-HPUX	Filesets required for a managed node running on HP-UX.
SPIWebSphereSOL	WBSSPI-CORE WBSSPI-SOL	Filesets required for a managed node running on Solaris
SPIWebSphereAIX	WBSSPI-CORE WBSSPI-AIX	Filesets required for a managed node running on AIX.
SPIWebSphereLX86	WBSSPI-CORE WBSSPI-LXx86	Filesets required for a managed node running on Linux.
SPIWebSphereAll	WBSSPI-CORE WBSSPI-HPUX WBSSPI-SOL WBSSPI-AIX WBSSPI-LXx86	Filesets required for managed nodes running on HP-UX, Solaris, Windows, AIX, and Linux.

Removing WBS SPI

The complete removal of the WBS SPI installation deletes all WBS SPI components.

Complete the tasks in the order listed:

- Task 1: Remove the WBS SPI Software from the Management Server
- Task 2: Remove WBS SPI Software from the Node Group and Managed Nodes
- Task 3: Delete WBS SPI Templates and Template Groups
- Task 4: Delete WBS SPI Applications
- Task 5: Delete the WBS SPI Message and Node Groups
- Task 6: Remove the WBS SPI Directory
- Task 7: Remove the Report Package (Optional)
- Task 8: Remove the Graph Package (Optional)

Task 1: Remove the WBS SPI Software from the Management Server

- 1 Open a terminal window and log on as root.
- 2 In the terminal window, enter one of the following: `/usr/sbin/swremove WBS SPI` or `/usr/sbin/swremove SPIWebSphereAll`

The `swremove` command removes the files from the file system only. The WBS SPI templates are still in the OVO data repository and must be deleted manually. Before the templates can be deleted, they (and the WBS SPI software) must be de-assigned from the managed nodes.

Task 2: Remove WBS SPI Software from the Node Group and Managed Nodes

- 1 Open the Node Bank and, from the Actions menu, select **Agents → Assign Templates**.
- 2 Select the WebSphere node group and all managed nodes to which WebSphere templates have been assigned.
- 3 Press the **Remove nodes/groups** button.
- 4 Open the Node Group Bank and select the WebSphere node groups.
- 5 From the Action menu click **Install/Update SW & Config** and select the following check boxes:
 - Templates
 - Actions
 - Monitors
 - Commands
- 6 Select the **Nodes in List** option button.
- 7 Select the **Force Update** option button.
- 8 Click **OK** to remove the Templates, Actions, Commands and Monitors from the managed nodes. The following message is displayed in the Message Browser:

```
The following configuration information was successfully distributed:  
Templates Actions Commands Monitors
```

Task 3: Delete WBS SPI Templates and Template Groups

Starting from the SPI for WebSphere template group, delete all templates and template groups. Once these templates and template groups have been deleted, delete the SPI for WebSphere template group.

- 1 Open the Message Source Templates window and double-click the **SPI for WebSphere** template group
- 2 Press **SHIFT+Click** to select all templates and template groups in the SPI for WebSphere template group.
- 3 Click **Delete from All...**
- 4 Click **Yes** in response to the message:

```
Do you really want to delete the template(s)?
```
- 5 If additional WBS SPI templates and/or template groups are in the SPI for WebSphere template group, repeat steps 2 -4 until you have deleted all WBS SPI templates and template groups from the SPI for WebSphere template group.

- 6 Go up one level and delete the SPI for WebSphere template group.



If you have customized templates (copies of WBS SPI default templates) residing in other OVO template groups, you should remove them as well.

Task 4: Delete WBS SPI Applications

Unlike templates, applications can all be removed in a single step.

- 1 Open the Application Bank.
- 2 Right-click the WBSSPI application group and click **Delete**.
- 3 Click **Yes** in response to the following message:
Do you really want to delete the application group?

Task 5: Delete the WBS SPI Message and Node Groups

- 1 From the Window menu select **Message Group Bank**.
- 2 In the Message Group Bank window right-click the **WBSSPI** group and click **Delete**.
- 3 Repeat for the **WebSphere** group.
- 4 From the Window menu select **Node Group Bank**.
- 5 In the Node Group Bank window right-click the WebSphere (High, Low, and Medium) node group and click **Delete**.

Task 6: Remove the WBS SPI Directory

- 1 From a command line, remove the WBS SPI directory by entering:

```
rm -rf /var/opt/OV/wasspi/wbs
```

Task 7: Remove the Report Package (Optional)

If you installed the WBS SPI report package (on your Windows system running Reporter), remove it:

- 1 On the Windows system running Reporter, from the Control Panel, double-click the **Add/Remove Programs** icon.
- 2 Highlight the WBS SPI report package and click **Remove**.

Task 8: Remove the Graph Package (Optional)

If you installed the WBS SPI graph packages (on the OVO management server and on your system running OVPM), remove them.

On the OVO management server, run the following command:

```
/usr/sbin/swremove WBSSPI-GRAPHS
```

On a Windows system running OVPM, do the following:

- 1 From the Control Panel, double-click the **Add/Remove Programs** icon.
- 2 Select the WBS SPI graph package (HP OpenView SPI for WebSphere Application Server - Graphing Component Integration) and click **Remove**.

On an HP-UX system running OVPM that is not the OVO management server, do the following (if OVPM is installed on the OVO management server, the files are removed in [Task 1: Remove the WBS SPI Software from the Management Server](#) on page 25):

- 1 Verify that the graph package is installed. Type `swlist | grep WBSSPI-GRAPHS`
- 2 Type `swremove WBSSPI-GRAPHS`

On a Solaris system running OVPM that is not the OVO management server, do the following (if OVPM is installed on the OVO management server, the files are removed in [Task 1: Remove the WBS SPI Software from the Management Server](#) on page 25):

- 1 Verify that the graph package is installed. Type `/usr/bin/pkginfo HPOvSpiWbsGc`
- 2 Type `/usr/sbin/pkgrm HPOvSpiWbsGc`

Upgrading WBS SPI

When you upgrade from a previous installation, all your configuration entries are preserved.

To upgrade the WBS SPI, do the following:

- [Task 1: Remove WBS SPI Software from the Management Server](#)
- [Task 2: Delete WBS SPI Templates](#)
- [Task 3: Delete WBS SPI Applications](#)
- [Task 4: Upgrade the Management Server](#)
- [Task 5: Assign Operator Responsibilities](#)
- [Task 6: Assign Templates](#)
- [Task 7: Distribute Templates](#)
- [Task 8: Customize Templates](#)
- [Task 9: Update WebSphere Log Template](#)
- [Task 10: Move Nodes to New Node Group](#)
- [Task 11: Delete Node Groups](#)
- [Task 12: Distribute Actions, Monitors, Commands, and Templates](#) on page 31
- [Task 13: Run the Discover WebSphere Application](#)
- [Task 14: Install the New Report Package \(Optional\)](#)
- [Task 15: Install the New Graph Package \(Optional\)](#)
- [Task 16: Configure a Non-Root Agent on a UNIX Managed Node \(Optional\)](#)

Task 1: Remove WBS SPI Software from the Management Server

- 1 Open a terminal window and log on as root.
- 2 In the terminal window, enter the following:

```
/usr/sbin/swremove WBSSPI  
/usr/sbin/swremove WBSSPI-GRAPHS
```

Task 2: Delete WBS SPI Templates

Delete all WBS SPI templates and template groups that appear under the SPI for WebSphere template group and the SPI for WebSphere template group itself. If you have customized any of the default templates, note these changes (these customizations are not saved).

- 1 Open the Message Source Templates window and double-click the **SPI for WebSphere** template group
- 2 Press **SHIFT+Click** to select all templates and template groups in the SPI for WebSphere template group.
- 3 Click the **Delete from All...** button.
- 4 Click **YES** in response to the message:
Do you really want to delete the template(s)?
- 5 Repeat steps 2 -4 until you have deleted all WBS SPI templates and template groups from the SPI for WebSphere template group.
- 6 Go up one level and delete the SPI for WebSphere template group.



If you have customized templates (copies of WBS SPI default templates) residing in other OVO template groups, you should remove them as well.

Task 3: Delete WBS SPI Applications

Unlike templates, all WBS SPI applications can be removed in a single step.

- 1 Open the Application Bank.
- 2 Right-click the WBS SPI application group and click **Delete**.
- 3 Click **Yes** in response to the following message:
Do you really want to delete the application group?

Task 4: Upgrade the Management Server

The WBS SPI software is available on the HP OpenView Smart Plug-ins for OVO/UNIX DVD.

The instructions that follow show the command line usage of `swinstall`. For HP-UX systems, you can also use the graphical user interface (GUI), but the GUI method is not covered.

For an HP-UX 11.0 management server, enter:

```
swinstall -s /cdrom/OV_DEPOT/11.0HPUX.sdtape WBSPI
```

For a Solaris management server, enter:

```
swinstall -s /cdrom/OV_DEPOT/SOLARIS.sdtape WBSPI
```

Task 5: Assign Operator Responsibilities

- 1 Log on to OVO as administrator (`opc_adm`).
- 2 Open the User Bank window, right-click the `opc_adm` user, and click **Modify**.
- 3 Click **Responsibilities** in the Modify User:opc_adm user window.

- 4 For WBSSPI and WebSphere Message Groups, ensure all check boxes are selected.
- 5 Assign the WBSSPI Node or Message Groups to any other appropriate operators.
- 6 Click **Close**.

Task 6: Assign Templates

Assign the WBSSPI-Discovery and WBSSPI-Messages templates to the management server:

- 1 Open the Node Bank window and highlight the management server.
- 2 From the Actions menu, select **Agents** → **Assign Templates**. The Define Configuration window opens.
- 3 Click **Add**. The Add Configuration window opens.
- 4 Click **Open Template Window**. The Message Source Templates window opens.
- 5 From the Message Source Templates window, in the Template Groups pane, select the **SPI for WebSphere** template group.
- 6 From the Message Source Templates window, in the right pane, select the **WBSSPI-Discovery** and **WBSSPI-Messages** templates.
- 7 From the Add Configuration window, click **Get Template Selections**. The WBSSPI-Messages and WBSSPI-Discovery templates appear in the right pane.
- 8 From the Add Configuration window, click **OK**.

Task 7: Distribute Templates

Distribute the WBSSPI-Discovery and WBSSPI-Messages templates to the management server:

- 1 Open the Node Bank window and highlight the management server.
- 2 From the Actions menu, select **Agents** → **Install/Update SW & Config**.
- 3 In the Target Nodes section, select **Nodes in List Requiring Update**.
- 4 In the Install/Update Software and Configuration window check the **Templates** check box.
- 5 Select **Force Update**.
- 6 Click **OK**.

The following message is displayed in the Message Browser:

```
The following configuration information was successfully distributed:  
Templates
```

The WBSSPI-Discovery and WBSSPI-Messages templates are distributed to the management server.

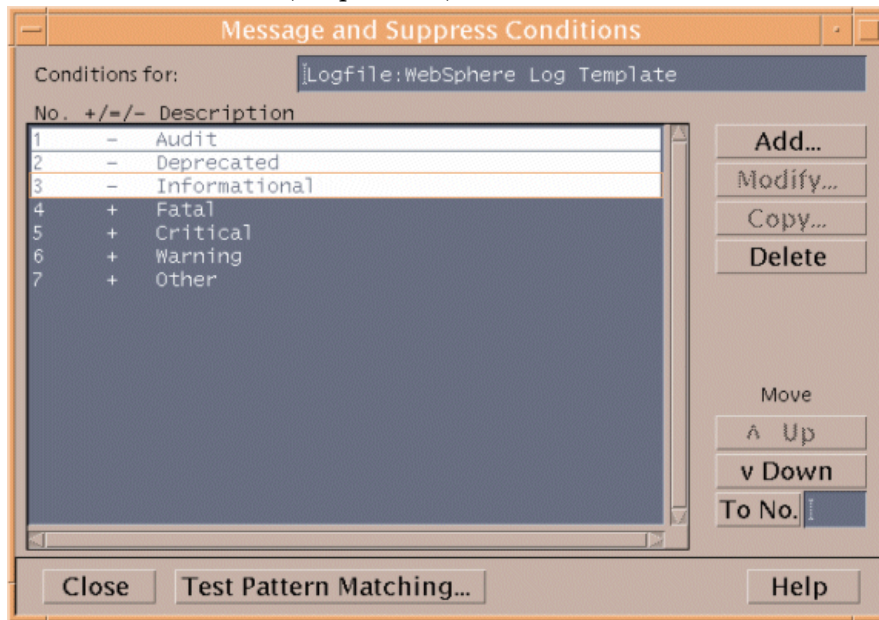
Task 8: Customize Templates

If you noted any customizations in [Task 2: Delete WBS SPI Templates](#) on page 28, make a copy of the default templates, and then make these same customizations to the copies. In this version of the WBS SPI, the templates are no longer grouped by WebSphere version numbers.

Task 9: Update WebSphere Log Template

Update the audit, deprecated, and informational suppress conditions for the WebSphere Log Template:

- 1 From the Message Source Templates window, open the SPI for WebSphere template group.
- 2 Select a WBSSPI-Templates impact group (High, Low, and Medium) and do the following:
 - a Open the impact group.
 - b Open the WBSSPI-Logfiles group.
 - c Select the WebSphere Log Template and click **Conditions**.
 - d Move the Audit, Deprecated, and Informational conditions to the top of the list.



- e Click **Close**.

Task 10: Move Nodes to New Node Group

Move all managed nodes that are in the SPI for WebSphere node groups to the new WebSphere node group.

- 1 Open the Node Bank and select the **SPI for WebSphere** node group.
- 2 Double-click each subgroup in the **WebSphere 4.0** node group and note the managed nodes in it.
- 3 Go back to the top level of the node bank (where the WebSphere node group is displayed)
- 4 Drag and drop or copy and paste the nodes (noted in step 2) from the IP submap to the appropriate **WebSphere** node group.

Task 11: Delete Node Groups

Delete all versioned node groups that are in the SPI for WebSphere node group (WebSphere 4.0).

- 1 Open the Node Bank and select the **SPI for WebSphere** node group.
- 2 Select the **WebSphere 4.0** and, from the Edit menu, click **Delete**.
- 3 Click **Yes** in response to the following message:

```
Do you really want to delete the node group?
```

Task 12: Distribute Actions, Monitors, Commands, and Templates

- 1 At the OVO console, in the Node Bank window, select the nodes or node group on which to install the WBS SPI.
- 2 From the Node Bank's Actions menu select **Agents → Install/Update SW & Config**.
- 3 In the Install/Update OVO Software and Configuration window select the following component check boxes:
 - Templates
 - Actions
 - Monitors
 - Commands

Using this dialog, deploy updated components to the managed nodes.

- 4 Check the Force Update check box.
- 5 Select the Nodes in list button. Upon completion, the following message and appears in the Message Browser for each managed node:

```
The following configuration information was successfully distributed:  
Actions Commands Monitors Templates.
```



You may see some WBS SPI errors in the message browser which you can ignore (these errors are the result of the transition to the updated programs). WBS-SPI templates/programs are updated on the Management Server and selected managed nodes. These errors are resolved when the upgrade is complete.

Task 13: Run the Discover WebSphere Application

You must run the Discover WebSphere application but there is no need to re-enter any of the WBS SPI configuration data (all configuration data is preserved). To re-deploy the file, you can drag and drop multiple nodes at once, node groups, or single nodes. When you re-deploy the file, relevant information is updated, transmitted, and stored on the node.

- 1 At the OVO console, select the nodes in the Node Bank window.
- 2 From the Window menu, select **Application Bank**.
- 3 In the Application Bank window select **WBSSPI → WBSSPI Admin → Discover WebSphere**. (If the items do not appear, select **Map → Reload**.)

- 4 The Introduction window opens.

Click **Next**.

- 5 A second Introduction window opens. This window displays information about which properties may be required in order for the discovery process to work.
Read this information and click **Next**.
- 6 Modify the configuration using configuration editor.

➤ If you have set the `GRAPH_SERVER` property, note that this property is no longer supported in the WBS SPI. Instead, set the `GRAPH_URL` property.

➤ If you have set the `UDM_DEFINITIONS_FILE` property, note that this property will not be supported in future versions of the WBS SPI. Note the locations of the UDM files on your managed nodes and delete any occurrence of the `UDM_DEFINITIONS_FILE` property from your configuration.

If you individually configured UDMs on your managed nodes, you must instead configure these UDMs on the management server in the `/opt/OV/wasspi/wbs/conf/wasspi_wbs_udmDefinitions.xml` file (or, set the `UDM_DEFINITIONS_SOURCE` property to use another file).

Once you have consolidated your UDMs on the management server, delete your old UDM files from the managed nodes and distribute the new UDM file to the managed nodes using the Deploy UDM application.

- 7 Click **Next** to save any changes and exit the editor.
- 8 The Confirm Operation window opens. Click **OK**.

➤ If you click **Cancel** and made changes to the configuration, those changes remain in the configuration on the management server. To make the changes to the selected managed nodes' configuration, you must select those nodes in the Node Bank window, start the Discover WebSphere application, click **Next** from the configuration editor, and then click **OK**.

➤ Do not close the Discover WebSphere application window until the discovery process has completed. The discovery process may take several minutes to complete.

Task 14: Install the New Report Package (Optional)

If you installed an older version of the WBS SPI report package (on your Windows system running Reporter), you must uninstall it and install the new WBS SPI report package.

- 1 On the Windows system running Reporter, from the Control Panel, double-click the **Add/Remove Programs** icon.
- 2 Highlight the WBS SPI report package and click **Remove**.
- 3 Follow the steps to install the WBS SPI report package in [Integrating with HP OpenView Reporter](#) on page 77.

Your upgrade is now complete.

Task 15: Install the New Graph Package (Optional)

If you installed an older version of the WBS SPI graph package (on your system running OVPM), you must uninstall it and install the new WBS SPI graph package.

On a Windows system running OVPM, do the following:

- 1 From the Control Panel, double-click the **Add/Remove Programs** icon.
- 2 Highlight the WBS SPI graph package (HP OpenView SPI for WebSphere Application Server - Graphing Component Integration) and click **Remove**.
- 3 Follow the steps to install the WBS SPI report package in [Integrating with HP OpenView Performance Manager](#) on page 82.

On an HP-UX system running OVPM that is not the OVO management server, do the following (if OVPM is installed on the OVO management server, the files are automatically updated when you install the SPI software):

- 1 Verify that the graph package is installed. Type `swlist | grep WBSspi-GRAPHS`
- 2 Type `swremove WBSspi-GRAPHS`
- 3 Follow the steps to install the WBS SPI graph package in [Integrating with HP OpenView Performance Manager](#) on page 82.

On a Solaris system running OVPM that is not the OVO management server, do the following (if OVPM is installed on the OVO management server, the files are automatically updated when you install the SPI software):

- 1 Verify that the graph package is installed. Type `/usr/bin/pkginfo HPOvSpiWbsGc`
- 2 Type `/usr/sbin/pkgrm HPOvSpiWbsGc`
- 3 Follow the steps to install the WBS SPI graph package in [Integrating with HP OpenView Performance Manager](#) on page 82.

Your upgrade is now complete.

Task 16: Configure a Non-Root Agent on a UNIX Managed Node (Optional)

If you are running or planning to run a non-root HTTPS agent on a UNIX managed node, refer to [Configuring a Non-Root HTTPS Agent on a UNIX Managed Node \(OVO 8.x Only\)](#) on page 50 for more information.

3 Configuring the WBS SPI

This chapter covers configuring the Smart Plug-in for WebSphere Application Server (WBS SPI) for use with OpenView Operations (OVO). To successfully configure WBS SPI, you must complete all configuration prerequisites, complete WBS SPI configuration (for managed nodes and the management server), and complete additional configuration based on your environment.

Configuration Prerequisites

On the OVO management server, complete the following tasks before configuring WBS SPI:

- [Task 1: Configure the Management Server to Launch your Web Browser](#)
- [Task 2: Assign Operator Responsibilities for opc_admin](#)
- [Task 3: Assign Templates](#)
- [Task 4: Distribute Templates](#)
- [Task 5: Update the remactconf.xml File \(OVO 8.x Only\)](#)

Task 1: Configure the Management Server to Launch your Web Browser

WBS SPI uses the `ovweb` utility to start your web browser for displaying graphed metrics (which requires HP OpenView Performance Manager). If you do not use OpenView Performance Manager (OVPM), skip this task.

- 1 Enter the browser invocation command in the `ovweb.conf` file. If no browser invocation command is included in the `ovweb.conf` file, `ovweb` tries to start Netscape Navigator (which must be version 6.0 or higher).



The `ovweb.conf` file must be located in the directory specified by the environment variable `$OV_CONF` (used by OVO). To find the OVO directory structure on your management server, open the `/opt/OV/bin/ov.envvars.sh` file and look for the `$OV_CONF` definition.

The browser invocation command must contain `%s` to allow WBS SPI to pass a URL to the browser. Open the file and insert the command according to the entry syntax and example as follows:

Syntax: Browser: `<browser command> %s`

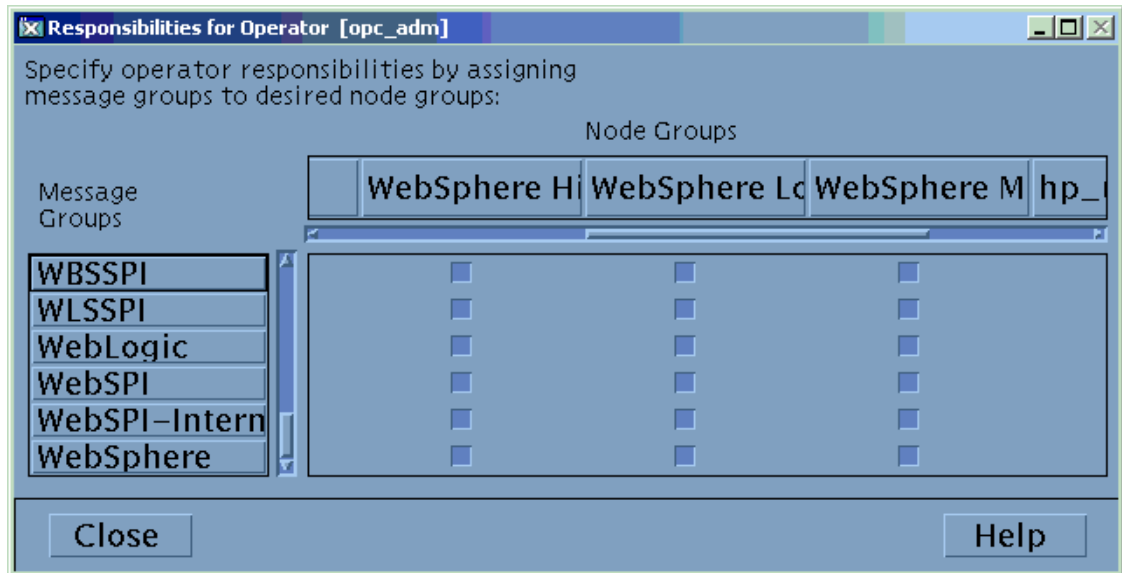
Example: Browser: `/opt/netscape/netscape %s`

- 2 Check the Web browser setting. To display the WBS SPI graphs, ensure that your browser is JavaScript enabled. Check the setting within the browser's Preferences.
- 3 In [Task 3: Launch Discover WebSphere](#) on page 44, set the following conditional properties:
 - If you are using OVPM, set the `GRAPH_URL` property.

For more information about launching a browser in OpenView Operations, consult the man pages for `ovweb`, `ovweb.conf`, and `ov.envvars`. To access instructions for enabling graph displays, at a command prompt enter: `man ovweb`

Task 2: Assign Operator Responsibilities for `opc_adm`

- 1 Log on to OVO as administrator (`opc_adm`).
- 2 Open the User Bank window, right-click the `opc_adm` user, and select **Modify**.
- 3 Click **Responsibilities** in the Modify User:`opc_adm` user window.
- 4 For WBSSPI and WebSphere Message Groups, ensure all boxes are checked.



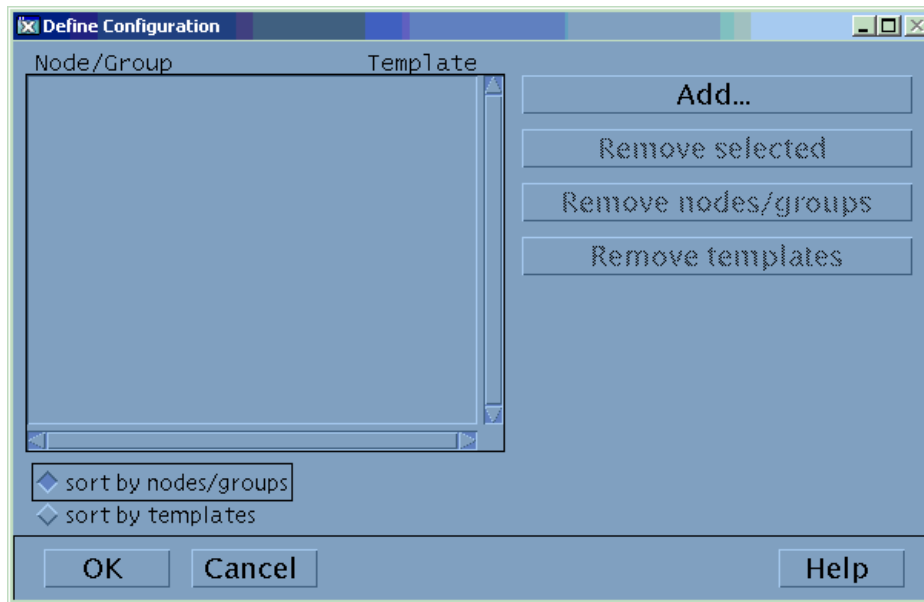
- 5 Assign the WBSSPI Node or Message Groups to any other appropriate operators.
- 6 Click **Close**.

Task 3: Assign Templates

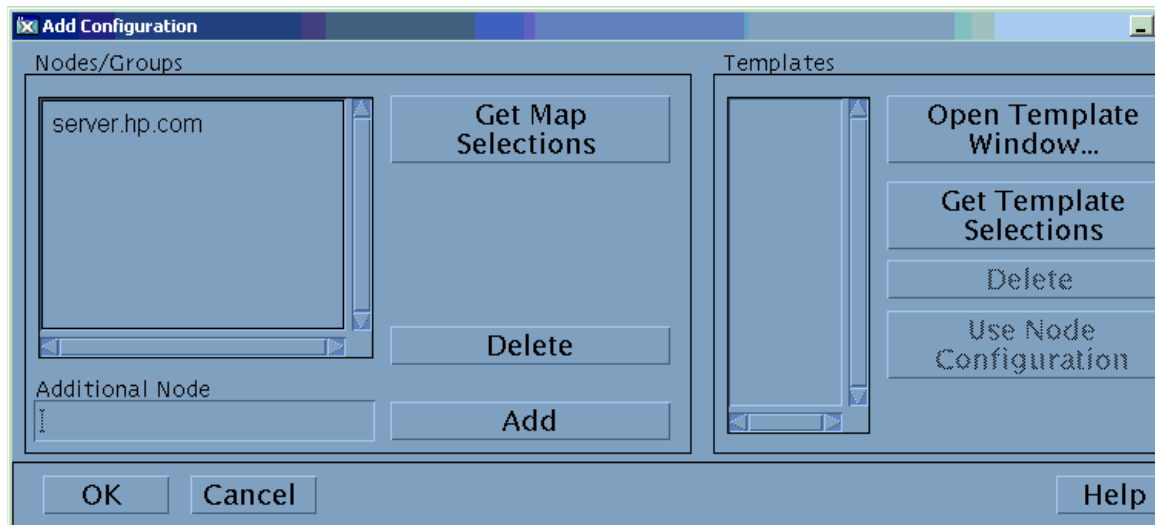
Assign the WBSSPI-Discovery and WBSSPI-Messages templates to the management server:

- 1 Open the Node Bank window and highlight the management server.

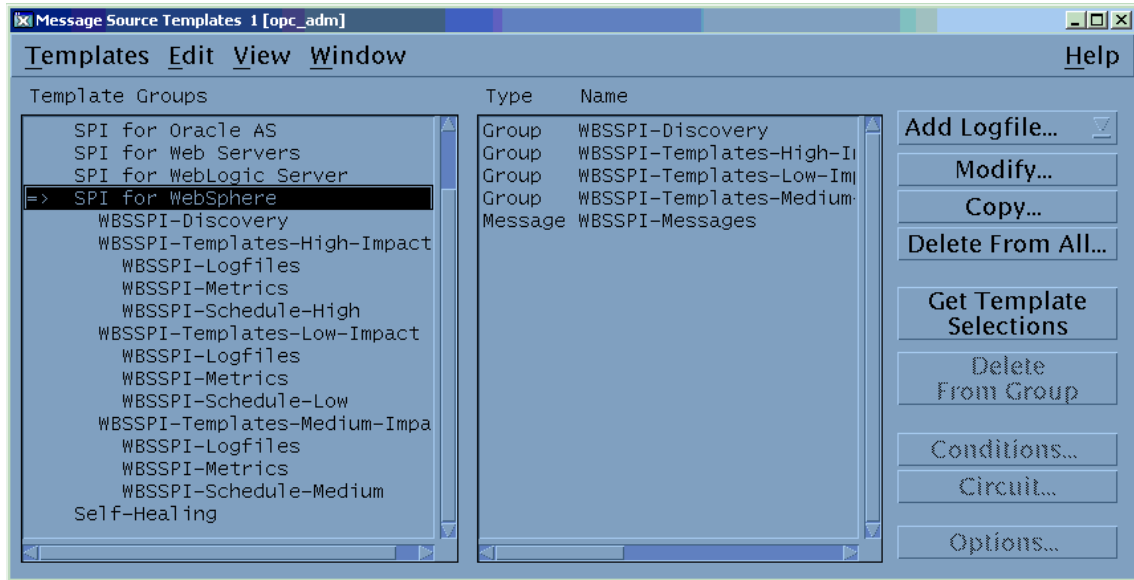
- From the Actions menu, select **Agents** → **Assign Templates**. The Define Configuration window opens.



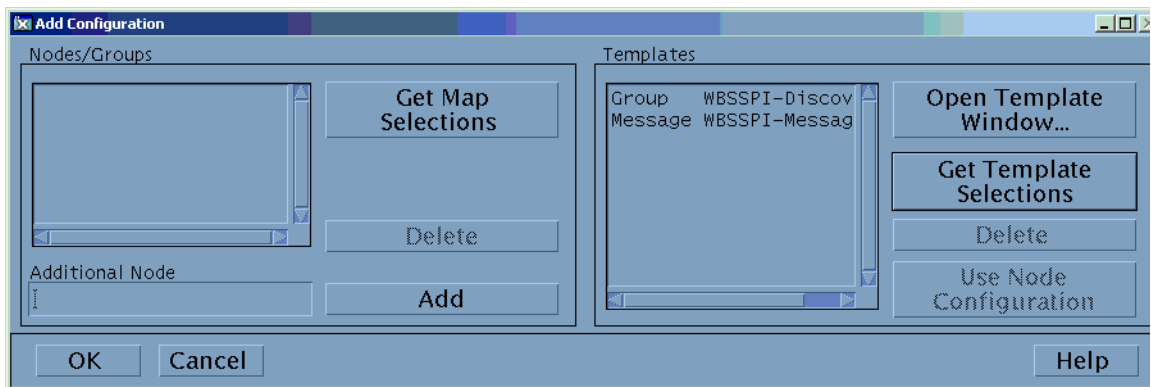
- Click **Add**. The Add Configuration window opens.



- 4 Click **Open Template Window**. The Message Source Templates window opens.



- 5 From the Message Source Templates window, in the Template Groups pane, select the **SPI for WebSphere** template group.
- 6 From the Message Source Templates window, in the right pane, select the **WBSSPI-Discovery** and **WBSSPI-Messages** templates.
- 7 From the Add Configuration window, click **Get Template Selections**. The WBSSPI-Discovery and WBSSPI-Messages templates appear in the right pane.



- 8 In the Add Configuration window, click **OK**.

Task 4: Distribute Templates

Distribute the WBSSPI-Discovery and WBSSPI-Messages templates to the management server:

- 1 Open the Node Bank window and highlight the management server.
- 2 From the Actions menu, select **Agents** → **Install/Update SW & Config**.
- 3 In the Target Nodes section, select **Nodes in List Requiring Update**.
- 4 In the Install/Update Software and Configuration window check the **Templates** check box.
- 5 Select **Force Update**.

6 Click **OK**.

The following message is displayed in the Message Browser:

```
The following configuration information was successfully distributed:  
Templates
```

The WBSSPI-Discovery and WBSSPI-Messages templates are distributed to the management server.

Task 5: Update the `remactconf.xml` File (OVO 8.x Only)

If you are running DCE-based agents on your managed nodes, the discovery process must be allowed to run automatic actions on the management server. Do the following:

- 1 Merge (if you have updated this file) or replace the `/etc/opt/OV/share/conf/OpC/mgmt_sv/remactconf.xml` with the `/opt/OV/wasspi/wbs/OV/remactconf.xml` file.
- 2 Restart the OVO management server: `opcsv -start` (you must restart the management server if you modify the `remactconf.xml` file)

If the `remactconf.xml` file is not updated, the discovery process fails.

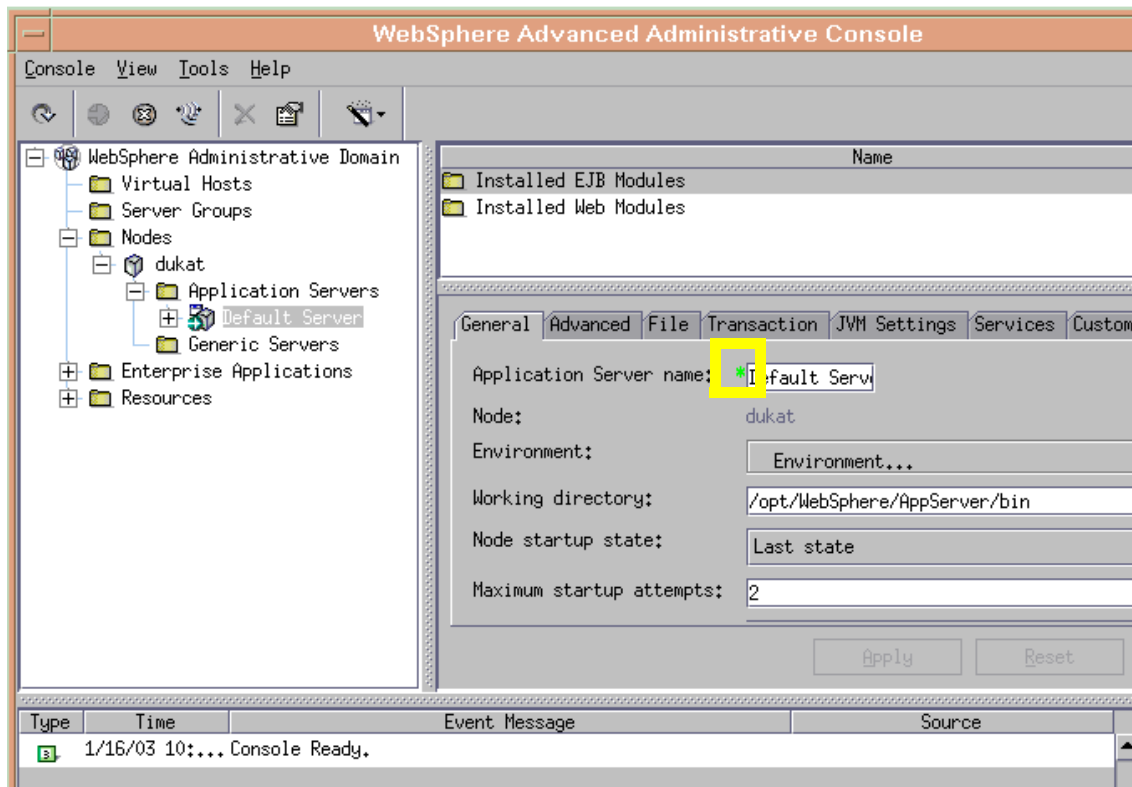
WBS SPI Configuration (Managed Nodes)

To configure WBS SPI, complete the following tasks (for each managed node):

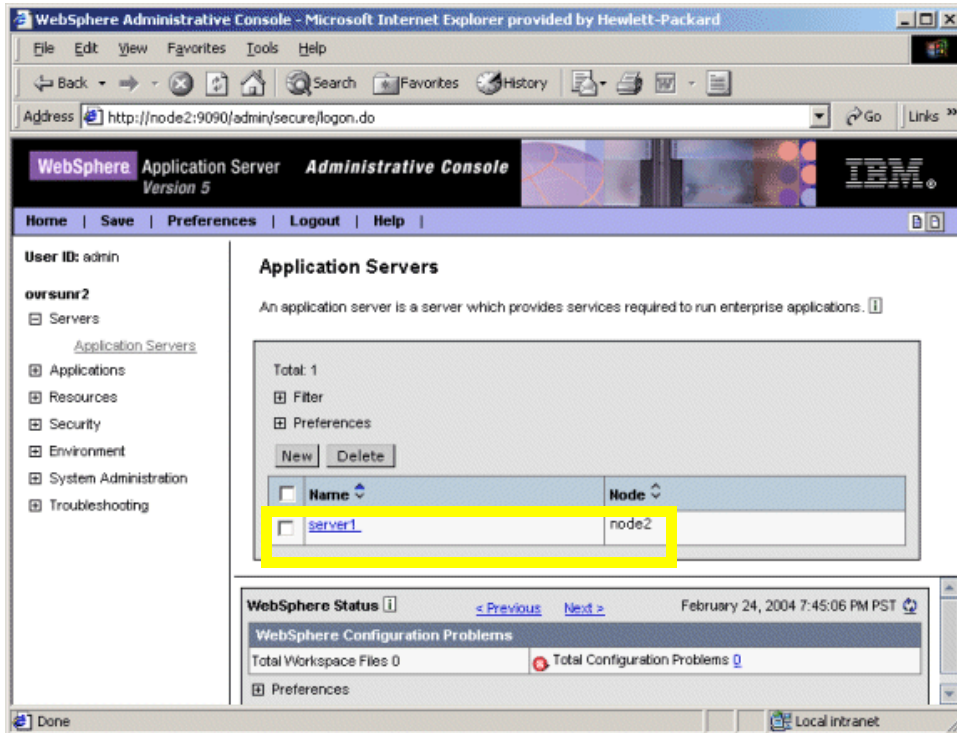
- Task 1: Verify the Application Server Status
- Task 2: Collect WebSphere Login Information
- Task 3: Enable PMI

Task 1: Verify the Application Server Status

Verify that your application servers are running. For WebSphere Server version 4, check the server's status from the WebSphere administrative console. Under the General tab, a colored marker appears next to the Application Server name. A green marker means the server is running. A red marker means the server is not running.



For WebSphere Server version 5 and above, check the server's status from the WebSphere administrative console



If you cannot verify the server's status using the administrative console, run the following commands on the managed node:

- UNIX: `<WebSphere_Install_Dir>/bin/serverStatus.sh -all`
For example: `/opt/WebSphere/AppServer/bin/serverStatus.sh -all`
- Windows: `<WebSphere_Install_Dir>\bin\serverStatus.bat -all`
For example: `C:\Program Files\WebSphere\AppServer\bin\serverStatus.bat -all`

Task 2: Collect WebSphere Login Information

If security is enabled on the WebSphere server, collect the username and password for each WebSphere Admin Server. The user must have the local WebSphere administrator privileges assigned for the WebSphere Admin Server.

The username and password are needed by the WBS SPI discovery process to gather basic configuration information and by the WBS SPI data collector to collect metrics.

Configuration of WBS SPI is simplified if the same username and password are used by each WebSphere Admin Server.

If you are using WebSphere version 5.1.0 or earlier, you must use the default WebSphere Admin Server username and password (the username and password configured when the WebSphere application server was installed/configured).

If you are using WebSphere version 5.1.1 or later, you should be able to use the username and password for users/groups assigned to the administrator or operator role.

If you are using LDAP directory, then to access the WebSphere Console from LDAP, you must create a user account similar to the user account of LDAP in the local WebSphere instance. You must grant Administrator privileges to this user.

Task 3: Enable PMI

If you are running WebSphere server version 5, enable PMI using the WebSphere administrative console and restart the server. Refer to http://publib.boulder.ibm.com/infocenter/ws51help/index.jsp?topic=/com.ibm.websphere.base.doc/info/aes/ae/tprf_prfstartadmin.html for more information.

PMI is necessary for collecting metrics.

WBS SPI Configuration (from the Management Server)

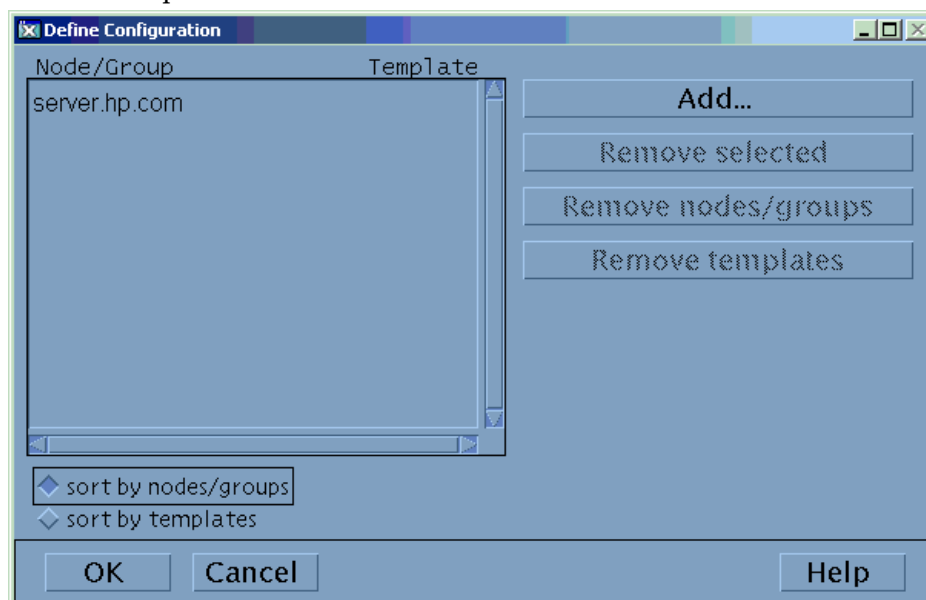
To configure WBS SPI, from the management server, complete the following tasks:

- Task 1: Assign the WBSSPI-Messages Template
- Task 2: Distribute Templates, Actions, Monitors, and Commands
- Task 3: Launch Discover WebSphere
- Task 4: Verify the Discovery Process
- Task 5: Add Nodes to a WBS SPI Node Group
- Task 6: Distribute WBS SPI Templates
- Task 7: Complete Configuration
- Task 8: Run the Verify Application

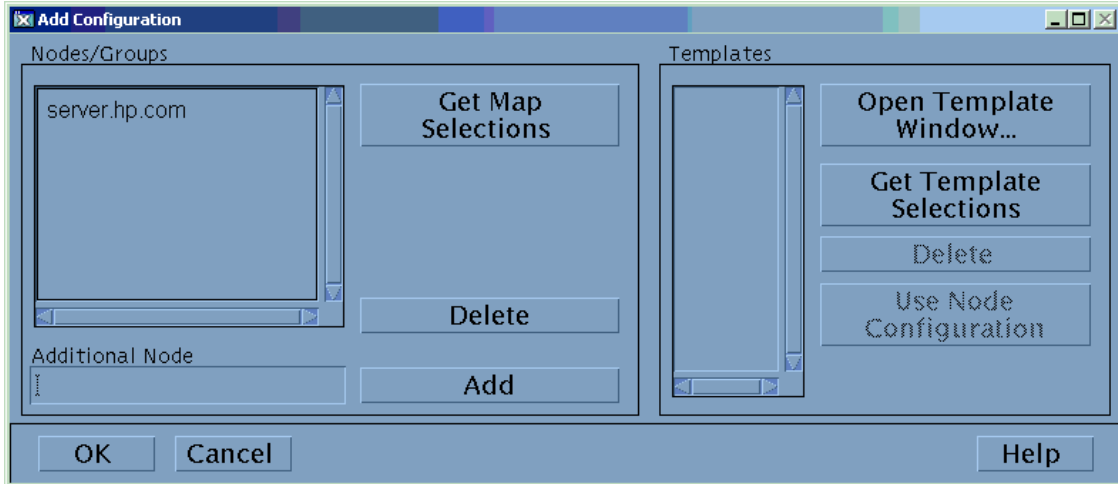
Task 1: Assign the WBSSPI-Messages Template

Assign the WBSSPI-Messages template to the managed nodes:

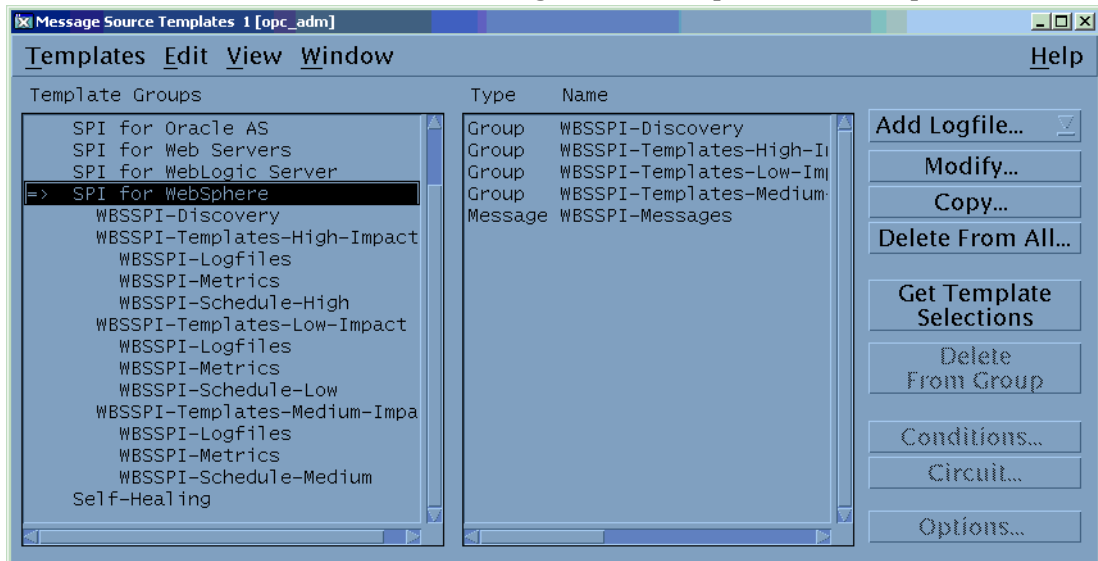
- 1 Open the Node Bank window and highlight the managed nodes.
- 2 From the Actions menu, select **Agents** → **Assign Templates**. The Define Configuration window opens.



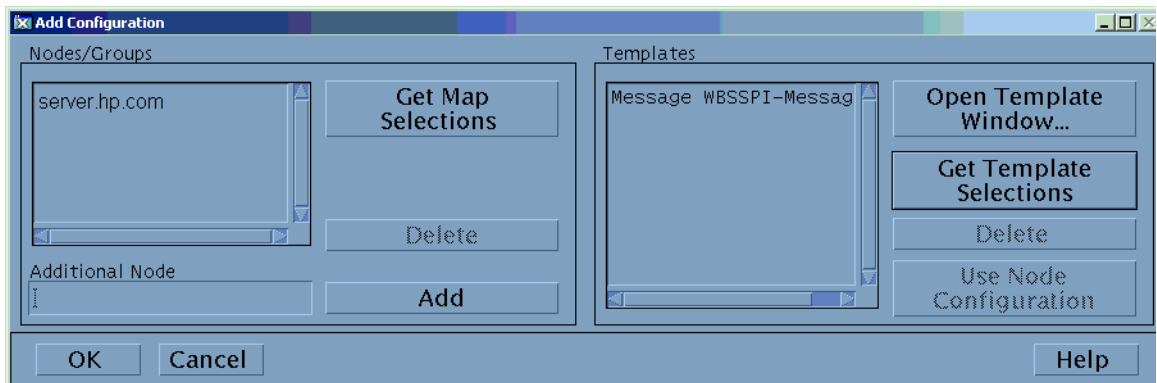
- 3 Click **Add**. The Add Configuration window opens.



- 4 Click **Open Template Window**. The Message Source Templates window opens.



- 5 From the Message Source Templates window, in the Template Groups pane, select the **SPI for WebSphere** template group.
- 6 From the Message Source Templates window, in the right pane, select the **WBSSPI-Messages** template.
- 7 From the Add Configuration window, click **Get Template Selections**. The WBSSPI-Messages template appears in the right pane.

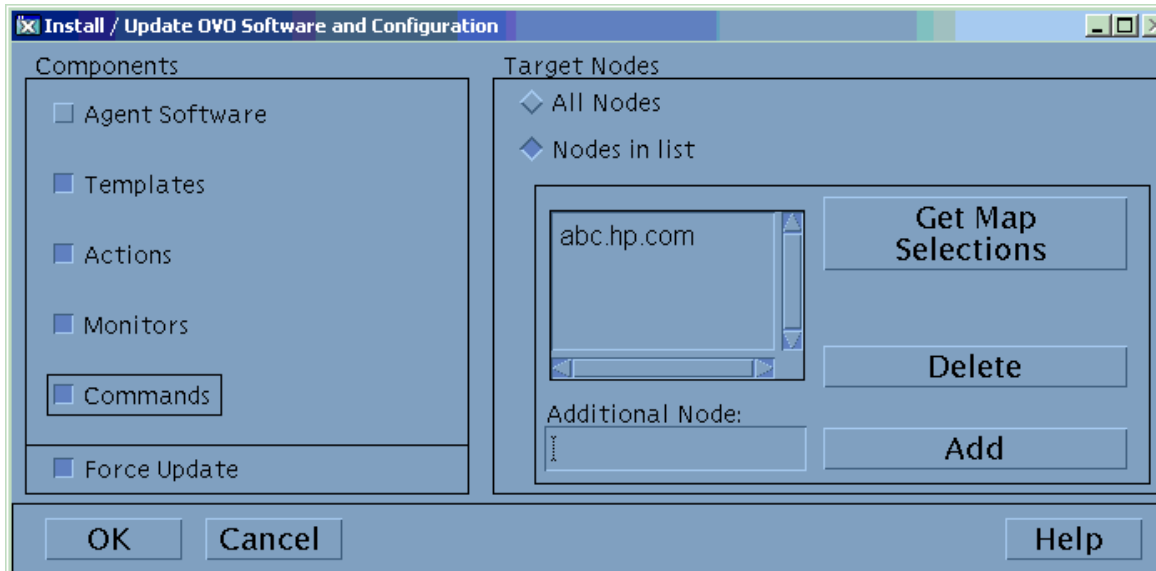


- 8 From the Add Configuration window, click **OK**.

Task 2: Distribute Templates, Actions, Monitors, and Commands

- 1 Highlight the managed nodes on which to install the SPI components.
- 2 From the Node Bank window's Actions menu select **Agents** → **Install/Update SW & Config**.
- 3 In the Install/Update VPO Software and Configuration window select the following component check boxes:
 - Templates
 - Actions
 - Monitors
 - Commands

Using this dialog, you deploy program components to the managed nodes.



- 4 Select the **Force Update** check box.
- 5 Select the **Nodes in list** option button.
- 6 Click **OK**.

Upon completion, the following message appears in the Message Browser for each managed node:

```
The following configuration information was successfully distributed:  
Templates Actions Commands Monitors
```

The WBS-SPI is now installed on the management server and selected managed nodes. If you want to install the WBS SPI on other managed nodes, repeat these steps.

Task 3: Launch Discover WebSphere

- 1 At the OVO console, highlight the nodes in the Node Bank window.
- 2 From the Window menu, select **Application Bank**.

- 3 In the Application Bank window select **WBSSPI** → **WBSSPI Admin** and double-click **Discover WebSphere**. (If the above does not appear as described, select **Map** → **Reload**.)
- 4 The Introduction window opens. This window contains brief information about the Discovery application.

Click **Next**.

- 5 A second Introduction window opens. This window displays information about which properties may be required in order for the discovery process to work.

Read this information and click **Next**.

- 6 If you have already set the LOGIN and PASSWORD properties, the configuration editor opens. Go to the next step.

If you have not set the LOGIN and PASSWORD properties, the Set Access Info for Default Properties window opens.



If security is *not* enabled on the application server, leave these fields blank, click **Next**, and go to step 9.

If security *is* enabled on the application server, the WebSphere Admin Server login information is required. Enter the username and password collected in [Task 2: Collect WebSphere Login Information](#) on page 41. The LOGIN and PASSWORD properties are set to this information.

The LOGIN and PASSWORD properties set in this window are used as the default WebSphere Admin Server login and password (they are set at the global properties level). That is, if no NODE level or server-specific LOGIN and PASSWORD properties are set, this WebSphere login and password are used by WBS SPI to log on to all WebSphere Admin Servers. For more information about the configuration structure, refer to [Structure](#) on page 141.

If the WebSphere Admin Server login and password are the same for all WebSphere application servers on all OVO managed nodes, do the following:

- a Set the LOGIN and PASSWORD properties in the Set Access Info for Default Properties window.
- b Click **Next**.
- c Go to step 9.

If the WebSphere Admin Server login and password are different for different instances of WebSphere, you must customize the WBS SPI configuration by setting the LOGIN and PASSWORD properties at the NODE or server-specific level (for more information about the configuration structure, refer to [Structure](#) on page 141):

- a Set the LOGIN and PASSWORD properties to the most commonly used WebSphere login and password in the Set Access Info for Default Properties window.
 - b Click **Customize** to open the configuration editor.
- 7 From the configuration editor, set the configuration properties. Refer to [Appendix B, The Configuration](#), for more information about using the configuration editor.
 - 8 Click **Next** to save any changes and exit the editor.
 - 9 The Confirm Operation window opens. Verify the nodes on which the operation is to be performed. Click **OK**.
- If you click **Cancel** and made changes to the configuration, those changes remain in the configuration on the management server. To make the changes to the selected managed nodes' configuration, you must select those nodes in the Node Bank window, start the Discover WebSphere application, click **Next** from the configuration editor, and then click **OK**.
- Wait for the discovery process to complete before going to the next task. The discovery process may take several minutes to complete.

Task 4: Verify the Discovery Process

- 1 Verify that the following messages appear in the Discover WebSphere application window (the Discover WebSphere application has completed successfully):

```
Discovery started on node: <node>
Finished running the Discovery application
```

If the Discover WebSphere application does not complete successfully, the following message appears in the application window:

```
Failed to run discovery on node <node>
```

Refer to [Troubleshooting the Discovery Process](#) on page 98 for information on how to troubleshoot the discovery process.
- 2 Verify that the following message appears in the message browser for each managed node:

```
WASSPI-602- Updating the WBSSPI configuration data with discovered
information
```

Depending on the number of managed nodes in your environment, it may take several minutes for these messages to display for all managed nodes.
- 3 If Service Navigator is already running, select **File** → **Reload Configurations**. In the Services tree, open the Application node and look for the WebSphere service.
- 4 Run the **Config WBSSPI** application to verify the properties set by the discovery process. Refer to [Configure WBSSPI](#) on page 166 for more information about the configuration editor.

If you are having problems with the discovery process, refer to [Troubleshooting the Discovery Process](#) on page 98 for information on how to troubleshoot the discovery process.

Task 5: Add Nodes to a WBS SPI Node Group

WBS SPI automatically creates three node groups which have been assigned the matching WebSphere High, Medium, or Low template group:

- WebSphere High
- WebSphere Medium
- WebSphere Low

When you assign a managed node to a WBS SPI node group, you are also assigning the templates you want to deploy on the node.



When data collection for the template group begins, the PMI level of the node is adjusted as necessary to comply with the template group's impact level. For example, data collection for a WebSphere High Impact group results in a PMI level adjustment to high for the node if the WebSphere PMI level is currently not at high. See [WebSphere Template Groups and System PMI Levels](#) on page 22 for additional details.

The High template group contains all WBS SPI metrics, while the Medium group contains Medium and Low metrics and the Low contains only Low metrics.

To add nodes to a WBS SPI node group, do the following:

- 1 From the Window menu, open both the Node Group Bank and the Node Bank to display (side-by-side) the WBS SPI node group and the managed nodes.
- 2 Drag and drop managed nodes running a WebSphere server into the appropriate WBS SPI node group, according to the PMI level desired for the node.

Task 6: Distribute WBS SPI Templates

- 1 Open the Node Group Bank window and highlight a WBS SPI node group.
- 2 From the Actions menu, select **Agents** → **Install/Update SW & Config**.
- 3 In the Target Nodes section, select the **Nodes in List Requiring Update** radio button.
- 4 In the Install/Update Software and Configuration window check the **Templates** check box.
- 5 Select **Force Update**.
- 6 Click **OK**.

The following message is displayed in the Message Browser:

```
The following configuration information was successfully distributed:  
Templates
```

The WBS-SPI templates are now distributed to the selected node group. WBS-SPI monitors now begin running according to their specific collection interval.



If you use HP OpenView Reporter, see the [Chapter 5, Integrating HP OpenView Reporting and Graphing Products with WBS SPI](#) for information on integrating WBS-SPI with Reporter for generating WebSphere server reports that show more consolidated information.

Task 7: Complete Configuration

Before configuration is complete, the configuration information on the management server and managed nodes must be updated. You can either:

- Wait 10 minutes for the automatic configuration template to run; or
- Run the Config WBSSPI application (which updates the configuration information on the management server and managed nodes). Refer to [Configure WBSSPI](#) on page 166 for more information.

Task 8: Run the Verify Application

Run the Verify application to verify that WBS SPI is properly installed and configured (refer to [Verify](#) on page 174 for more information about this application):

- 1 At the OVO console, select a WebSphere node group in the Node Group Bank window.
- 2 From the Window menu, select **Application Bank**.
- 3 In the Application Bank window select **WBSSPI** → **WBSSPI Admin** and double-click **Verify**.

Additional WBS SPI Configuration

Based on your WebSphere server configuration and application needs, you must finish WBS SPI configuration by setting additional configuration properties and/or installing and configuring additional components. Setting additional properties and configuring additional components depends on your environment.

Conditional Properties

Based on your WebSphere configuration and application needs, you may need to set one or more conditional properties. If you meet a condition, set the properties listed to the left of the condition (these properties are not automatically discovered by the discovery process). For more information about the properties, refer to [Configuration Properties](#) on page 153.

Table 1 Conditional Properties

Conditional Property	When Required
ALIAS	Required if more than one application server on a system share the same server name. The discovery process automatically sets the ALIAS property, but you may want to edit this value as this is the name used in messages, reports, and graphs.
COLLECT_METADATA	Required if you want to utilize MBean information in the JMX Metric Builder application to create UDMs.
JAVA_HOME	The value of JAVA_HOME must include the path to JAVA.EXE (path to the Bin directory of Java) and not the path to the actual JAVA_HOME directory. Required if: <ul style="list-style-type: none"> • using a Java version not supplied with the WebSphere server. • there are multiple Java installation directories.

Table 1 Conditional Properties

Conditional Property	When Required
ADDRESS	Required if a WebSphere server is configured to a virtual IP address or is on a remote node.
START_CMD, STOP_CMD, and USER	Required if you want to start and stop a WebSphere application server from the OVO console.
LOGIN and PASSWORD	Required if security is enabled on a WebSphere server.
MAX_ERROR_LOG_SIZE	Required if you want an error logfile larger than 2 MB.

Setting Conditional Properties

- 1 At the OVO console, select the nodes in the Node Bank window.
- 2 From the Window menu, select **Application Bank**.
- 3 In the Application Bank window select **WBSSPI** → **WBSSPI Admin** → **Config WBSSPI**. (If the items do not appear, select **Map** → **Reload**.)

The Introduction window opens.

- 4 Click **Next**.
- 5 From the configuration editor, set the properties. Refer to [The Configuration Editor](#) on page 143 for more information about using the configuration editor.
- 6 Optionally, click **Save** to save any changes made to the configuration. Once you save your changes, you cannot automatically undo them.
- 7 Click **Finish** or **Next** to save any changes and exit the editor.

If you click **Next**, the Confirm Operation window opens. Click **OK**.



If you click **Cancel** and made changes to the configuration, those changes remain in the configuration on the management server. To make the changes to the selected managed nodes' configuration, you must select those nodes in the Node Bank window, start the Config WBSSPI application, click **Next** from the configuration editor, and then click **OK**.

- 8 If you have added an application server or added/edited the HOME and/or PORT properties, run the Discover WebSphere application on the managed nodes on which the application server/properties were added or edited. Running the Discover WebSphere application updates the Service Navigator map.

Configuring a Non-Root HTTPS Agent on a UNIX Managed Node (OVO 8.x Only)

If you are running or planning to run a non-root HTTPS agent on a UNIX managed node (OVO 8.x only), do the following:



You must install the OS-dependent Sudo software package on the UNIX managed node. Sudo is free software available from <http://www.sudo.ws>. The OS-dependent software packages are located at the bottom of the download page (<http://www.sudo.ws/sudo/download.html>). Refer to the release notes for more installation information.

- 1 Switch the HTTPS agent to a non-root user. Refer to the *HTTPS Agent Concepts and Configuration Guide* for more information. This document is available from http://ovweb.external.hp.com/lpe/doc_serv/ under the product Operations for UNIX, version 8.x.
- 2 On the managed node, set the OV_SUDO variable. As root or with OVO agent user privileges, do the following:
 - a Stop all OVO agents. Run the following command:

```
opcagt -kill
```
 - b Set the OV_SUDO variable. Run the following command:

```
ovconfchg -ns ctrl.sudo -set OV_SUDO <sudo_program>
```

where *<sudo_program>* is the location (including the absolute pathname) where sudo is installed (for example, /usr/local/bin/sudo).
 - c Start the OVO agents. Run the following command:

```
opcagt -start
```
 - d Verify OV_SUDO is set. Run the following command:

```
ovdeploy -cmd set | grep SUDO
```

The following displayed:

```
OV_SUDO=<sudo_program>
```
- 3 Configure the managed node. These steps MUST be completed to successfully run the SPI in a non-root HTTPS agent environment.
 - a From the OVO management server, deploy actions, commands, and monitors to the managed node.
 - b Select the node in the Node Bank window.
 - c From the Application Bank window, select **WBSSPI** → **WBSSPI Admin** → **Init Non-Root**.
- 4 Edit the /etc/sudoers file using the visudo editor (installed with sudo):
 - a On the managed node, log in as root.
 - b Open the /<SPI_Config_DIR>/wasspi_wbs_sudoers file
where *<SPI_Config_DIR>* is the location of the SPI's configuration files on a managed node. Refer to [Managed Node File Locations](#) on page 139 for more information.
 - c In a separate window, run the visudo command (for example, type: `/usr/local/sbin/visudo`).
 - d From the wasspi_wbs_sudoers file, copy and append the following lines to the sudoers file:

```

Cmnd_Alias WBSSPI_ADMN = /opt/OV/nonOV/perl/a/bin/perl -S
wasspi_wbs_admin *
Cmnd_Alias WBSSPI_COLL = /opt/OV/nonOV/perl/a/bin/perl -S wasspi_wbs_ca
*
Cmnd_Alias WBSSPI_DISC = /opt/OV/nonOV/perl/a/bin/perl
wasspi_wbs_discovery.pl
Cmnd_Alias WBSSPI_LFEN = /opt/OV/nonOV/perl/a/bin/perl -S wasspi_wbs_le
*
Cmnd_Alias WBSSPI_SHSC = /opt/OV/nonOV/perl/a/bin/perl -S
shs_collector.pl *

Cmnd_Alias WBSSPI_ADMNP = /opt/OV/nonOV/perl/a/bin/perl -S \
/var/opt/OV/bin/instrumentation/wasspi_wbs_admin *
Cmnd_Alias WBSSPI_COLLP = /opt/OV/nonOV/perl/a/bin/perl -S \
/var/opt/OV/bin/instrumentation/wasspi_wbs_ca *
Cmnd_Alias WBSSPI_DISCP = /opt/OV/nonOV/perl/a/bin/perl \
/var/opt/OV/bin/instrumentation/wasspi_wbs_discovery.pl
Cmnd_Alias WBSSPI_LFENP = /opt/OV/nonOV/perl/a/bin/perl -S \
/var/opt/OV/bin/instrumentation/wasspi_wbs_le *
Cmnd_Alias WBSSPI_SHSCP = /opt/OV/nonOV/perl/a/bin/perl -S \
/var/opt/OV/bin/instrumentation/shs_collector.pl *
<OV_Agent_username> <nodename> = NOPASSWD: WBSSPI_ADMN, WBSSPI_COLL, \
WBSSPI_DISC, WBSSPI_LFEN, WBSSPI_SHSC, WBSSPI_ADMNP, WBSSPI_COLLP, \
WBSSPI_DISCP, WBSSPI_LFENP, WBSSPI_SHSCP

```

where *<OV_Agent_username>* is the OVO agent user account and *<nodename>* is the name of the managed node.

- e Save the file and exit the visudo editor. Type **:wq**



Steps 3 and 4 must be performed every time the agent user is switched.

WBS SPI in High Availability Environments

High availability is a general term used to characterize environments that are business critical and therefore are protected against downtime through redundant resources. Very often, cluster systems are used to reach high availability.

You can configure WBS SPI to accommodate cluster environments where failovers allow uninterrupted WBS availability. WBS SPI monitoring, when synchronized with the cluster environment, can switch off from the failed node to the active node.

Configuration Prerequisites

The prerequisites for using WBS SPI in high availability environments are:

- Management Server: HP-UX
- Node: HP-UX MCSG cluster
- OVO 8.x HTTPS Agent version (for details, refer to the Agent cluster support matrix.)

Configuring WBS SPI for High Availability Environments

To configure WBS SPI for use in high availability environments complete the following tasks:

- Task 1: Create the WBS SPI monitoring configuration file
- Task 2: Create the clustered application configuration file
- Task 3: Configure WBS SPI

Task 1: Create the WBS SPI monitoring configuration file

WBS SPI uses a monitoring configuration file `<appl_name>.apm.xml` that works in conjunction with the clustered application configuration file.



`<appl_name>` is the namespace_name. For more information refer to *HP OpenView Operations for UNIX HTTPS Agent Concepts and Configuration Guide*.

The `<appl_name>.apm.xml` file lists all the WBS SPI templates on the managed node so that you can disable/ enable these templates as appropriate, for inactive/active managed nodes.

To create this clustered application configuration file for your WBS environment, follow these steps:

- 1 Use the following syntax to create the `<appl_name>.apm.xml` file:

```
<?xml version="1.0"?>
<APMApplicationConfiguration>
  <Application>
    <Name> ... </Name>
    <Template> ... </Template>
    <StartCommand>wasspi_wbs_perl -S wasspi_wbs_clusterSvrApp -opt
startMonitor $instance</StartCommand>
```

```
<StopCommand>wasspi_wbs_perl -S wasspi_wbs_clusterSvrApp -opt
stopMonitor $instance</StopCommand>
```

```
</Application>
```

```
</APMAApplicationConfiguration>
```

- 2 Enter application namespace under the `<Name></Name>` tag.
- 3 After the file is created save it in the `$OvDataDir/bin/instrumentation/conf` directory.

▶ If there is only one WBS server running on the node, you must mention *All* under the `<template>` tag.

Sample `<appl_name>.apm.xml` file

```
<?xml version="1.0"?>
<APMAApplicationConfiguration>
  <Application>
    <Name>namespace_name</Name>
    <Template>All</Template>
    <StartCommand>wasspi_wbs_perl -S wasspi_wbs_clusterSvrApp -opt
startMonitor $instance</StartCommand>
    <StopCommand>wasspi_wbs_perl -S wasspi_wbs_clusterSvrApp -opt
stopMonitor $instance</StopCommand>
  </Application>
</APMAApplicationConfiguration>
```

▶ `<appl_name>.apm.xml` is dependent on the application namespace. It is not dependent on the instance level. Therefore, the start and stop actions are provided with the associated instance name as their first parameter when they are executed at package switch time. The environment variable `$instanceName` is set by CIAW when start or stop tasks are performed.

Task 2: Create the clustered application configuration file

The clustered application configuration file `apminfo.xml`, working in conjunction with the `<appl_name>.apm.xml` file of WBS SPI, allows you to associate WBS SPI monitored instances with cluster resource groups. As a result, when you move a resource group from one node to another, in the same cluster, monitoring stops on the failed node and starts on the new node.

To create the clustered application configuration file `apminfo.xml` follow these steps:

- 1 Use a text editor to create the file. The syntax is:

```
<?xml version="1.0" ?>
<APMClusterConfiguration>
  <Application>
    <Name>namespace_name</Name>
    <Instance>
```

```

        <Name><Instance Name></Name>
        <Package><Package Name></Package>
    </Instance>
</Application>
</APMClusterConfiguration>

```

- 2 Enter namespace_name under the <Name></Name> tag.
- 3 Save the apminfo.xml file to the \$OvDataDir/conf/conf directory.

Sample apminfo.xml file

```

<?xml version="1.0" ?>
<APMClusterConfiguration>
    <Application>
        <Name>namespace_name</Name>
        <Instance>
            <Name>instance_name</Name>
            <Package>test</Package>
        </Instance>
    </Application>
</APMClusterConfiguration>

```

Task 3: Configure WBS SPI

To configure WBS SPI follow these steps:

- 1 Launch the Discover WebSphere application with virtual node as the target. For details about launching the discovery application see [Task 3: Launch Discover WebSphere](#) on page 44.
- 2 Launch the Configure WBSSPI application with the virtual node as the target The configuration editor opens.
- 3 Use the configuration editor to set the following properties (these properties are in addition to the ones discovered by the Discover WebSphere application) :
 - CLUSTERNAMESPACE
 - CLUSTERINSTANCE

These properties should have the same value as defined in apminfo.xml file. For example, CLUSTERNAMESPACE property must be set to namespace_name and CLUSTERINSTANCE must be set to instance_name.

- 4 Copy the SiteConfig file from active node to passive node. The file is located in the \$OvDataDir/conf/wasspi directory.
- 5 Set the value of ADMIN_HOST property to the name of the managed node that was activated because of failover.

4 Using and Customizing WBS SPI

As you become familiar with the Smart Plug-in for WebSphere Application Server (WBS SPI), you can determine which templates are most useful to you and which you might want to change. This chapter assists you by providing more detail on the templates and how to make those changes.

The following topics are covered:

- [Basic Template Customizations](#)
- [Advanced Template Customizations](#)
- [Monitoring a WebSphere Server on Unsupported Platforms](#)
- [Restoring Default WBS SPI Templates](#)
- [Using Templates/Applications to View Annotation Reports](#)
- [Checking WBS SPI Nodes for License Count](#)

Basic Template Customizations

After using the WBS SPI, you may decide that some WBS SPI templates need some modification. Basic customization, such as changing a threshold (by modifying a metrics template) or modifying alarm generation, are covered in this section.



Make copies of the original templates so that the default templates remain intact. Otherwise, your customizations are overwritten when you upgrade to the next version.

Modifying Metrics Templates

Many metric attributes can be easily modified for all monitored instances of a WebSphere server by following these steps:

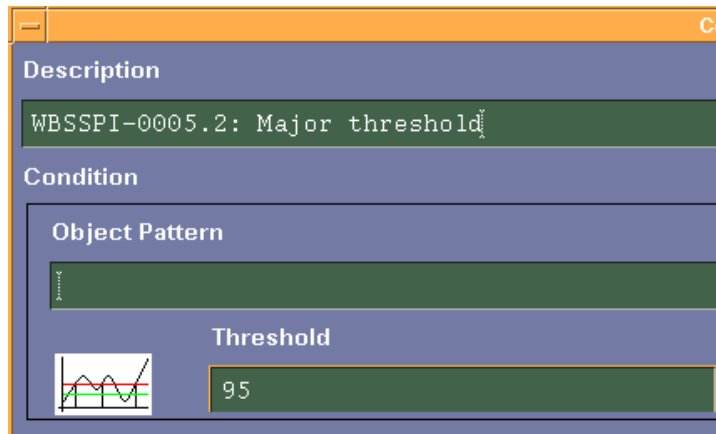
- 1 Open the Message Source Templates window.
- 2 Open the SPI for WebSphere template group.
- 3 Open the desired impact template group and then the WBSSPI-Metrics template group.
- 4 Double-click the desired metric to open the Message and Suppress Conditions window.
- 5 Double-click the desired condition to modify (there is usually only one).

The Condition window opens.

The following attributes can be modified:

- **Threshold:** Enter a value for the metric data that when exceeded would signify a problem either about to occur or already occurring.
- **Duration:** The length of time that the incoming data values for a metric can exceed the established threshold before an alarm is generated.
- **Severity:** Click the Severity button and select the desired severity setting.
- **Message Text:** Be careful not to modify any of the parameters—surrounded by <> brackets, beginning with \$—in a message.
- **Actions:** This field provides the ability to generate metric reports, or to add custom programs. In the WBS SPI, automatic actions are configured to generate metric reports showing data values at the time an exceeded threshold occurred. You can view a generated WBSSPI report by opening the message’s Annotations.

The following illustration of the Condition window shows a threshold setting of 95 for WBSSPI-0005.2. This metric monitors the total number of times per minute clients must wait for an available EJB (enterprise java bean). A value of more than 95 would start to impact the server response time the client experiences, generating an alarm (a warning message).



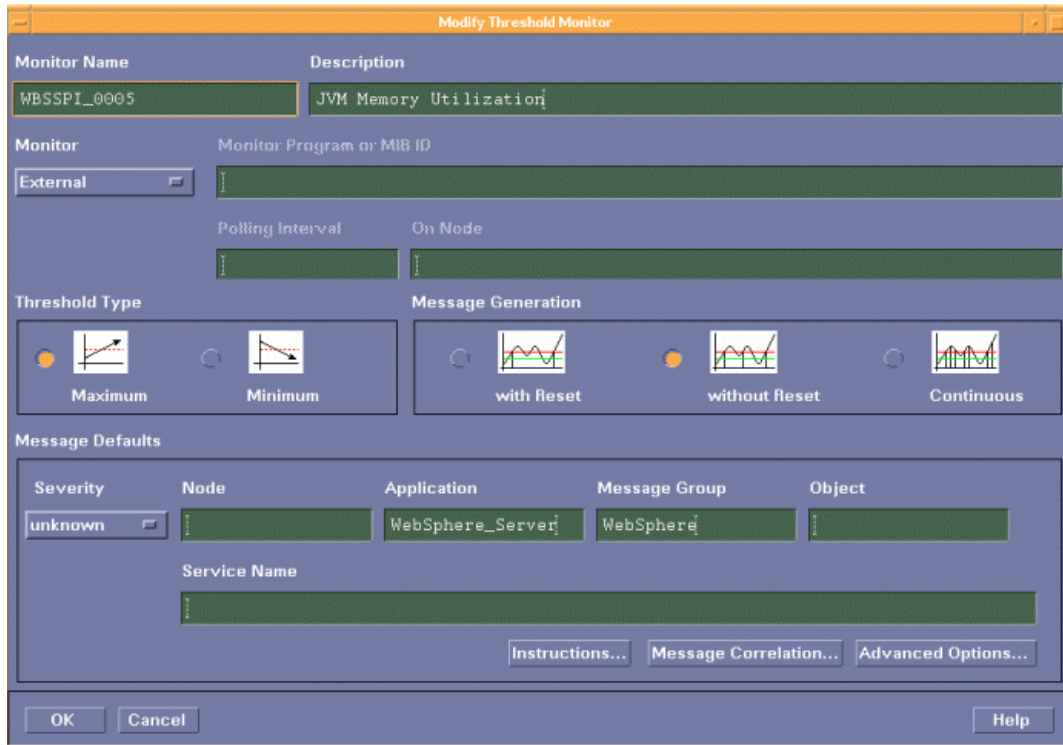
- 6 Click **OK**.
- 7 Re-distribute the modified template (described in [Task 6: Distribute WBS SPI Templates](#) on page 47).

Modifying Alarm Generation

An alarm can be generated once or multiple times, depending on its Message Generation setting in the Modify Threshold Monitor window.

To change the change the Message Generation, do the following:

- 1 Open the Message Source Templates window.
- 2 Open the SPI for WebSphere template group.
- 3 Open the desired impact template group and then the WBSSPI-Metrics Template group.
- 4 Select the template to modify.
- 5 Click **Modify**. The Modify Threshold Monitor window opens.



6 Modify the Message Generation:

- **With Reset:** Alarms are generated once when the threshold value is exceeded. At the same time a reset threshold value is activated. Only when the reset threshold value is exceeded, does the original threshold value become active again. Then when the threshold value is again exceeded, another alarm is generated and the process starts all over again.
- **Without Reset:** Alarms are generated once when the monitoring threshold value is exceeded. Alarms reset automatically when metric values are no longer in violation of the thresholds and are generated again when the threshold is exceeded.
- **Continuously:** Messages are sent/alerts generated each time the metric values are collected and the threshold is exceeded.

7 Click **OK**.

8 Re-distribute the modified template (described in [Task 6: Distribute WBS SPI Templates](#) on page 47).

Advanced Template Customizations

The template changes suggested here range from making copies of default template groups in order to customize a few settings, to deleting whole groups of metrics within a template's command line. This section is considered advanced because all changes described here, whether simple or complex, require some advanced knowledge of the WBS SPI metrics.

Choosing Metrics To Customize

Determine which metrics you want to customize and what templates within the group you want to use. Then, do the following:

- 1 Open the Message Source Templates window.
- 2 Highlight the group you want to use and click the **Copy...** button.
- 3 Rename and save the group.
- 4 Within the renamed template group, copy each original template and rename it.
- 5 Delete the originals from the new group.
- 6 Customize the renamed templates within the group, as necessary.

Creating a new template group allows you to keep custom templates separate from the original default templates, which you copy and place within the new group.

Using the WBS SPI Collector/Analyzer Command

The `wasspi_wbs_ca` command is used in every collector template, named according to its collection interval. You can view the default command line parameters within each collector template in the Command text box in the Modify Scheduled Action window.

The WBS SPI Collector/Analyzer Command Parameters

WBS SPI data collections are started with the `wasspi_wbs_ca` command, to which you can add other parameters, as identified in the following table.

Parameter	Description	Syntax
<code>-m</code> (metric)	Specifies the metric numbers or number ranges on which to collect data.	<code>-m <metric_number></code> Example: <code>-m 1, 3-5, 9-11, 15</code>
<code>-matchver</code> (match version)	Specifies the specific WebSphere application server version to monitor. This option may not be used with the <code>-minver</code> nor <code>-maxver</code> options. If no matching versions are found, the command does not execute.	<code>-matchver <version_number></code> Example: <code>-matchver 4</code>
<code>-maxver</code> (maximum version)	Specifies the highest WebSphere application server version to monitor. Use with <code>-minver</code> to specify a range of versions. If no versions are found, the command does not execute.	<code>-maxver <version_number></code> Example: <code>-maxver 5</code>

Parameter	Description	Syntax
-minver (minimum version)	Specifies the lowest WebSphere application server version to monitor. Use with -maxver to specify a range of versions. If no versions are found, the command does not execute.	-minver <version_number> Example: -minver 4
-r (report)	Generate an ASCII report for the specified metrics	-r
-t (tag)	Create a new template group by adding a prefix to an existing collector template along with the metric numbers.	-m <metric_number> -t <prefix>- Example: -m 220-223 -t DEV-
-i (include)	List specific servers to monitor. May not be used with the -e option.	-i <server_name> Example: -i server1,server3
-e (exclude)	Exclude specific servers from being monitored. May not be used with the -i option.	-e <server_name> Example: -e server2,server4
-x	Specify a property/value:	-x <property>=<property_value>
	alarm: when off, overrides any default alarming defined for the metric.	-x alarm=off
	prefix: Default: JMXUDM_. Specify the prefix of the metric ID.	-x prefix=SALES_
	print: when on, prints the metric name, instance name, and metric value to STDOUT in addition to any configured alarming or logging.	-x print=on
	log: when off, prevents graphing or reporting functions.	-x log=off

Examples

- To specify metrics to collect:
 - specific data on all configured servers:
`wasspi_wbs_ca -m 10-14,25,26`
 - data from specific servers only:
`wasspi_wbs_ca -m 245,246,260 -i server1,server2`
- To not collect data from specific servers:
`wasspi_wbs_ca -m 220-225 -e server1,server2`

Using JMX Actions Command Parameters

The command parameters described in this section are used to run JMX actions. JMX actions are one or more JMX calls (invoke, get, set) performed on an MBean instance or type. A single JMX call can be performed from the command line. Multiple JMX calls can be specified in an XML file or as a Metric subelement in a UDM file.

Parameter	Description
-a Required	(action) Indicates a JMX action is performed. Syntax: -a
-i	(include) Allows you to list specific servers on which to perform the JMX actions. If this parameter is not specified, the JMX actions are performed on all configured servers. Syntax: -i <server_name> Example: -i server1,server3
-m	(metric) Specifies the metric ID containing the action to perform. This metric ID must be defined in a UDM file. This option may not be used with the -mbean nor -xml options. Syntax: -m <metric_id> Example: -m TestUDM_1000

Parameter	Description
-mbean	<p>Performs a JMX call on the specified MBeans. This option may not be used with the <code>-m</code> nor <code>-xml</code> options.</p> <p>Syntax: <code>-mbean <objectname> <action></code></p> <p>Example: <code>-mbean WebSphere:type=ThreadPool,* -get maximumSize</code> where <code><action></code> (a JMX call) is one of the following:</p>
-get	<p>Returns the value of the apecified attribute.</p> <p>Syntax: <code>-mbean <objectname> -get <attribute></code></p> <p>Example: <code>-get maximumSize</code></p>
-invoke [-type]	<p>Executes an MBean operation with the specified parameters. An operation may not require parameters (therefore, <code>-type</code> is not specified). A type parameter must be specified for operations which accept parameters. <code>-type</code> supports operation overloading.</p> <p>Syntax: <code>-mbean <objectname> -invoke <operation> [-type <parameter_type> <parameter_value>]...</code> where <code><parameter_type></code> is one of the following: <code>short</code>, <code>int</code>, <code>long</code>, <code>double</code>, <code>float</code>, <code>boolean</code>, <code>java.lang.Short</code>, <code>java.lang.Integer</code>, <code>java.lang.Long</code>, <code>java.lang.Double</code>, <code>java.lang.Float</code>, <code>java.lang.Boolean</code>, and <code>java.lang.String</code>.</p> <p>Example: <code>-invoke setInstrumentationLevel -type java.lang.String pmi=L -type boolean true</code></p>
-set	<p>Assigns the specified value to the specified attribute.</p> <p>Syntax: <code>-mbean <objectname> -set <attribute> <value></code></p> <p>Example: <code>-set growable true</code></p>
-o	<p>(object) Specifies an MBean instance.</p> <p>Syntax: <code>-o <mbean_instance></code></p> <p>Example: <code>-o exampleJMSSErver</code></p>
-xml	<p>Specifies the XML file that contains the JMX actions to perform. This option may not be used with the <code>-m</code> nor <code>-mbean</code> options.</p> <p>Syntax: <code>-xml <filename></code></p> <p>Example: <code>-xml myJMXActions.xml</code></p>

Examples

- Set the maximum size for an alarming thread pool to 500 (where `<$OPTION(instanceName)>` specifies an alarming instance):

```
wasspi_wbs_perl -S wasspi_wbs_ca -a
-mbean WebSphere:type=ThreadPool,* -set maximumSize 500 -o
<$OPTION(instanceName)>
```
- Set the instrumentation levels to low on all PMI modules:

```
wasspi_wbs_perl -S wasspi_wbs_ca -a
-mbean WebSphere:type=Perf,* -invoke setInstrumentationLevel -type
java.lang.String pmi=L
```
- Use the sample UDM TestUDM_1000 in the `wbs_UDMMetrics-sample.xml` file:

```
wasspi_wbs_perl -S wasspi_wbs-ca -a -m TestUDM_1000
-i examplesServer
```

- Use the sample actions xml file:

```
wasspi_wbs_perl -S wasspi_wbs-ca -a
-xml /var/opt/OV/wasspi/wbs/conf/wbs_JMXActions-sample.xml
-i examplesServer
```

Changing the Collection Interval for Scheduled Metrics

To change the metric collection interval, simply change the Polling Interval in the appropriate collector template. For example, to change the collection of default metrics from 5 minutes to 10 minutes for the WebSphere High Impact template group, follow these steps:

- 1 Open the Message Source Templates window.
- 2 Select the template group **SPI for WebSphere** and click **WebSphere-Templates-High-Impact** → **WBSSPI-Schedule-High**.
- 3 Select the collector template **WBSSPI-40-High-05min**.
- 4 Click **Modify...** The Modify Scheduled Action window opens.
- 5 Change the Scheduled Action Name to **WBSSPI-40-High-10min**.
- 6 Change the Schedule interval in the Minute box from 5m to 10m. For example, 0, 10, 20...
- 7 Distribute the new templates (described in [Task 6: Distribute WBS SPI Templates](#) on page 47).

Changing the Collection Interval for Selected Metrics

To change the collection interval for selected metrics, copy the appropriate collector template and rename with a name reflecting the new interval, deleting all but the metrics you are changing. Set the new interval. Edit the original template to remove the changing metrics. For example, to change the collection interval to 10 minutes for metrics 221-225, you would follow these steps:

- 1 Open the Message Source Templates window.
- 2 Select the template group **SPI for WebSphere** and click **WebSphere-Templates-High-Impact** → **WBSSPI-Schedule-High**.
- 3 Select the template **WBSSPI-40-High-05min**.
- 4 Click **Copy...** The Copy Scheduled Action window opens. In the Schedule Action Name box, change the Scheduled Action Name name to **WBSSPI-40-High-10min**.
- 5 In the command box delete all metrics after `-m` except 221-225.

Command	wasspi_wbs_perl_su -S wasspi_wbs_ca -m 26,223,61,
Execute as user	AGENT_USER

- 6 Change the polling interval to 10m.
- 7 Click **OK**.
- 8 In the template group **WBSSPI-Schedule-High**, select the **WBSSPI-40-High-05min** template.

- 9 Click **Modify**. The Modify Scheduled Action window opens. Delete 221-225 after `-m` from the Command Box.
- 10 Re-distribute the modified templates as described in [Task 6: Distribute WBS SPI Templates](#) on page 47.

Customize the Threshold for Different Servers

Customize the threshold as needed. For example, you may want to set the threshold to 20 for SERVER_1 for metric 0212 and leave the threshold at 10 for all other servers. To do so, copy the existing condition and modify it to serve as the exception. Follow these steps:

- 1 Double-click the metric to open the metric for customization (for example, double-click **WBSSPI-0212**).
The Message and Suppress Conditions window is displayed.
- 2 Select the desired condition and click **Copy...** to make a copy of the condition.
- 3 Name the condition **WBSSPI-0212.2**.
- 4 In the Object Pattern field, enter the following details:
`<ServerName>:<ServerPort>:<NodeName>:<*>:<*>:<*>`
For Example: If you want to set threshold for the application server SERVER1, enter the following:
SERVER1 :<*>:<*>:<*>:<*>:<*>
- 5 Click **Test Pattern Matching...** to test the pattern and verify pattern matching (you must set up a match file first).
- 6 Change the value in the Threshold field from 10 to 20.

Creating Custom, Tagged Templates

Another advanced customization option is to use the tag option (`-t` on the command line), which allows the collector/analyzer to recognize customized templates that have a tag attached to the name. This option provides you with the flexibility of using more than a single set of templates to define conditions pertaining to specific installations of a WebSphere server. It also preserves templates from being overwritten when an upgraded version of the WBS SPI is installed.

When multiple nodes are managed by a number of groups, this option allows you to create specially tagged templates that are obviously separate from your original setup. In such a case, you would make copies of the templates, rename them with the tag, re-work the collector template to pick up the tagged names, then assign them to the various groups.

For example, you might create a group of templates and change each template name to include CLIENT01 in it. A metric monitor template might be named CLIENT01-WBSSPI_0212 (retaining the metric number, which must be used). The collector template name would be named FIRST_CLIENT-40-05min. You could then set up another group for SECOND_CLIENT and change all those templates to include the CLIENT02 in the name.

To create the new template group

- 1 Copy the original template group. In the Message Source Templates window select the group and click **Copy...**
- 2 Name the new group according to how you plan to identify the new schedule and collector templates; for example, if you are including CLIENT01 in the template names, include that within the new template group name.
- 3 In the Message Source Template window expand the new template group to show all templates and select each template you plan to use, click **Copy...**, and rename it according to your naming scheme.
 - The names you give the new metric monitor templates in the group would contain the new name followed by the original metric number. For example, a copy of WBSSPI-0001 could be called CLIENT01-WBSSPI_0001.
 - The name you give the new collector schedule template would also contain the identifying name. You would also modify the scheduled collection for the new group by inserting the -t property on the command line. For example:

```
wasspi_wbs_ca -m 16 -t CLIENT01-
```
- 4 Delete all original templates from the new group.

Template Variables

The following variables are used by the WBS SPI templates. If you are creating your own templates, you may use these variables.

Name	Description
instancename	The instance for which the metric is being reported for multi-instance metrics.
map_port	See port. This variable may be deprecated in future releases.
map_servername	The application server name with spaces replaced with underscores (“_”). Used for service map keys where spaces are prohibited. Example: my_server
node	The node on which the application server is running. Example: moo1.hp.com
port	The port on which the application server is listening. Corresponds to the PORT configuration property. Example: 9001
servername	The application server name. Corresponds to the NAME configuration property. Example: my server

Monitoring a WebSphere Server on Unsupported Platforms

The WBS SPI supports monitoring WebSphere server systems running on HP-UX, Solaris, Linux (Red Hat), AIX, and Windows 2000. However, it is possible to configure the WBS SPI to monitor WebSphere server systems running on unsupported platforms—systems we refer to as “remote systems.”

The intent of this section is to help you determine if your environment is conducive to setting up remote monitoring. If you determine that your environment meets the criteria described below, you have some expertise in using the WBS SPI, and you have expertise in using the WebSphere server, this section offers an example to get you started.

Requirements for Monitoring Remote Nodes

For a WebSphere server system running on an unsupported platform, you can use WBS SPI to monitor that remote system if the following conditions apply (the last condition is optional):

- The remote system is covered by a purchased license (using Tier 1 pricing).
- The WBS SPI runs on at least one managed node on a supported platform: HP-UX, Solaris, Linux (Red Hat), AIX, or Windows 2000.
- The local/proxy system and remote system must be running the same version of WebSphere server. For example if the proxy system is running WebSphere server version 5, the remote system must also be running WebSphere server version 5.
- The remote system runs on a platform supported by the OVO agent software (optional, for logfile monitoring).

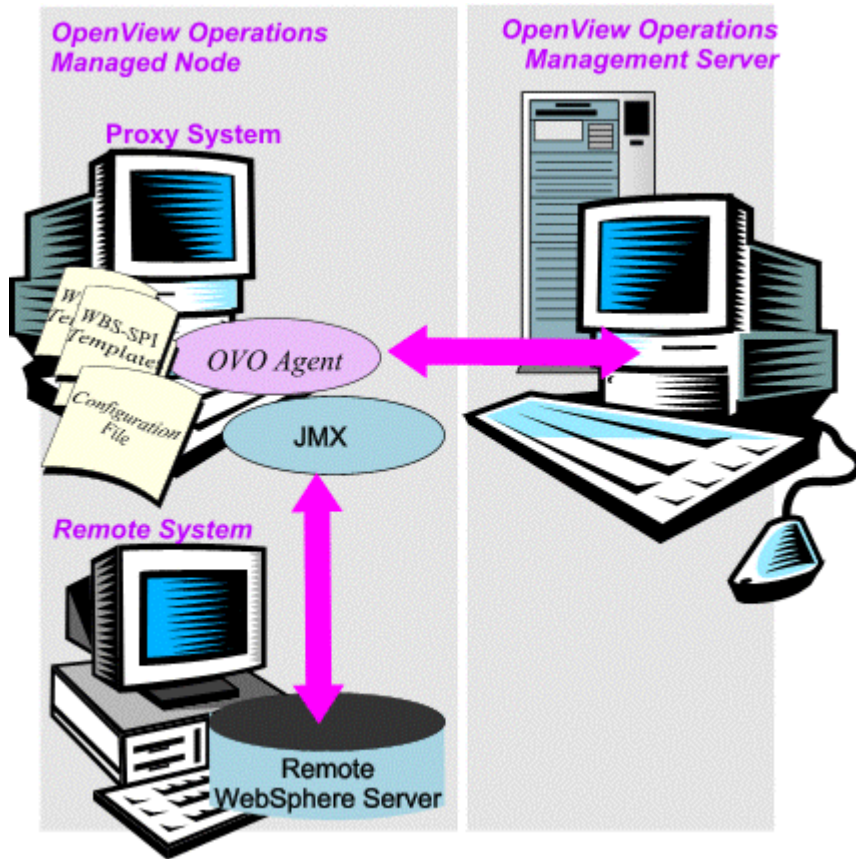
Overview

The following section provides an overview of remote monitoring and shows how it is implemented. Also included are details on how to set up the WBS SPI to access WebSphere server metrics and logfiles on unsupported platforms by using both the WBS SPI and OVO agent software.

Remote Monitoring

In a standard configuration, WBS SPI programs/templates are deployed on the local, managed node. In a non-standard configuration, the local system is used as a proxy through which remote metric information becomes accessible.

Remote system data collection/interpretation relies on the local, managed node to act as the proxy on which data collection is configured.



Configuration entries requirement: Within the configuration, entries for both local and remote systems are included. You can include multiple remote system entries in a local system's section. See example on [Task 1: Configure the Remote WebSphere Server System](#) on page 68, showing how the remote entry appears (with system IP address).

Template deployment requirement: Templates for the correct WebSphere PMI level should be deployed on the local node. If you need a separate template group (for example High Impact or Medium Impact) to cover a different level, you can copy and rename the existing templates and specify the WebSphere Server name on the command line using the `-i` or `-e` options. Refer to a previous section in this chapter [Using the WBS SPI Collector/Analyzer Command](#) on page 59 for details on using these command line parameters.

OVO agent deployment requirement (optional logfile monitoring): To access remote WebSphere server logfiles, the OVO agent software must be installed on the remote system. Using standard OVO processes, you can modify the standard logfile templates included with the WBS SPI to specify the correct logfile names, then deploy them to the remote system.

▶ Monitoring remote systems using logfile versioning is not supported.

Configuring Remote System Monitoring

You can monitor a WebSphere server on remote systems (running on platforms other than HP-UX, Solaris, Linux, AIX, or Windows 2000) by completing the following tasks.

Task 1: Configure the Remote WebSphere Server System

Using the Config WBSSPI application in the OVO WBSSPI Application Bank, you configure each local managed node that communicates with a remote WebSphere server. In the configuration you include additional entries for remote WebSphere servers.

- 1 Choose a WebSphere server managed node from which to monitor the remote WebSphere server.
- 2 At the OVO console, launch the **Config WBSSPI** application. In the Application Bank window select **WBSSPI** → **WBSSPI Admin** → **Config WBSSPI**.
- 3 In the configuration that appears, include an entry for each remote WebSphere server system: `SERVER<n>_ADDRESS=<DNS server name or IP address>`

Be sure that `NUM_SERVERS` is set to the correct number of servers (`<n>`) and that `HOME` and `JAVA_HOME` are set at the global level.

The illustration below shows how local and remote WebSphere servers are configured in the same file. Notice, however, that for the remote servers, the `SERVER<n>_ADDRESS=<IP address>` (`SERVER2_ADDRESS=15.75.27.109` or `SERVER2_ADDRESS=harley.rose.hp.com`) line is added:

```
HOME=/opt/WebServer/AppServer
JAVA_HOME=/opt/WebServer/AppServer/java
NODE local_node {
NUM_SERVERS=2
SERVER1_NAME=lara
SERVER1_PORT=900
SERVER2_NAME=harley
SERVER2_PORT=905
SERVER2_ADDRESS=harley.rose.hp.com
}
```

There are two WebSphere servers configured in the preceding configuration. `SERVER1` is the local server, running on an HP-UX managed node. `SERVER2` is running on an OVO-managed node, that is a non-Red Hat Linux system (a platform unsupported by WBS SPI). The remote system is configured similar to that of the local system but contains the new line `SERVER2_ADDRESS=harley.rose.hp.com`.

- 4 To verify that the SPI is monitoring the remote node, run the following command:

```
wasspi_wbs_perl -S wasspi_wbs_ca -m 5 -i <remote_server_NAME|ALIAS> -x print=on
```

You must use `ALIAS` if it is set for the remote server.

Task 2: Integrate the OpenView Performance Agent (Optional)

Since the OpenView Performance Agent (also known as the MeasureWare Agent) collection occurs on the managed node (not the remote system), if you use PerfView and would like to graph the remote system data, you must ensure that MeasureWare integration is enabled on the (local) managed node.

Task 3: Assign Local Node to a WBS SPI node group

Assign the local managed node to the appropriate node group. For example, you would assign the local node to the WBS High node group if the local and remote managed nodes are to collect metrics that require the system be set at a high WebSphere PMI level.

Configuring Remote Logfile Monitoring (Optional)

Monitoring remote system logfiles is supported if the following is true:

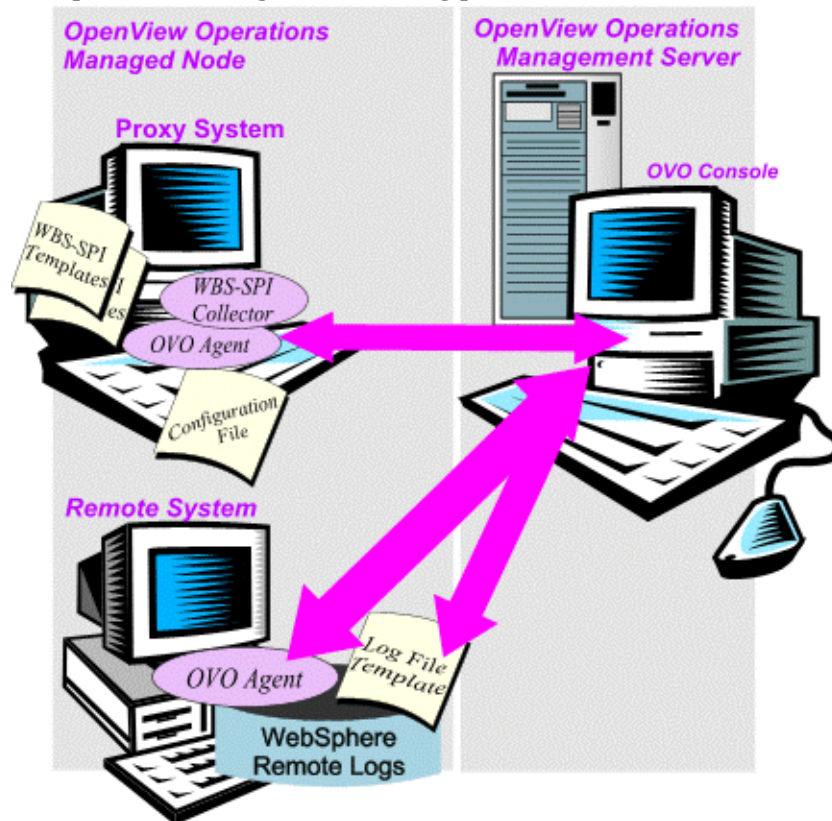
- The remote system that has an OVO agent running on it *and*
- The system does not re-version logfiles when they roll.

To set up logfile monitoring, at the OVO console you copy the WBS SPI logfile template and then configure, assign, and deploy the copied logfile template to the remote system.

Configure the Logfile Template for Remote Logfiles

- 1 Open a copy of the WebSphere Log Template located under WBSPI-Logfiles in the SPI for WebSphere group. For example, **SPI for WebSphere** → **WBSPI-Logfiles**.
- 2 In the Logfile text box, enter the location of the logfile on the remote system: `/<path>/<file_name>`.
- 3 Assign and deploy the logfile template to the remote OVO-managed node.

The log file template and the OVO agent, both present on the remote system, make WebSphere server logfile monitoring possible.



Remote Monitoring Limitations

- The WBS SPI and the OVO agent do not support access to logfiles that are re-versioned each time the logs are rolled.
- When no OVO agent is present on the remote system, monitoring of WebSphere server logfiles on the remote system cannot occur.

- In the OpenView Operations Application Bank, WBS SPI applications cannot be executed on remote systems.
- The proxy system and remote system must be running the same version of the WebSphere server.

Restoring Default WBS SPI Templates

When WBS SPI templates are installed in OVO, the commands shown below automatically uploads them when `swinstall` is run. Any customized template settings you may have done for the previous installation are overwritten.

To restore the default SPI for WebSphere template groups you originally installed:

- 1 Delete all current templates.

Run the command:

```
/opt/OV/bin/OpC/opccfgupld -silent -replace \  
-subentity var/opt/OV/share/tmp/OpC_appl/wasspi/wbs_set
```

Alternatively, you can use the `-verbose` option instead of the `-silent` option.

Using Templates/Applications to View Annotation Reports

Some templates have actions defined with threshold violations or error conditions that automatically cause reports to appear in the message Annotations. These reports are snapshots of data values collected from the server around the time that the alarm occurred.

- ▶ The reports discussed in this section should not be confused with those generated by OpenView Reporter, which show more consolidated, historical data generated as Web pages in management-ready presentation format.

You can access the data as follows:

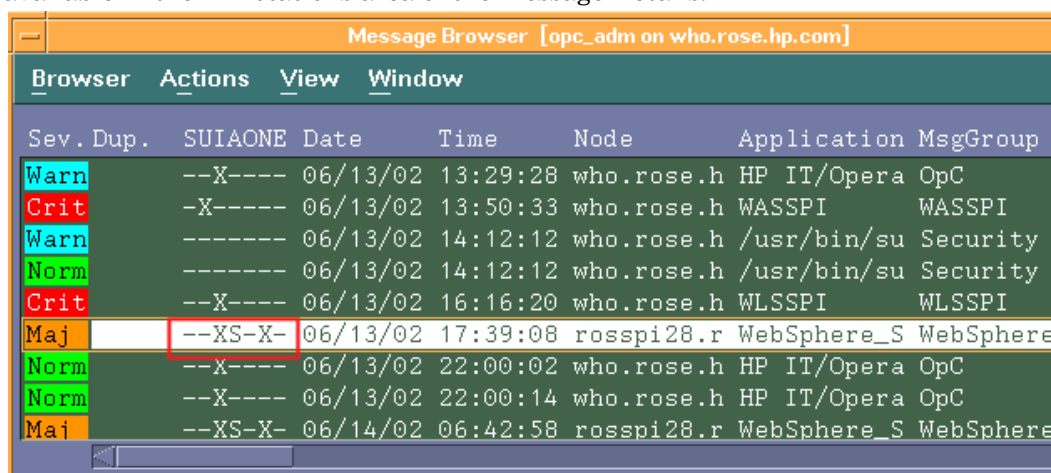
- To view the Message Details. Double-click a message in the OVO message browser, or just select the message and click Annotations. Reports are available there, showing data values on a single server.
- To view reports. Open both the Node Bank and Application Bank windows. Continue to open application windows **WBSSPI** → **WBSSPI Admin** → **Reports**. Select a node and drag it onto the WBS SPI metric report you need. These reports show all server data on a node.

Automatic Action Reports

Many metrics generate Automatic Action Reports. These reports show data on a single WebSphere server instance with an exceeded threshold. They are generated as soon as the alarm is triggered in OVO.

Viewing an Automatic Action Report

When an Automatic Action Report is executed from OVO, the server is queried for additional data. If your message browser is set to display the SUIAONE column, you will see an “S” under the “A” column (see illustration), which indicates that a successfully generated report is available in the Annotations area of the Message Details.



Sev.	Dup.	SUIAONE	Date	Time	Node	Application	MsgGroup
Warn		--X----	06/13/02	13:29:28	who.rose.h	HP IT/Opera	OpC
Crit		-X-----	06/13/02	13:50:33	who.rose.h	WASSPI	WASSPI
Warn		-----	06/13/02	14:12:12	who.rose.h	/usr/bin/su	Security
Norm		-----	06/13/02	14:12:12	who.rose.h	/usr/bin/su	Security
Crit		--X----	06/13/02	16:16:20	who.rose.h	WLSSPI	WLSSPI
Maj		--XS-X-	06/13/02	17:39:08	rosspi28.r	WebSphere_S	WebSphere
Norm		--x----	06/13/02	22:00:02	who.rose.h	HP IT/Opera	OpC
Norm		--X----	06/13/02	22:00:14	who.rose.h	HP IT/Opera	OpC
Maj		--XS-X-	06/14/02	06:42:58	rosspi28.r	WebSphere_S	WebSphere

To view an automatically generated metric report relating to an alarm condition, click **Annotations...** in the Message Browser. Column descriptions provide further clarification.

Application Bank Reports

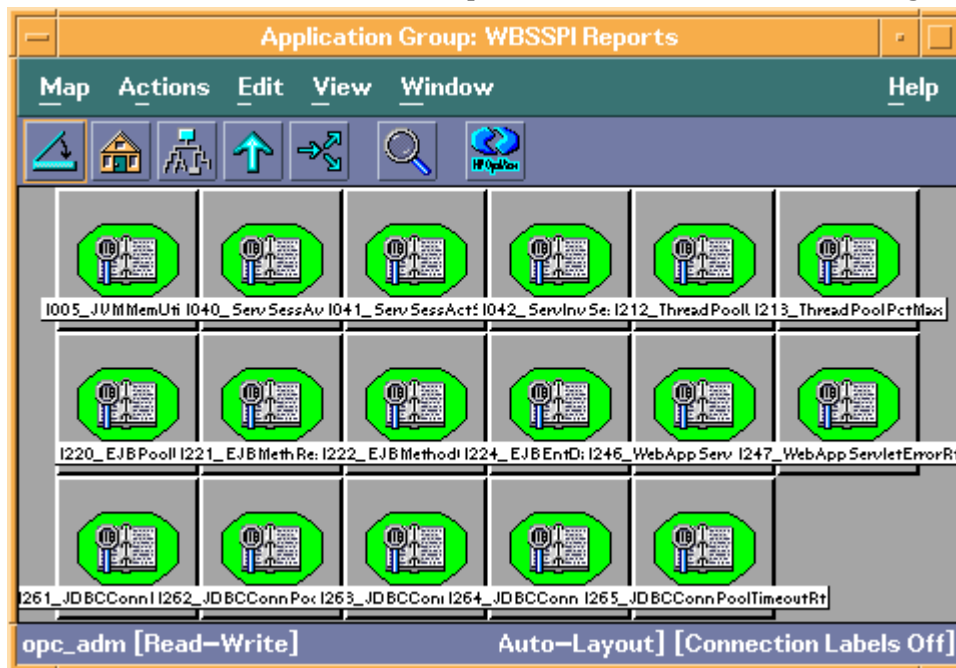
Application Bank reports run for all WebSphere server instances configured on the managed node. The reports generated from the Application Bank reflect the current state of a WebSphere server on the managed node. You manually generate these reports in OVO by dragging the managed node from the Node Bank window to a specific metric report among those shown in the Application Bank window.

WBS SPI reports require that the targeted managed node have a PMI level setting at or above the rating (as shown in the table below) for the metric you are selecting

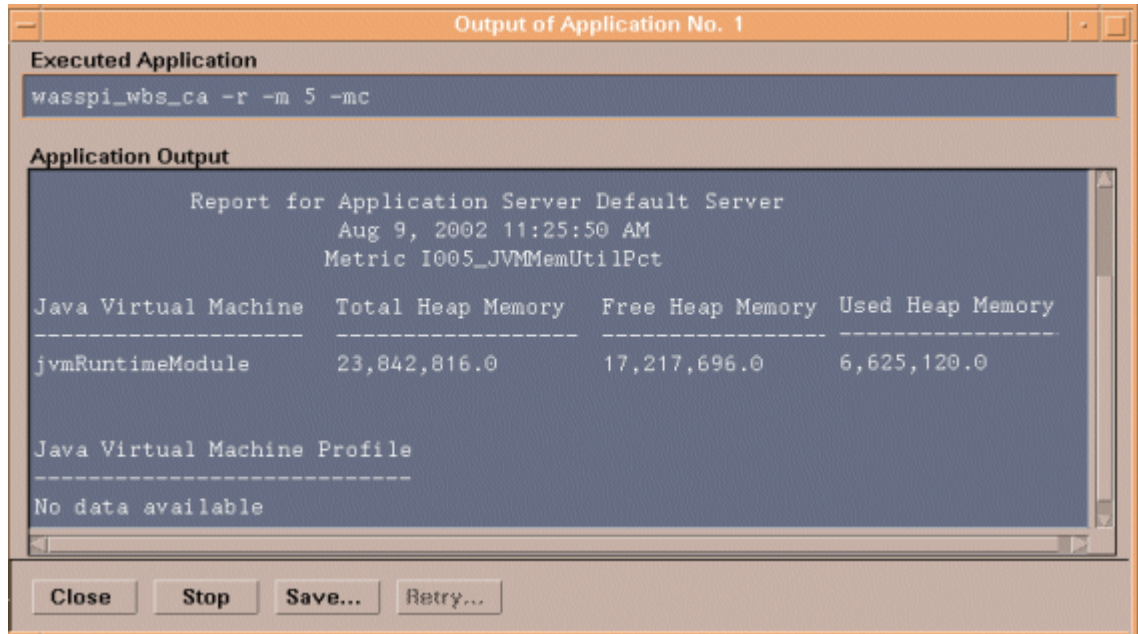
Table 2 Performance Impact Ratings (PMI Levels) of Reporting Metrics

Low	5, 42, 222, 224, 247, 265
Medium	40, 221, 246, 262
High	41, 212, 213, 220, 261, 263, 264

When manually generated, a report from the **Application Bank** → **WBSSPI Reports** window shows that metric data for ALL WebSphere server instances on the managed node.



The Application Bank report below was generated for Metric #5 (I005).



Checking WBS SPI Nodes for License Count

You can use an OVO reporting utility to check the number of templates you have installed on your managed nodes. In reviewing the number of templates per managed node, you can see if you have consistently installed templates across your managed systems. In addition, by running this report, you can also ensure that the number of licenses you have purchased is in compliance with the report results.

To run the report:

- 1 At the OVO console select the node or node group that you want to check.
- 2 From the Actions menu select **Utilities** → **Reports....**
- 3 In the Reports window among the reports listed select **WBSSPI License Check**.
- 4 Select an output destination and click **OK**.

5 Integrating HP OpenView Reporting and Graphing Products with WBS SPI

The Smart Plug-in for WebSphere Application Server (WBS SPI) can be integrated with the following HP OpenView reporting and graphing products (these products must be purchased separately):

- HP OpenView Reporter (Reporter)
- HP OpenView Performance Agent (OVPA)
- HP OpenView Performance Insight (OVPI)
- HP OpenView Performance Manager (OVPM)

HP OpenView Reporter: Reporter produces management-ready, web page reports, showing historical and trending information. This is *not* the version of Reporter that is included with HP OpenView Operations.

Working in conjunction with Reporter, the WBS SPI produces a variety of reports showing consolidated information on the WebSphere Application Server.

Refer to [Integrating with HP OpenView Reporter](#) on page 77 for more information on how to integrate WBS SPI with Reporter. After integrating WBS SPI with Reporter, every night, Reporter generates reports that show the performance and availability of a WebSphere Application Server on configured managed nodes.

HP OpenView Performance Agent: OVPA collects, summarizes, time stamps, and detects alarm conditions on current and historical resource data across your system. It provides performance, resource, and end-to-end transaction response time measurements, and supports network and database measurement information. Refer to the *HP OpenView Performance Agent for UNIX User's Manual* for more information about OVPA.

If you are using OVPA, WBS SPI automatically uses it. If you want to use the HP OpenView Operations subagent (CODA) that is included with HP OpenView Operations (does not support OVPA), you must configure your managed nodes to do so. Refer to [Integrating with CODA](#) on page 76 for more information.

HP OpenView Performance Insight: OVPI is a network management system that collects, processes, and reports data. The data is used to generate reports. Refer to the *HP OpenView Performance Insight Administration Guide* for more information about OVPI. Refer to the *Application Server Report Pack User Guide* for more information about WBS SPI reports and how to integrate WBS SPI with OVPI.

HP OpenView Performance Manager: OVPM provides graphing capability of WBS SPI metrics. This is not the version of OVPM that is included with HP OpenView Operations.

Refer to [Integrating with HP OpenView Performance Manager](#) on page 82 for more information on how to integrate WBS SPI with OVPM. After integrating WBS SPI with OVPM, graphs are available the following day.

Integrating with CODA

The WBS SPI can detect if you are using OpenView Performance Agent (OVPA or MeasureWare Agent). If you are, the WBS SPI installation automatically uses it.

If you want to use the HP OpenView Operations subagent (CODA) included with OVO 7.x, you must configure the managed nodes to do so. Note that this configuration does not support OVPA.

To use CODA, set up an empty file named `nocoda.opt` and store it on the managed node:

- 1 On the managed node, create a `nocoda.opt` file in the following directory:

Operating System	File Location
HP-UX, Linux, Solaris	<code>/var/opt/OV/conf/dsi2ddf/</code>
AIX	<code>/var/lpp/OV/conf/dsi2ddf/</code>
Windows	<code>\usr\ov\conf\dsi2ddf\</code>

If the directory `dsi2ddf` does not exist, create it.

- 2 Save the empty file.

Integrating with HP OpenView Reporter

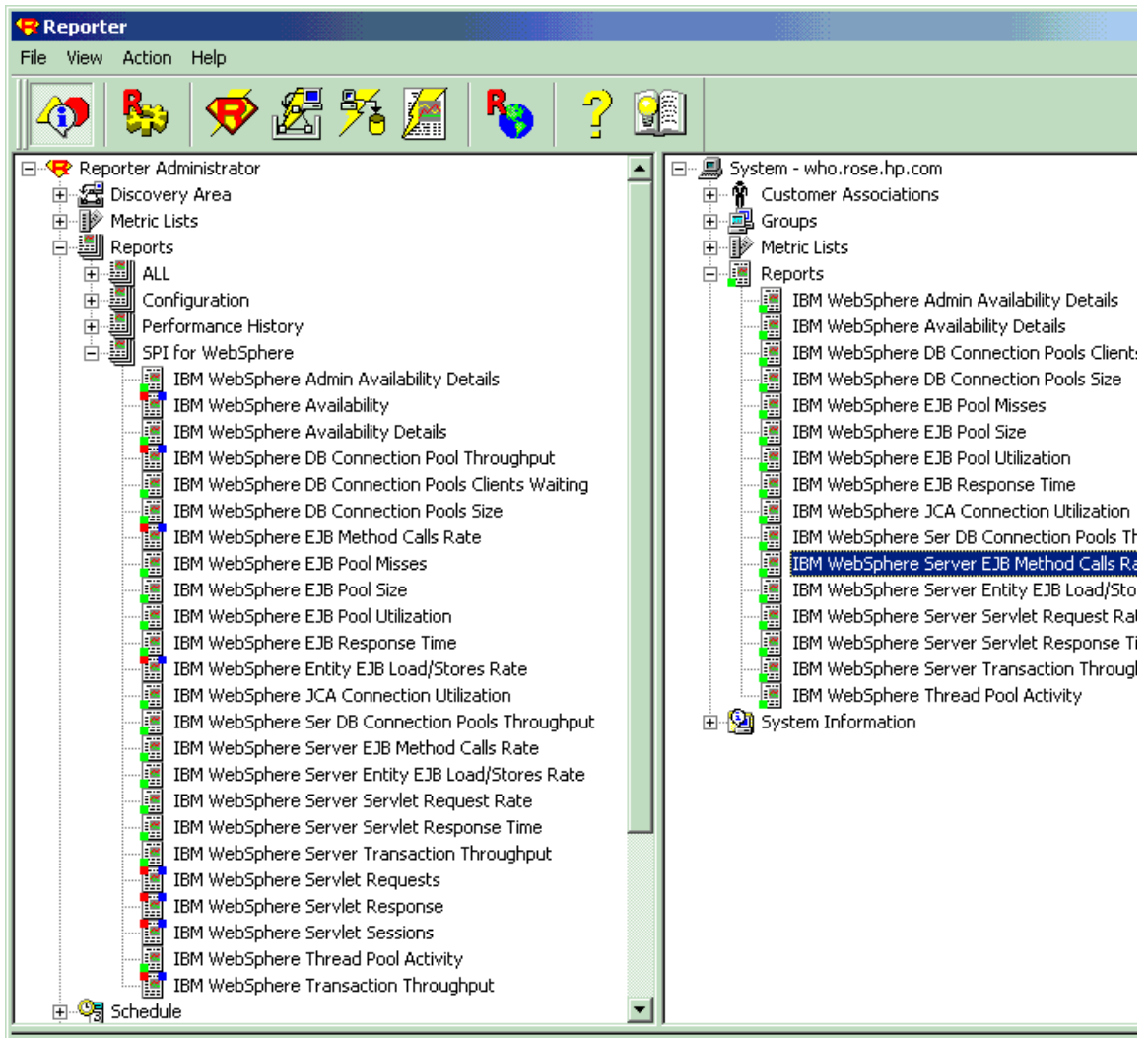
WBS SPI must be installed and configured before it can be integrated with Reporter.

If you are upgrading the WBS SPI report package, you must remove the old version before installing the new version. Refer to [Task 14: Install the New Report Package \(Optional\)](#) on page 32 for information on how to remove the WBS SPI report package.

The WBS SPI report package must be installed on the Windows system running Reporter:

- 1 On the Windows client system, insert the Smart Plug-ins DVD-ROM (that contains the reporting packages) into the DVD-ROM drive, and in Windows Explorer go to the directory `\OV_REPORTER\WEBSPI\WBSPI_04.20.000\` and double-click **WBSPI-Reporter.msi**
- 2 Follow the instructions as they appear.
- 3 Check the Reporter status pane to note changes to the Reporter configuration.
 - ▶ For Windows 2000 managed nodes, during the installation, an error message may appear that indicates the installer has detected an older version of the installer on your system. You can safely ignore the message and continue.

The Reporter main window displays IBM WebSphere Availability and Performance reports.



You can find instructions in the Reporter Help for assigning WBS SPI reports to the targeted nodes. To access Help, select Reports or Discovered Systems in the left panel of the Reporter main window and right-click it. Select Report Help or Discovered Systems Help from the submenu that appears. See the topic “To assign a report definition to a Discovered Systems Group.”

- 4 Add group and single system reports by assigning reports as desired. (See the Reporter Help and the online Concepts Guide for complete information.

➤ Group and single system WBS SPI reports require that you identify systems by their full name. For example, `abc.xyz.com` is acceptable while `abc` is not.

WBS SPI Reporter Reports

The reports available through the integration of HP OpenView Reporter and WBS SPI show consolidated data on server performance and availability on all WebSphere server systems. In addition, other reports show data for single systems. These reports are available the day

following your installation of the WBS SPI report package on the Reporter Windows system. See [Integrating with HP OpenView Reporter](#) on page 77 if you have not yet completed the report package installation.)

The two tables that follow show all pre-defined reports.

Table 3 All/Group Reports

Report Title	Description	Metric
Availability	Shows the percent uptime for all WebSphere servers by day.	2
Top 20 Servers— Transaction Throughput	Shows the average throughput for the top 20 execute queues of all servers.	77
Top 20 Servers—JDBC Connection Pool Throughput	Shows the average throughput for all connections pools on the server for the top 20 servers.	66
Top 20 Servers—Servlet Request Rate	Shows the total servlet request rate for the top 20 servers.	45
Top 20 Servers— Servlet Sessions	Shows the total servlet sessions being handled by the top 20 servers.	41
Top 20 Servers— Servlet Average Response Time	Shows the average response time for the top 20 requested servlets for all servers for the reporting period.	245
Top 20 Servers— EJB Method Calls Rate	Shows the number of all EJB method calls per minute for the top 20 servers.	22
Top 20 Servers— Entity EJB Load/Stores Rate	Shows the number of all Entity EJB loads and stores to/from the database per minute for the top 20 servers.	24

Table 4 Single System Reports

Report Title	Description	Metric
Server Availability Details	Contains spectrum graphs showing minutes of uptime by day and hour for each WebSphere server.	2
Admin Server Availability Details	Shows the uptime percent for each WebSphere Admin server by day.	4
EJB Average Response Time	Shows the average response time for the top 20 EJBs for a server for the reporting period.	221
EJB Method Calls Rate	Shows the number of all EJB method calls per minute for the top 20 EJBs for a server.	22
Entity EJB Load/Stores Rate	Shows the number of all EJB loads and stores to/from the database per minute for the top 20 EJBs on a server.	224
EJB Pool Utilization	Shows the EJB pool utilization as a percent for the top 20 EJBs on a server.	220
EJB Pool Misses Percent	Shows the percent of time that a call to retrieve an EJB from the pool was not successful during the collection interval for the top 20 EJBs.	225

Table 4 Single System Reports (cont'd)

Report Title	Description	Metric
EJB Pool Size	Shows the average pool size for the top 20 EJBs for one server for each day.	223
JDBC Connection Pools Throughput vs. Utilization	Charts the throughput against the utilization for the JDBC connection pools on the selected server, one chart for each connection pool.	263
JDBC Connection Pools - Size vs. Wait Time	Charts the connection pool size against the average wait time for a connection for the JDBC connection pools on the selected server, one chart for each connection pool.	260
JDBC Connection Pools - Clients Waiting vs. TimeoutRate	Charts the number of clients waiting for a database connection from the pool against the timeout rate for waiting clients for the DB connection pools on the selected server, one chart for each connection pool.	265
JCA Connections Utilization - Top 20 Resources	Shows the JCA resource connection pool utilization as a percent.	250
Transaction Throughput	Shows the average transaction throughput for the selected server by day.	77
Thread Pool Activity	Charts the average size of the thread pool against the average number of active threads for all thread pools on the selected server, one chart for each thread pool.	211
Servlet Request Rate	Shows the request rate (per second) for the top 20 servlets for one server for each day.	245
Servlet Average Response Time - Top 20 Servlets	Show the average response time for the top 20 requested servlets for one server for the reporting period.	246

OVPI Reports for WBS SPI

The reports available through the integration of HP OpenView Performance Insight and WBS SPI show consolidated data on server performance and availability on WebSphere application server systems. Refer to the *Application Server Report Pack User Guide* for more information about WBS SPI reports and how to integrate WBS SPI with OVPI.

The table that follow shows all pre-defined reports.

Report Title	Description	Metric
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.	2, 77
EJB Pool Utilization	The percentage of EJB pool utilization.	20
JDBC Throughput—Utilization	The percentage of available JDBC connection in the connection pool and the number of clients serviced by the connection pool per second.	66, 263
Near Real Time Server Availability	The server status for the last six hours.	2, 77
Servlet Request Rate—Response Time	The servlet request rate measures the number of requests for a servlet per second. The servlet response time chart shows the average execution time for an individual servlet.	45, 246
EJB Load-Stores Rate	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.	24
EJB Method Calls Rate	The number of all EJB method calls per minute for the top 20 servers.	22
EJB Top 20	The percentage of EJB retrievals that were not successful during the collection interval, the average pool size, and the average response time in milliseconds for the top 20 EJBs.	25, 221, 223
JDBC Connection Pool Details	The average number of connections allocated per day for the top 20 servers. The DB pool is shown along with clients waiting, client timeout rate, average pool size, and average wait time.	61, 65, 260, 266
Servlet Sessions	The total number of servlet sessions being handled by the top 20 servers.	41
Thread Pool Activity	Comparison of the average size of thread pools with the average number of active threads on the selected server.	210, 211
Transaction Throughput	The average number of transactions processed per second by the top 20 servers for the previous day.	77

Integrating with HP OpenView Performance Manager

To integrate WBS SPI with OVPM, do the following:

- 1 Install and configure the WBS SPI. Verify that you have completed [Task 1: Configure the Management Server to Launch your Web Browser](#) on page 35. Also, verify that you have set the GRAPH_URL property. Refer to [Property Definitions](#) on page 155 for more information about the GRAPH_URL property.
- 2 If you are upgrading the WBS SPI graph package, you must remove the old version before installing the new version. Refer to [Task 15: Install the New Graph Package \(Optional\)](#) on page 33 for information on how to remove the WBS SPI graph package.
- 3 Install the graph package.

On a Windows system running OVPM, do the following:

- a Insert the Smart Plug-ins DVD-ROM (that contains the reporting packages) into the DVD-ROM drive, and in Windows Explorer go to the directory `\OV_PM\WEBSPI_SPI_04.20.000\WINDOWS\` and double-click **HPOvSpiWbsGc-04.20.000.msi**.
- b Follow the instructions as they appear.

On an HP-UX system running OVPM that is not the OVO management server, do the following (if OVPM is installed on the OVO management server, the files are already swinstalled when you install the SPI software):

- a Mount the Smart Plug-ins DVD-ROM (that contains the reporting packages) and type:

```
swinstall -s <mount_point>/OV_PM/WEBSPI_SPI_04.20.000/HPUX/  
HPOvSpiWbsGc-04.20.000.sdtape WBSSPI-GRAPHS
```

On a Solaris system running OVPM that is not the OVO management server, do the following (if OVPM is installed on the OVO management server, the files are already installed when you install the SPI software):

- a Mount the Smart Plug-ins DVD-ROM (that contains the reporting packages) and type:

```
/usr/sbin/pkgadd -d <mount_point>/OV_PM/WEBSPI_SPI_04.20.000/  
SOLARIS/HPOvSpiWbsGc-04.20.000.sparc all
```

- 4 To graph any WebSphere server metric, use the data source name `WBSSPI_METRICS`.

Refer to the OVPM documentation for information on how to view the graphs. Graphs are available the day following integration.

WBS SPI Metrics Available for Graphs

The table that follow show the graphs available for mapping collected metric values. Use OVPM to view any one of the metrics included in any of these tables.

Table 5 JVM

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

Table 6 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 7 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.
I025_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 8 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 9 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 10 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 11 Transactions

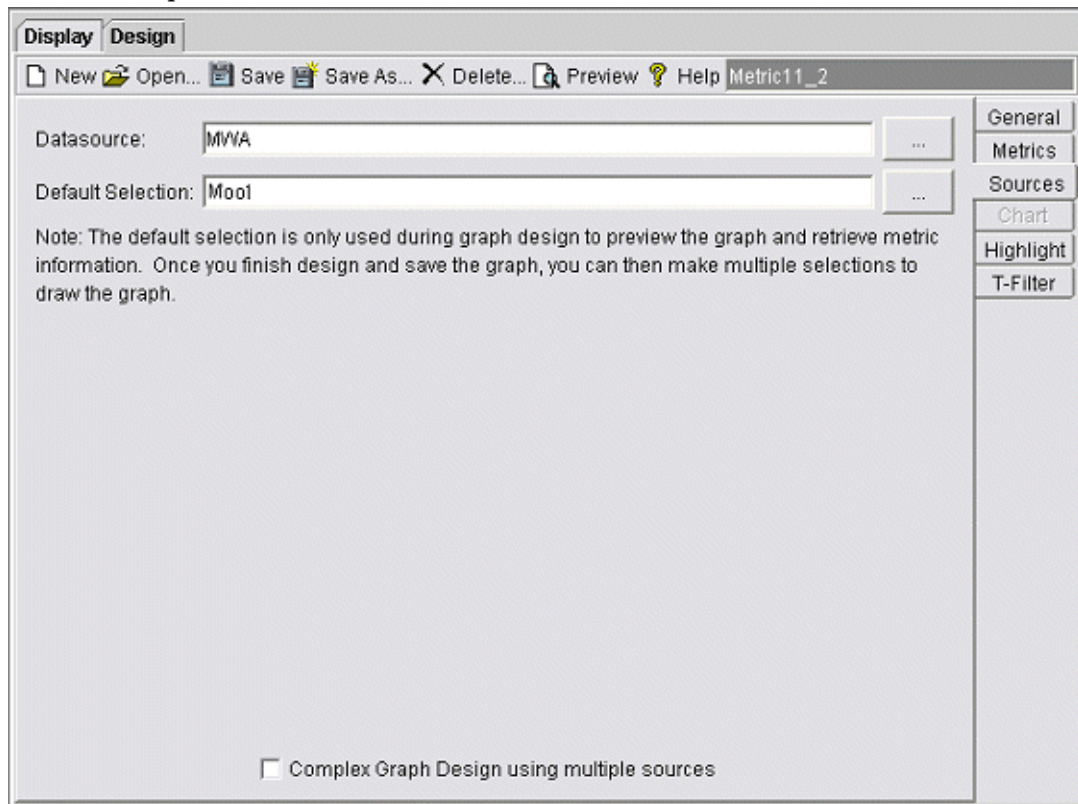
Metric Number/Name	Metric Description
I070_TransGlobDur	Average duration of global transactions.
I071_TransLocDur	Average duration of local transactions.
I072_TransGlobCommDur	Average duration of commits for global transactions.
I073_TransLocCommDur	Average duration of commits for local transactions.
I074_TransRollbackRt	Number per second of global and local transactions rolled back.
I075_TransTimeoutRt	Number per second of timed out global and local transactions.
I076_TransCommitRt	Number per second of global and local transactions that were committed.
I078_TransStartRtt	Number per second of global and local transactions that were begun.

Example Integration

The following is an example of how to graph multi-instance data stored in a data source by reporting each OBJECTNAME for the METRICID for each SERVERNAME. The result is all data for all instances are reported in one graph. The data for each SERVERNAME can also be displayed in a separate graph.

This example also uses the Java interface option of OVPM.

- 1 Start the Java Interface option of OVPM. The Performance Manager Java Interface window opens.



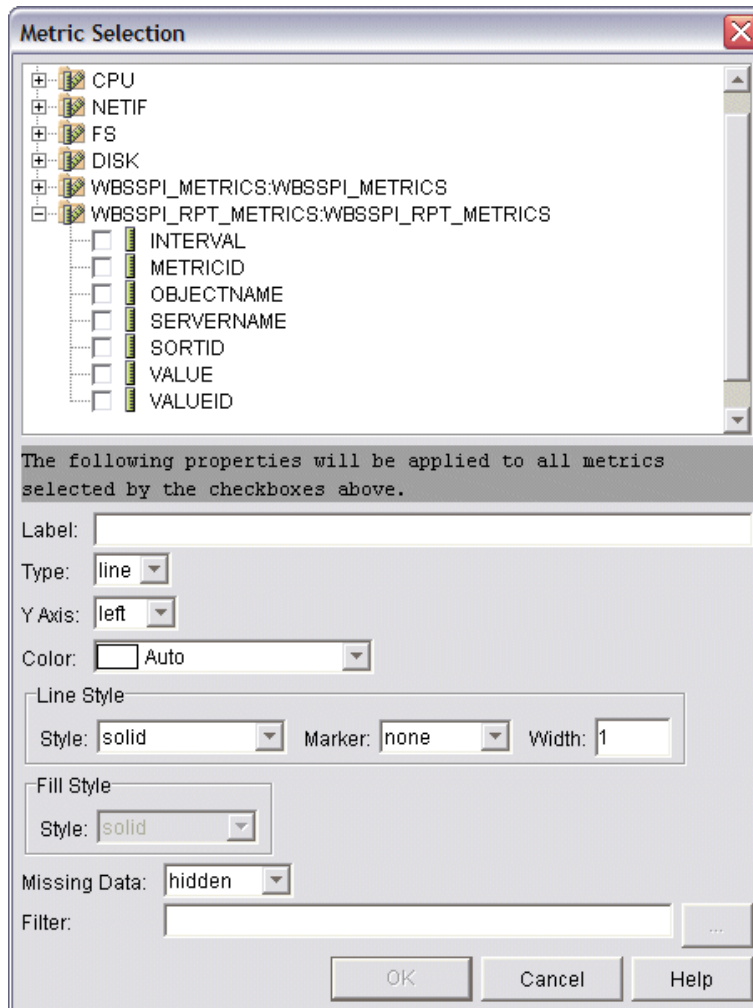
- 2 From the Performance Manager Java Interface window,
 - a Click the **Display** tab at the top of the window, and then the **Sources** tab at the right of the window.
 - b Click next to the Datasource text box and select a data source (WBSSPI_RPT_METRICS).
 - c Click next to the Default Selection text box and select the node on which the data source resides.

- 3 Click the **General** tab at the right of the window.

The screenshot shows the 'Metric11_2' configuration window with the 'General' tab selected. The window has a menu bar with 'New', 'Open...', 'Save', 'Save As...', 'Delete...', 'Preview', and 'Help'. Below the menu bar is a title bar with 'Metric11_2'. The main area contains several sections: 'Title' and 'Subtitle' text boxes; 'Type' dropdown menu set to 'table'; 'Description' section with 'Date Range' (Duration: 3 days, Ending: Last, Date: Jul 26, 2004, Time: 00:00) and 'Points Every' (5 minutes) dropdown; 'Limit Number of Points to' text box; 'Shift' section with 'Override Shift Defaults' checkbox, 'Start' (00:00) and 'Stop' (23:59) time pickers, 'Skip Holidays' checkbox, and 'Days' checkboxes for Sun, Mon, Tue, Wed, Thu, Fri, Sat; and 'Metric Display Order' section with radio buttons for 'Average data value', 'Label (alphabetical)', and 'User Defined (see Metric tab)'. On the right side, there is a vertical tab bar with 'General', 'Metrics', 'Sources', 'Chart', 'Highlight', and 'T-Filter' tabs.

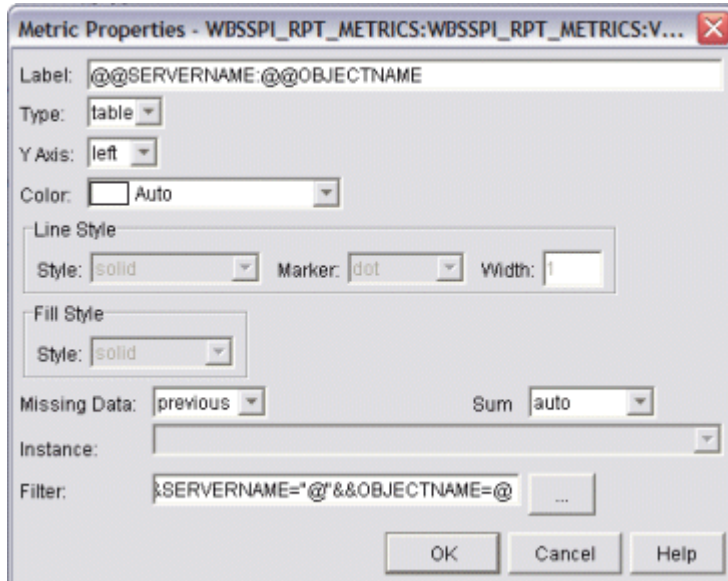
- 4 From this window,
- Select **line** from the Type drop-down list. This generates a line graph.
 - Enter a Date Range.
 - Enter an interval using the Points Every drop-down list.
 - Click **Label (alphabetical)** if you want the graph key sorted alphabetically.

- 5 Click the **Metrics** tab at the right of the window and click **Add**. The Metric Selection window opens.

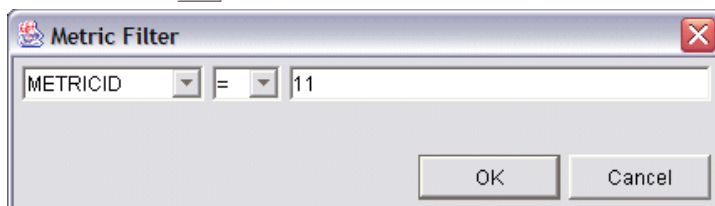


- 6 From the Metric Selection window,
 - a Next to the WBSSPI_RPT_METRICS data source, click + to expand it in the tree.
 - b Select the check box next to VALUE.
 - c Click **OK**.

- 7 In the window with the Metrics tab selected, VALUE is displayed. Select the line on which VALUE is displayed and click **Properties**. The Metric Properties window opens.



- 8 From the Metric Properties window,
 - a In the Label text box, enter:
 - **@@SERVERNAME : @@OBJECTNAME** if you are creating one graph with all SERVERNAMEs
 - **@@OBJECTNAME** if you are creating one graph with one SERVERNAME
 - b In the Marker drop-down list, select any marker other than none.
 - c In the Missing Data drop-down list, select:
 - **previous** to use the previous value if data is missing from the data source
 - **zero** to use the value zero if data is missing from the data source
 - d Click **...** next to the Filter text box. The Metric Filter window opens.



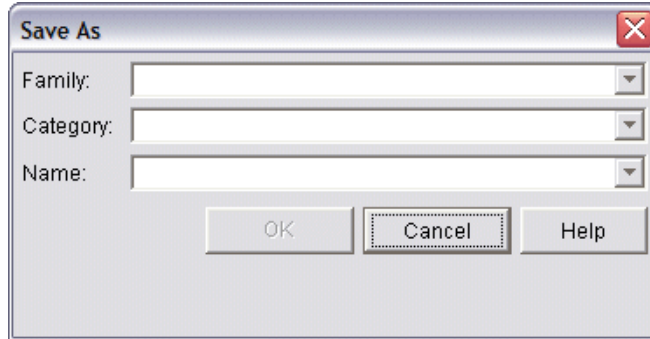
- 9 From the Metric Filter window,
 - a Select **METRICID** from the first drop-down list.
 - b Select **=** from the second drop-down list (if it isn't already selected).
 - c Enter a metric number (for example, 11) in the text box.
 - d Click **OK**.
- 10 From the Metric Properties window,
 - a In the Filter text box, append the following:
 - **&&SERVERNAME=@ &&OBJECTNAME=@@** if you want one graph to display all SERVERNAME/OBJECTNAME combinations.

- `&&SERVERNAME=<server_name>&&OBJECTNAME=@` if you want one graph to display one SERVERNAME and all OBJECTNAMEs associated with the multi-instance metric.

If you cannot edit the Filter text box, you can edit this item in the graph template file. Refer to [step 13](#) for more information.

b Click **OK**.

11 Click **Save As** at the top of the window. The Save As window opens.



12 From the Save As window,

- a Enter a family (for example, **WBSSPI_Graphs**) in the Family text box. The family name serves as a group to organize the graphs.
- b Enter a name (for example, **metric_11**) in the Name text box to uniquely identify the graph.
- c Entering text into the Category text box is optional.
- d Click **OK**. The information is saved in a graph template file named `VPI_GraphsUser<family>.txt` (for example, `VPI_GraphsUserWBSSPI_Graphs.txt`).

For more information about this window, refer to the online help.

13 Edit the graph template file. The file is located in the OpenView data directory on the system of the OVPM instance on which you are working. The graph file may look similar to the graph in [Figure 1](#).

Figure 1

```
#####
#* OpenView Performance Manager
#* user Defined Graph Templates
#* Last Updated: 07/25/04 04:31_30 AM by [1.2.3.4] moo1
#####
FAMILY: WBSSPI_Graphs
GRAPH: Metric11
GRAPHBACKGROUND: None
DATERANGE: 1 day
GRAPHMULTIPLEGRAPHS: Yes
POINTSEVERY: raw
DATASOURCE: mwa
SYSTEMNAME: moo1

CLASS: WBSSPI_RPT_METRICS:WBSSPI_RPT_METRICS
METRIC: VALUE
FILTER: METRICID=11&&SERVERNAME=@&&OBJECTNAME=@
LABEL: @@SERVERNAME: @@OBJECTNAME
COLOR: Auto
MARKER: rectangle
MISSINGDATA: previous
END_GRAPH:

#*-----
GRAPH: Metric11_2
GRAPHBACKGROUND: None
DATERANGE: 1 day
GRAPHMULTIPLEGRAPHS: Yes
POINTSEVERY: raw
DATASOURCE: mwa
SYSTEMNAME: moo1

CLASS: WBSSPI_RPT_METRICS:WBSSPI_RPT_METRICS
METRIC: VALUE
FILTER: METRICID=11
LABEL: @@SERVERNAME: @@OBJECTNAME
COLOR:Auto
MARKER: rectangle
MISSINGDATA: previous
END_GRAPH:
```

There can be more than one set of data for a graph in the graph template file.

- a Add **SUMFROMRAW**: to the end of the first section of each graph (in the example above, add **SUMFROMRAW**: after `SYSTEMNAME: moo1`). This allows OVPM to summarized data from the data source and cannot be added using the GUI.
- b If you were unable to edit the Filter text box in the Metrics Properties window in [step 10](#), edit the `FILTER` field.

c Save the file. The graph file now contains the following:

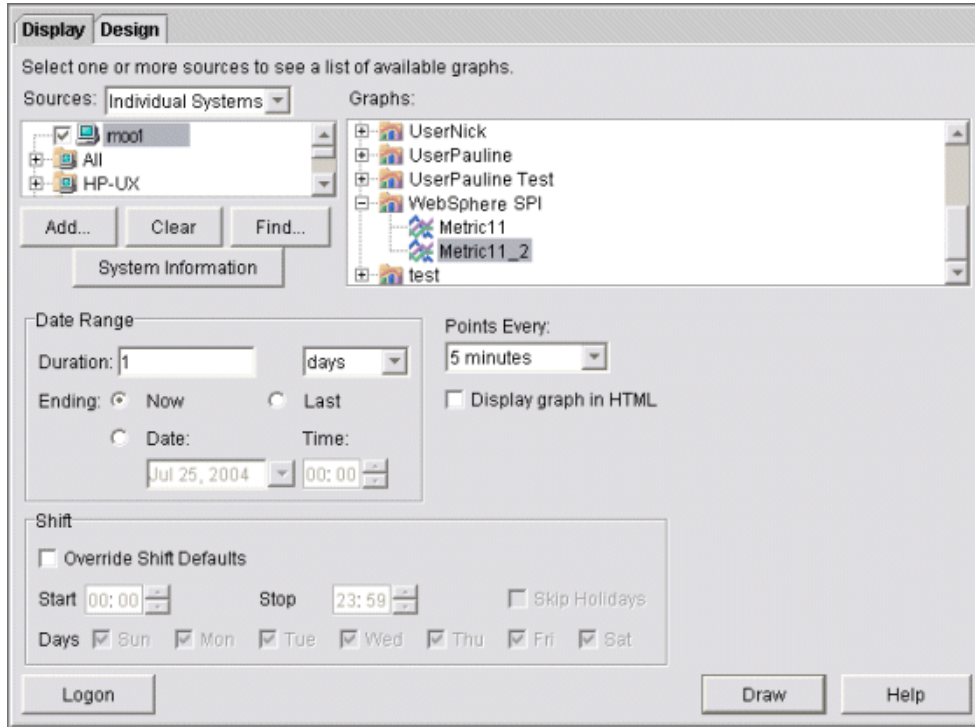
```
*****
#* OpenView Performance Manager
#* user Defined Graph Templates
#* Last Updated: 07/25/04 04:31_30 AM by [1.2.3.4] mool
*****
FAMILY: WBSSPI_Graphs
GRAPH: Metric11
GRAPHBACKGROUND: None
DATERANGE: 1 day
GRAPHMULTIPLEGRAPHS: Yes
POINTSEVERY: raw
DATASOURCE: mwa
SYSTEMNAME: mool
SUMFROMRAW:

CLASS: WBSSPI_RPT_METRICS:WBSSPI_RPT_METRICS
METRIC: VALUE
FILTER: METRICID=11&&SERVERNAME=@&&OBJECTNAME=@
LABEL: @@SERVERNAME:@@OBJECTNAME
COLOR: Auto
MARKER: rectangle
MISSINGDATA: previous
END_GRAPH:

#*-----
GRAPH: Metric11_2
GRAPHBACKGROUND: None
DATERANGE: 1 day
GRAPHMULTIPLEGRAPHS: Yes
POINTSEVERY: raw
DATASOURCE: mwa
SYSTEMNAME: mool
SUMFROMRAW:

CLASS: WBSSPI_RPT_METRICS:WBSSPI_RPT_METRICS
METRIC: VALUE
FILTER: METRICID=11&&SERVERNAME=@&&OBJECTNAME=@
LABEL: @@SERVERNAME:@@OBJECTNAME
COLOR:Auto
MARKER: rectangle
MISSINGDATA: previous
END_GRAPH:
```

14 From the Performance Manager Java Interface window, click the **Display** tab.



15 In this window,

- a In the window below the Sources text box, navigate to the server on which the data source resides.
 - b In the Graphs window, navigate to the family of graphs and select the graph you created.
 - c Enter information into the Date Range dialog box and Points Every text box.
 - d Click **Draw**. The graph appears.
- If you edit the graph from the Design tab, the `SUMFROMRAW:` entry is deleted from the graph template file. You must edit the graph template file and re-enter this entry.

16 From the SPI, enable graphing

- a From the OVO console, open the Node Bank window and select a node or groups of nodes on which you want to enable graphing.
- b Open the Application Bank window.
- c In the Application Bank window select **WBSSPI** → **WBSSPI Admin**.
- d Double-click **UDM Graph Enable**.

6 Basic Troubleshooting and Error Messages

Using the Self-Healing Info Application

Preferred troubleshooting method: Troubleshooting information is enhanced with cross-referencing capabilities available through the HP support site: **http://support.openview.hp.com/self_healing.jsp**. To access this information and the search capabilities available on the site, you must first download and configure the Self-Healing Services client software, an added benefit of your HP support contract. A link is then automatically set up to the self-healing services web site, where your SPI problem can be matched to similar SPI problems/solutions for increased troubleshooting effectiveness. Refer to the Self-Healing Services section in the *HP OpenView Smart Plug-ins DVD Installation Guide for UNIX* for information on how to download, configure, and use the software and its automatic link to the HP web site support service.

Alternative troubleshooting method: If self-healing services is not installed/configured on the node, you can use the Self-Healing Info application. This application also gathers SPI troubleshooting data and stores it in a file that you submit to HP support for assistance. Refer to [Self-Healing Info](#) on page 170 for more information about using this application.

Log and Trace Files

Management Server

The following log file is found on the management server (typically, `/<OvInstallDir%>/` is `/var/opt/OV`)

File Type	Log
Filename	<code>/<OvInstallDir%>/wasspi/wbs/log/ <managed_node>_disc_server.log</code>
Description	Records the updates done by the WBSSPI Discovery policy to the management server's configuration for each managed node. Log files are overwritten each time the discovery policy is run on the managed node. Logging to this file is always enabled.

UNIX Managed Nodes

The following log and trace files are found on the managed nodes running on UNIX (typically, `/<OvAgentDir%>/` is `/var/opt/OV/` or `/var/lpp/OV/`):

File Type	Log
Filename	<code>/<OvAgentDir%>/log/javaagent.log</code>
Description	OVO discovery agent log file containing the status of the OVO discovery agent. By default, logging to this file is enabled at <code>LOG_LEVEL 3</code> . Set the <code>LOG_LEVEL</code> variable in <code><OvAgentDir%>/conf/svcDisc/OvJavaAgent.cfg</code> to 6 or higher (up to 9) to capture troubleshooting information (the higher the number, the more information is collected). To disable this log, set the <code>LOG_LEVEL</code> to 0. Additional information can be configured in this file to define log file size and the number of archived files kept. By default, the log file size is 1MB and five archived versions are kept.

File Type	Log
Directory	<code>/<OvAgentDir%>/wasspi/wbs/log/config.log</code>
Description	Records output from the WBS SPI configuration scripts.

File Type	Log
Directory	<code>/<OvAgentDir%>/wasspi/wbs/log/errorlog</code>
Description	Records WBS SPI error messages. This log file is monitored by WBS SPI policies.

File Type	Log
Directory	/<OvAgentDir>/wasspi/wbs/log/discovery.log
Description	Records output from the WBS SPI discovery process.
File Type	Trace
Filename	/<OvAgentDir>/wasspi/wbs/log/discovery.trace (archived files have a three digit number appended to the filename)
Description	Discovery binary trace file used by your HP support representative. By default, tracing to this file is enabled. To disable tracing, in <OvAgentDir>/bin/instrumentation/wasspi_wbs_discovery.pl, set the \$trace_on variable to 0. To enable this trace, set the \$trace_on to 1. When instrumentation is deployed, the wasspi_wbs_discovery.pl file is overwritten (therefore, if you disable tracing, it becomes enabled when instrumentation is deployed). Five archived versions are kept. A new trace file is created when the discovery policy is run.
File Type	Trace
Directory	/<OvAgentDir>/wasspi/wbs/log/trace.log (archived files have a three digit number appended to the filename)
Description	Trace file used by your HP support representative. This file gives information about the CollectorServer, regardless of whether the Collector is set to PERSISTANT or TRANSIENT mode in the SPIConfig file. The default value of the Collector Mode is 'PERSISTENT'. By default, tracing to this file is disabled. To enable this tracing, use the Start Tracing application.
File Type	Trace
Directory	/<OvAgentDir>/wasspi/wbs/log/traceCollectorClient.log (archived files have a three digit number appended to the filename)
Description	Trace file used by your HP support representative. This file gives information about the CollectorClient when the Collector is set to 'PERSISTENT' mode in the SPIConfig file. The default value of the Collector Mode is 'PERSISTENT'. By default, tracing to this file is disabled. To enable this tracing, use the Start Tracing application.

Windows Managed Nodes

The following log and trace files are found on the managed nodes running on Windows (typically, `<OvAgentDir>` is

`\Program Files\HP OpenView\Installed Packages\{790 ...}\`):

File Type	Log
Filename	<code>\<OvAgentDir>\log\javaagent.log</code>
Description	OVO discovery agent log file containing the status of the OVO discovery agent. By default, logging to this file is enabled at LOG_LEVEL 3. Set the LOG_LEVEL variable in <code><OvInstallDir>\conf\svcDisc\OvJavaAgent.cfg</code> to 6 or higher (up to 9) to capture troubleshooting information (the higher the number, the more information is collected). To disable this log, set the LOG_LEVEL to 0. Additional information can be configured in this file to define log file size and the number of archived files kept. By default, the log file size is 1MB and five archived versions are kept.

File Type	Log
Directory	<code>\<OvAgentDir> \wasspi\wbs\log\config.log</code>
Description	Records output from configuration scripts.

File Type	Log
Directory	<code>\<OvAgentDir> \wasspi\wbs\log\errorlog</code>
Description	Records WBS SPI error messages. This log file is monitored by WBS SPI policies.

File Type	Log
Directory	<code>\<OvAgentDir> \wasspi\wbs\log\discovery.log</code>
Description	Records output from the WBS SPI discovery process.

File Type	Trace
Filename	<code>\<OvAgentDir>\wasspi\wbs\log\discovery.trace</code> (archived files have a three digit number appended to the filename)
Description	Discovery binary trace file used by your HP support representative. By default, tracing to this file is enabled. To disable tracing, in <code><OvAgentDir>\bin\instrumentation\wasspi_wbs_discovery.pl</code> , set the <code>\$trace_on</code> variable to 0. To enable this trace, set the <code>\$trace_on</code> to 1. When instrumentation is deployed, the <code>wasspi_wbs_discovery.pl</code> file is overwritten (therefore, if you disable tracing, it becomes enabled when instrumentation is deployed). Five archived versions are kept. A new trace file is created when the discovery policy is run.

File Type Trace

Directory \<OvAgentDir>\wasspi\wbs\log\trace.log (archived files have a three digit number appended to the filename)

Description Trace file used by your HP support representative. This file gives information about the CollectorServer, regardless of whether the Collector is set to PERSISTANT or TRANSIENT mode in the SPIConfig file. The default value of the Collector Mode is 'PERSISTENT'.

By default, tracing to this file is disabled. To enable this tracing, use the Start Tracing application.

File Type Trace

Directory \<OvAgentDir>\wasspi\wbs\log\traceCollectorClient.log (archived files have a three digit number appended to the filename)

Description Trace file used by your HP support representative. This file gives information about the CollectorClient when the Collector is set to 'PERSISTENT' mode in the SPIConfig file. The default value of the Collector Mode is 'PERSISTENT'.

By default, tracing to this file is disabled. To enable this tracing, use the Start Tracing application.

Troubleshooting the Discovery Process

If the discovery process does not automatically discover multiple installations on a Windows managed node, set the HOME_LIST property and run the Discover WebSphere application.

If the discovery process does not automatically discover and update the WBS SPI configuration do the following:

- 1 Check for errors in the message browser of the managed nodes not being discovered. Follow the instruction text of any error messages displayed.
- 2 Verify that a WebSphere application server is installed on the managed node. If an application server is not installed, install an application server, and complete the configuration tasks listed in [Chapter 3, Configuring the WBS SPI](#).
- 3 Verify the WebSphere application server status. The application server must be running. See [Task 1: Verify the Application Server Status](#) on page 40 for more information.
- 4 On a Windows managed node, verify the installation directory of the server (`\Program Files\WebSphere\AppServer` or `\WebSphere\AppServer`). If the WebSphere application server is not installed in the default path, configure the HOME property using the non-default installation path.
- 5 On a UNIX managed node, if the WebSphere application server processes are not running (use `ps -ef` to check for these processes), verify the installation directory of the server (see [WebSphere Application Server Default Installation Path \(UNIX\)](#) on page 98 for the default path). If the WebSphere application server is not installed in the default path, configure the HOME property using the non-default installation path.

Table 12 WebSphere Application Server Default Installation Path (UNIX)

Operating System	Default Installation Path
AIX	/usr/WebSphere/AppServer
HP-UX, Linux, Solaris	/opt/WebSphere/AppServer

- 6 Verify that the Config WBSSPI application is not running. Only one process can access the configuration at a time. If Config WBSSPI is running, other processes that must access the configuration (like the discovery process) hang until the configuration becomes available.
- 7 Check if the OVO management server is suppressing duplicate messages:
 - a From the OVO console, select **Actions** → **Server** → **Configure**. The Configure Management Server window opens.
 - b Look for the “Suppress and count duplicate messages” check box. If this box is checked, uncheck it.
- 8 Check the `<%OVAgentDir>/wasspi/wbs/log/discovery.log` file for additional information.
- 9 Restart the OVO management server:
 - a Stop all OVO GUIs that are running by selecting **File** → **Exit**.
 - b Stop the OVO management server processes. Enter:
`/opt/OV/bin/ovstop opc ovoacomm`

- c Delete all OVO temporary files. All pending messages (messages not saved in the database) and all pending actions (automatic actions, operator-initiated actions, scheduled actions, and command broadcast) are lost. Enter:

```
rm -f /var/opt/OV/share/tmp/OpC/mgmt_sv/*
```
- d Restart the OVO management server process. Enter:

```
/opt/OV/bin/OpC/opcsv -start
```

```
/opt/OV/bin/OpC/opcsv -status
```
- e Restart the OVO GUI. Enter: `opc`

Troubleshooting Applications

Problem	Configuration variable <code>SERVER<n>_STOP_CMD</code> missing for server Default Server
Solution	Before you can successfully run the Stop WebSphere application, you must set the <code>STOP_CMD</code> and <code>USER</code> properties. Set these properties using the Config WBSSPI application. Refer to Configure WBSSPI on page 166 for more information about this application.

Problem	Configuration variable <code>SERVER<n>_START_CMD</code> missing for server, Default Server
Solution	Before you can successfully run the Start WebSphere application, you must set the <code>START_CMD</code> and <code>USER</code> properties. Set these properties using the Config WBSSPI application. Refer to Configure WBSSPI on page 166 for more information about this application.

Problem	For WebSphere 6.1, Stop WebSphere application does not stop WebSphere Application Servers.
Cause	Stop WebSphere application does not work well if security is enabled in WBS and the username/password options are specified while setting the <code>STOP_CMD</code> property.
Workaround	Edit the <code><connection type>.client.props</code> file on the managed node. For details refer to http://www-1.ibm.com/support/docview.wss?uid=swg21142299

Problem	When launched, the Verify application gives improper output.
Solution	Before you launch the Verify tool ensure that you have installed the latest version of Self-Healing Service (SHS) component (version 2.20) from the SPI DVD. If you upgrade WBS SPI without the SPI DVD then you must upgrade the SHS component also. You can download the SHS component from http://support.openview.hp.com/self_healing_downloads.jsp .

Problem	When launched, the Self-Healing Info application gives improper output.
Solution	Ensure that you have installed the latest version of Self-Healing Service (SHS) component (version 2.20) from the SPI DVD. If you have upgraded WBS SPI without the SPI DVD then you must upgrade the SHS component also. You can download the SHS component from http://support.openview.hp.com/self_healing_downloads.jsp .

Problem	When launching the applications, the applications hang or there is no output.
Solution	The applications will not work if the memory is low. Check the performance of the node and the management server. The physical memory available must be more than 500 MB.

Problem	Check WebSphere application shows a wrong status for a server instance or does not give any output.
Solution	If a server is up and running but Check WebSphere application returns the server status as NOT_RUNNING (or does not give any output), then turn ON the monitoring for that particular server by using the Start Monitoring application.

Problem	Datasource not getting created on RHEL 4.0 platform.
Solution	Ensure that you have installed the latest version of DSI2DDF component (02.22.000) from the SPI DVD. If you have upgraded WBS SPI without the SPI DVD, then you must upgrade the DSI2DDF component also. You can download the latest DSI2DDF component from: ftp://ovrntfs.rose.hp.com/prelim/dsi2ddf/02.22/HPUX11.00/DSI2DDF_A.02.22.00.sdtape

Error Messages

This section provides information on error messages resulting from conditions detected in the operation of the Smart Plug-in for WebSphere Application Server (WBS SPI), not the WebSphere server. The error messages discussed here are all within the WBSSPI Message Group.

For any given problem, only the most recent error message is displayed (the older error message is automatically acknowledged). This reduces the number of error messages displayed in the message browser.

WASSPI-1

Description	Unable to create the lock file <filename>. File already exists.
Severity	Critical
Help Text	<p>Probable Cause:</p> <p>Temporary lock files are used to avoid collisions when multiple WebSphere SPI data collector processes attempt to access the same data file. This error occurs when the lock file cannot be created after several attempts because it already exists.</p> <p>Suggested Action:</p> <p>If a file by the same name already exists, it may not have been deleted by a previous run of the WebSphere SPI data collector. You should delete this file manually.</p>

WASSPI-2

Description	Cannot access the SPI configuration.
Severity	Critical
Help Text	<p>Probable Cause:</p> <p>A WebSphere SPI configuration file could not be located or accessed. Either the file does not exist or there was a problem reading the file.</p> <p>Suggested Action:</p> <ol style="list-style-type: none">1 Verify that the collector template that runs the WebSphere SPI data collector specifies the correct directory on the command line. The option <code>-Dwasspi.config.dir=<configDirectory></code> must be specified on command line invocation of the data collector. <code><configDirectory></code> must be <code>/var/opt/OV/wasspi/wbs/conf</code> on Unix platforms or <code>/usr/OV/wasspi/wbs/conf</code> on NT platforms.2 Verify that the WebSphere SPI has been configured correctly by running the Verify utility from the Application Bank. If the configuration is not correct, run the WebSphere SPI configuration utility from the Application Bank to reinstall the files.3 Refer to the text following the error message in the WebSphere SPI error log to help identify the underlying cause of the problem, e.g. an I/O exception. You can view the SPI error log for a managed node by using the 'View Error File' application in the Application Bank window. You can view the SPI error log for a managed node by using the 'View Error File' application in the Application Bank window. The error message can be identified by the date/time stamp.

WASSPI-3

Description	Error parsing command line.
Severity	Critical
Help Text	<p>Probable Cause: The WBS SPI data collector command line is incorrectly specified in a schedule template.</p> <p>Suggested Action:</p> <ol style="list-style-type: none">1 Refer to the text following the error message in the WebSphere SPI error log to help identify the data collector command line syntax error. You can view the SPI error log for a managed node by using the View Error File application in the Application Bank window. The error message can be identified by the date/time stamp.2 If the error occurred in a schedule template that shipped with the WebSphere SPI, reinstall the SPI and run the WebSphere SPI configuration utility from the Application Bank.3 If the error occurred in a schedule template not shipped with the WebSphere SPI, correct the schedule template that contains the incorrect command line. Refer to the WebSphere SPI User's Guide for more information on the WebSphere SPI data collector command line.

WASSPI-4

Description	Error getting the metric definitions.
Severity	Critical
Help Text	<p>Probable Cause:</p> <p>The WBS SPI data collector could not read the metric definitions XML document. This error can be caused by a missing configuration property, an I/O error, an XML parsing error, a missing file, or a corrupted serialized data file.</p> <p>Suggested Action:</p> <ol style="list-style-type: none">1 Refer to the text following the error message in the WebSphere SPI error log to help identify the underlying cause of the problem. You can view the SPI error log for a managed node by using the 'View Error File' application in the Application Bank window. The error message can be identified by the date/time stamp.2 If the METRIC_DEFINITIONS_FILE property is missing from the WebSphere SPI configuration file, reinstall the SPI and run the SPI configuration utility from the Application Bank.3 If the problem is with the metric definitions file (MetricDefinitions.xml) that is shipped with the WebSphere SPI, then reinstall the WebSphere SPI. Run the SPI configuration utility from the Application Bank.4 If the problem is with a user-defined metric definitions file that is not shipped with the WebSphere SPI, verify that this XML file adheres to the MetricDefinitions.dtd specification. Refer to the WebSphere SPI's User's Guide for more information on writing user-defined metrics. Reinstall your user-defined metric definition file. Run the SPI configuration utility and verify that the UDM_DEFINITIONS_FILE property in the SPI configuration file, is specified correctly.56 If the underlying error is <code>ClassNotFoundException</code>, then this is an internal error. Report this to HP support.

WASSPI-5

Description	Error processing metric <i><metric_number></i> .
Severity	Major
Help Text	<p>Probable Cause:</p> <p>An error occurred while trying to collect data or perform calculations for the specified metric.</p> <p>Suggested Action:</p> <p>Refer to the text following the error message in the WebSphere SPI error log to help identify the underlying cause of the problem. The error messages previous to this one may also provide more information about the problem. You can view the SPI error log for a managed node by using the View Error File application in the Application Bank window. The error message can be identified by the date/time stamp.</p>

WASSPI-6

Description	Required property <i><property_name></i> is missing from the WebSphere configuration.
Severity	Major
Help Text	<p>Probable Cause: The specified required property is missing from the WebSphere SPI configuration file.</p> <p>Suggested Action:</p> <ol style="list-style-type: none">1 Run the WebSphere SPI configuration utility from the Application Bank. Verify that you have specified the correct server information for the WebSphere servers on this managed node.2 Verify the property is specified correctly in the WebSphere SPI configuration file (<code>/var/opt/OV/wasspi/wbs/confSiteConfig</code> on Unix platforms or <code>/usr/OV/wasspi/wbs/confSiteConfig</code> on NT platforms) on the managed node in question.

WASSPI-7

Description	Unable to contact server <i><server_name></i> at url= <i><URL></i> , port= <i><port></i> .
Severity	Critical
Help Text	<p>Probable Cause: The specified server is not running at the specified port.</p> <p>Suggested Action:</p> <ol style="list-style-type: none">1 Run the WebSphere SPI configuration utility from the Application Bank. Verify that you have specified the correct server name and port information for the WebSphere servers on this managed node.2 Verify that the properties, <code>SERVERx_NAME</code> and <code>SERVERx_PORT</code>, are specified correctly in the WebSphere SPI configuration file (<code>/var/opt/OV/wasspi/wbs/confSiteConfig</code> on Unix platforms or <code>/usr/OV/wasspi/wbs/confSiteConfig</code> on NT platforms) on the managed node in question.3 Verify that WebSphere server is running on the managed node.

WASSPI-8

Description	Error saving graphing or reporting data to file <i><file_name></i> .
Severity	Critical
Help Text	<p>Probable Cause: If the error message specifies the reporting data file, the agent on the managed node may be in an inconsistent state.</p> <p>Suggested Action: Restart the agent on the managed node.</p> <p>Probable Cause: The specified graphing or reporting data file could not be found or an I/O error occurred when trying to access the file.</p> <p>Suggested Action:</p> <ol style="list-style-type: none">1 Refer to the text following the error message in the WebSphere SPI error log to help identify the underlying cause of the problem. You can view the SPI error log for a managed node by using the View Error File application in the Application Bank window. The error message can be identified by the date/time stamp.2 Identify the steps to reproduce the problem.3 Turn on tracing and reproduce the problem. Refer to the WebSphere SPI User's Guide for instructions on how to turn on tracing.4 Run the Gather Info application.5 Contact HP support with the information gathered in the previous steps.

WASSPI-9

Description	Unable to retrieve property <i><property_name></i> .
Severity	Critical
Help Text	<p>Probable Cause: A required property is missing from one of the WebSphere SPI configuration files.</p> <p>Suggested Action:</p> <ol style="list-style-type: none">1 Refer to the text following the error message in the WebSphere SPI error log to help identify the underlying cause of the problem. You can view the SPI error log for a managed node by using the View Error File application in the Application Bank window. The error message can be identified by the date/time stamp.2 Run the WebSphere SPI configuration utility from the Application Bank. Verify that you have specified the correct information for the WebSphere servers on the managed node in question.3 Verify that the missing property is now specified in the WebSphere SPI configuration file (<i>/var/opt/OV/wasspi/wbs/conf SiteConfig</i> on Unix platforms or <i>/usr/OV/wasspi/wbs/confSiteConfig</i> on NT platforms) on the managed node in question.

WASSPI-10

Description	Encountered problem accessing file <i><filename></i> .
Severity	Critical
Help Text	<p>Probable Cause: The specified file could not be found, created, or accessed. This file could be a temporary file.</p> <p>Suggested Action:</p> <ol style="list-style-type: none">1 Refer to the text following the error message in the WebSphere SPI error log to help identify the underlying cause of the problem. You can view the SPI error log for a managed node by using the View Error File application in the Application Bank window. The error message can be identified by the date/time stamp.2 Verify that you have enough disk space to create temporary files.

WASSPI-11

Description	No servers have been specified in the WebSphere SPI configuration file.
Severity	Major
Help Text	<p>Probable Cause: The number of WebSphere instances specified in the WebSphere SPI configuration file for the managed node in question is 0.</p> <p>Suggested Action:</p> <ol style="list-style-type: none">1 Run the WebSphere SPI configuration utility from the Application Bank. Verify that you have specified the correct server name and port information for the WebSphere servers on this managed node.2 Verify that the property, NUM_SERVERS, in the WebSphere SPI configuration file (<code>/var/opt/OV/wasspi/wbs/conf SiteConfig</code> on Unix platforms or <code>/usr/OV/wasspi/wbs/confSiteConfig</code> on NT platforms) is set to the number of WebSphere servers on this managed node.

WASSPI-12

Description	Command <i><command></i> returned error exit code <i><exit code></i> .
Severity	Critical
Help Text	<p>Probable Cause:</p> <p>A command started by the WebSphere SPI collector has returned an error (non-zero) exit code.</p> <p>Suggested Action:</p> <ol style="list-style-type: none">1 Identify the steps to reproduce the problem.2 Turn on tracing and reproduce the problem. Refer to the WebSphere SPI User's Guide for instructions on how to turn on tracing.3 Run the Gather Info application.4 Contact HP support with the information gathered in the previous steps.

WASSPI-13

Description	Exception occurred while running an <code>opcmon</code> process.
Severity	Critical
Help Text	<p>Probable Cause:</p> <p>The WebSphereS SPI data collector attempted to run a process to execute an <code>opcmon</code> call. Either the process could not be created or was interrupted.</p> <p>Suggested Action:</p> <p>For UNIX systems, make sure the kernel configurable parameters <code>NPROC</code> and <code>MAXUPRC</code> are set high enough to allow process creation.</p>

WASSPI-14

Description	Unable to find file <i><file_name></i> .
Severity	Critical
Help Text	<p>Probable Cause:</p> <p>A file required by the WebSphere data collector could not be found.</p> <p>Suggested Action:</p> <ol style="list-style-type: none">1 Refer to the text following the error message in the WebSphere SPI error log to help identify the underlying cause of the problem. You can view the SPI error log for a managed node by using the View Error File application in the Application Bank window. The error message can be identified by the date/time stamp.2 Reinstall the WebSphere SPI on the managed node.3 Run the WebSphere SPI configuration utility from the Application Bank.

WASSPI-15

Description	Error parsing XML document <i><file_name></i> .
Severity	Critical
Help Text	<p>Probable Cause: An error occurred while parsing the specified XML document.</p> <p>Suggested Action:</p> <ol style="list-style-type: none">1 Refer to the text following the error message in the WebSphere SPI error log to help identify the underlying cause of the problem. You can view the SPI error log for a managed node by using the View Error File application in the Application Bank window. The error message can be identified by the date/time stamp.2 If the XML document was provided by the user, correct the document. Refer to the WebSphere SPI User's Guide for more information about the correct format for a user-defined metric definition document.3 If the XML document is a document that is shipped with the WebSphere SPI, run the SPI configuration utility from the Application Bank to reinstall the WebSphere SPI configuration files.

WASSPI-16

Description	A bad filter (<i><filter_value></i>) was specified for metric <i><metric_number></i> .
Severity	Major
Help Text	<p>Probable Cause: A metric filter is incorrectly specified in the metric definitions XML document.</p> <p>Suggested Action:</p> <ol style="list-style-type: none">1 If the metric is specified in an XML document that was provided by the user, correct the document. Refer to the WebSphere SPI User's Guide for more information about the correct format for a user-defined metric definition document.2 If the metric is a pre-defined metric that is shipped with the WebSphere SPI, run the SPI configuration utility from the Application Bank to reinstall the WebSphere SPI configuration files.

WASSPI-18

Description	Error logging to datasource <datasource_class_name>. Logging process returned exit code <exit_code>.
Severity	Warning
Help Text	<p>Probable Cause: The agent on the managed node may be in an inconsistent state.</p> <p>Suggested Action: Restart the agent on the managed node.</p> <p>Probable Cause: The ddlog process started by the WebSphere SPI data collector returned a non-zero error code.</p> <p>Suggested Action:</p> <ol style="list-style-type: none">1 Identify the steps to reproduce the problem.2 Turn on tracing and reproduce the problem. Refer to the WebSphere SPI User's Guide for instructions on how to turn on tracing3 Run the Gather Info application.4 Contact HP support with the information gathered in the previous steps.

WASSPI-19

Description	Encountered problem instantiating XSLT transformer with <file_name>.
Severity	Major
Help Text	<p>Probable Cause: The XSL document that specifies the auto action report output contains errors.</p> <p>Suggested Action:</p> <ol style="list-style-type: none">1 Reinstall the WebSphere SPI.2 Run the WebSphere SPI configuration utility from the Application Bank.

WASSPI-20

Description	Encountered problem creating report for metric <metric_number>.
Severity	Major
Help Text	<p>Probable Cause: An error occurred while producing a text report for the specified metric.</p> <p>Suggested Action:</p> <ol style="list-style-type: none">1 Reinstall the WebSphere SPI.2 Run the WebSphere SPI configuration utility from the Application Bank.

WASSPI-21

Description	Encountered problem instantiating factory implementation <i><class name></i> .
Severity	Critical
Help Text	<p>Probable Cause: The java property specifying the class name is incorrect or the class does not implement the AppServerFactory interface.</p> <p>Suggested Action: Verify that the java property <code>appserver.implementation</code> is set to the fully qualified name of the class which implements the AppServerFactory interface. For example, if set on the java command-line: <code>-Dappserver.implementation=com.hp.openview.wasspi.WBSAppServerFactory</code></p>

WASSPI-22

Description	The PMI instrumentation level was changed from <i><old_level></i> to <i><new_level></i> for module <i><module_name></i> in server <i><server_name></i> .
Severity	Warning
Help Text	<p>Probable Cause: A requested metric's impact rating exceeded the instrumentation level settings of the application server. The instrumentation level of the appropriate PMI module was raised to enable collection of the requested metric.</p>

WASSPI-23

Description	Error initializing collector analyzer for server <i><server_name></i> .
Severity	Critical
Help Text	<p>Probable Cause An exception was encountered while preparing to monitor server <i><server_name></i>.</p> <p>Suggested Action</p> <ol style="list-style-type: none">1 Refer to the text following the error message in the WebSphere SPI error log to help identify the underlying cause of the problem. You can view the SPI error log for a managed node by using the View Error File application in the Application Bank window. The error message can be identified by the date/time stamp.2 Identify the steps to reproduce the problem.3 Turn on tracing and reproduce the problem. Refer to the WebSphere SPI User's Guide for instructions on how to turn on tracing.4 Run the Gather Info application.5 Contact HP support with the information gathered in the previous steps.

WASSPI-24

Description	Error logging in to server <server_name> with login <login>.
Severity	Critical
Help Text	<p>Probable Cause: A security exception occurred while logging in to server <server_name>.</p> <p>Suggested Action:</p> <ol style="list-style-type: none">1 Run the WebSphere SPI configuration utility from the Application Bank.2 Verify that you have specified the correct login and password on the managed node on which the error occurred.3 Verify the login has appropriate permissions.

WASSPI-25

Description	Performance monitoring service is not enabled on server <server_name>.
Severity	Warning
Help Text	<p>Probable Cause: PMI service is not enabled on server <server_name>.</p> <p>Suggested Action:</p> <ol style="list-style-type: none">1 Use the WebSphere Administrative Console to enable PMI on server <server_name>.2 Restart server <server_name>.

WASSPI-26

Description	The data logging process for server <server_name> timed-out.
Severity	Major
Help Text	<p>Probable Cause Depending on your configuration, either OVPA or CODA failed to exit before the time-out.</p> <p>Suggested Action</p> <ol style="list-style-type: none">1 Restart CODA using command <code>opcagt -start</code>.2 Restart OVPA using command <code>mwa restart</code>.

WASSPI-27

Description	RMI collector unable to process <i><command></i> .
Severity	Warning
Help Text	<p>Probable Cause An exception was encountered while performing an rmid related operation.</p> <p>Suggested Action</p> <ol style="list-style-type: none">1 Refer to the text following the error message in the WebSphere SPI error log to help identify the underlying cause of the problem. You can view the SPI error log for a managed node by using the View Error File application in the Application Bank window. The error message can be identified by the date/time stamp.2 Identify the steps to reproduce the problem.3 Turn on tracing and reproduce the problem. Refer to the WebSphere SPI User's Guide for instructions on how to turn on tracing.4 Run the Gather Info application.5 Contact HP support with the information gathered in the previous steps.

WASSPI-30

Description	Failed to start <i><rmid_path></i> on port <i><port></i> .
Severity	Critical
Help Text	<p>Probable Cause: The specified path is already in use.</p> <p>Suggested Action: Run the WebSphere SPI configuration utility from the Application Bank. Set the RMID_PORT property to a port number which is not currently in use.</p>

WASSPI-31

Description	Lost connection to RMI collector while processing <i><command></i> .
Severity	Warning

WASSPI-32

Description	Unable to retrieve metadata for mbean <i><JMX-ObjectName></i> .
Severity	Warning

WASSPI-33

Description	No actions matched server <i><server name></i> , version <i><version></i> .
Severity	Warning
Help Text	<p>Probable Cause: JMXAction elements define FromVersion and ToVersion tags which do not match the server version.</p> <p>Suggested Action: If the action is valid on the server, then either adjust the JMXAction definition's FromVersion/ToVersion elements or the server's VERSION property.</p>

WASSPI-34

Description	Metric <i><metric id></i> does not define any actions.
Severity	Warning
Help Text	<p>Probable Cause: The metric ID specified with the action <code>-m</code> option does not define a JMXActions element.</p> <p>Suggested Action: Correct the action <code>-m</code> option if an incorrect metric ID was specified. Otherwise, add a JMXActions definition to the metric definition.</p>

WASSPI-35

Description	Error executing action <i><action command-line></i> .
Severity	Major
Help Text	<p>Probable Cause: An unexpected error occurred while executing the action.</p> <p>Suggested Action: View the managed node's errorlog to determine the root cause which is logged following the error message.</p>

WASSPI-36

Description	MBean <i><JMX objectname></i> on server <i><server name></i> , does not expose operation <i><operation name></i> .
Severity	Warning
Help Text	<p>Probable Cause: An action's JMXCalls element defines an operation not exposed by the specified MBean.</p> <p>Suggested Action: Correct the JMXCalls element or remove the operation from the element.</p>

WASSPI-37

Description	MBean < <i>JMX objectname</i> > on server < <i>server name</i> >, does not expose attribute < <i>attribute name</i> > for write.
Severity	Warning
Help Text	Probable Cause: An action's JMXCalls element defines a write attribute exposed by the specified MBean as read-only. Suggested Action: If it is a custom MBean, update the MBean's management interface so the attribute is writable. Otherwise, remove the attribute definition from the JMXCalls element.

WASSPI-38

Description	MBean < <i>JMX objectname</i> > on server < <i>server name</i> >, does not expose attribute < <i>attribute name</i> >.
Severity	Warning
Help Text	Probable Cause: An action's JMXCalls element defines an attribute not exposed by the specified MBean ObjectName. Suggested Action: Correct the JMXCalls element or remove the attribute from the element.

WASSPI-39

Description	Error invoking operation < <i>operation name</i> > on MBean < <i>JMX objectname</i> >.
Severity	Major
Help Text	Probable Cause: An unexpected error occurred while invoking an operation on the specified MBean. The managed resource may have thrown an exception. Suggested Action: View the managed node's errorlog to determine the root cause which is logged following the error message.

WASSPI-40

Description	Error setting attribute <i><attribute name></i> on MBean <i><JMX objectname></i> .
Severity	Major
Help Text	<p>Probable Cause: An unexpected error occurred while setting an attribute on the specified MBean. The managed resource may have thrown an exception.</p> <p>Suggested Action: View the managed node's errorlog to determine the root cause which is logged following the error message.</p>

WASSPI-41

Description	Error getting attribute <i><attribute name></i> from MBean <i><JMX objectname></i> .
Severity	Major
Help Text	<p>Probable Cause: An unexpected error occurred while getting an attribute from the specified MBean. The managed resource may have thrown an exception.</p> <p>Suggested Action: View the managed node's errorlog to determine the root cause which is logged following the error message.</p>

WASSPI-42

Description	Error running command <i><command></i> .
Severity	Critical
Help Text	<p>Probable Cause A command started by the WebSphere SPI collector reported an error.</p> <p>Suggested Action</p> <ol style="list-style-type: none">1 Identify the steps to reproduce the problem.2 Turn on tracing and reproduce the problem. Refer to the WebSphere SPI User's Guide for instructions on how to turn on tracing.3 Run the Gather Info application.4 Contact HP support with the information gathered in the previous steps.

WASSPI-43

Description	Error publishing event <i><event-type></i> .
Severity	Major
Help Text	Probable Cause An unexpected error occurred while a publisher was handling a metric or collect event. Suggested Action View the managed node's error log to determine the cause which is logged following the error message.

WASSPI-201

Description	File <i><filename></i> not found.
Severity	Critical
Help Text	Probable Cause: A configuration file could not be found. Suggested Action: Run the WebSphere SPI configuration utility from the Application Bank. Verify that the correct information has been specified for the WebSphere servers on the managed node on which the error occurred.

WASSPI-202

Description	Cannot read file <i><filename></i> .
Severity	Critical
Help Text	Probable Cause: <ul style="list-style-type: none">• A file could not be opened or it could not be found.• Permissions may be incorrect or a directory may be corrupt. Suggested Action: <ol style="list-style-type: none">1 Run the WebSphere SPI configuration utility from the Application Bank. Verify that the correct information has been specified for the WebSphere servers on the managed node on which the error occurred.2 Verify that the permissions are correct for the ITO user to read this file.

WASSPI-203

Description	Cannot write file <i><filename></i> .
Severity	Critical
Help Text	<p>Probable Cause: Permissions may be incorrect, or a file or directory may be corrupt.</p> <p>Suggested Action:</p> <ol style="list-style-type: none">1 Run the WebSphere SPI configuration utility from the Application Bank. Verify that the correct information has been specified for the WebSphere servers on the managed node on which the error occurred.2 Verify that the permissions are correct for the ITO user to write this file.

WASSPI-204

Description	Error sending <code>opcmsg</code> <i><message></i> .
Severity	Critical
Help Text	<p>Probable Cause: There was a problem running <code>opcmsg</code>. <code>opcmsg</code> may be missing or not have permissions to execute (ITO installation errors) or the system process table may be full.</p> <p>Suggested Action: Confirm that ITO is properly installed and deployed to the managed node. Ensure that the process table is not full. If it is, consider having the system administrator increase it.</p>

WASSPI-205

Description	Error sending <code>opcmon</code> <i><command></i> .
Severity	Critical
Help Text	<p>Probable Cause: There was a problem running <code>opcmon</code>. <code>opcmon</code> may be missing or not have permissions to execute (ITO installation errors) or the system process table may be full.</p> <p>Suggested Action: Confirm that ITO is properly installed and deployed to the managed node. Ensure that the process table is not full. If it is, consider having the system administrator increase it.</p>

WASSPI-206

Description	Cannot read directory <directory>.
Severity	Critical
Help Text	Probable Cause: The permissions on the directory prevent the ITO user from reading it or the directory is corrupt. Suggested Action: Verify that the permissions are correct for the ITO user for this directory.

WASSPI-207

Description	Cannot move <filename> to <filename>.
Severity	Critical
Help Text	Probable Cause: <ol style="list-style-type: none">1 Insufficient permissions.2 Insufficient disk space.3 File table problems. Suggested Action: <ol style="list-style-type: none">1 Verify that the permissions are correct for the ITO user.2 Verify that there is enough disk space to create files.3 Run the WebSphere SPI configuration utility from the Application Bank.

WASSPI-208

Description	WBSSPI must be configured before it can be used.
Severity	Critical
Help Text	Probable Cause: The SPI has not been configured on this node. Suggested Action: <ol style="list-style-type: none">1 Run the WebSphere SPI configuration utility from the Application Bank. Verify that you have specified the correct information for the WebSphere servers on the managed node on which the error occurred.2 Run the Verify utility from the application band to confirm that the SPI has been successfully configured.

WASSPI-209

Description	Cannot contact WebSphere Server.
Severity	Critical
Help Text	<p>Probable Cause:</p> <ul style="list-style-type: none">• The server could be down or not responding.• The SPI may be configured incorrectly. <p>Suggested Action:</p> <ol style="list-style-type: none">1 Verify that WebSphere is up and running properly.2 Run the WebSphere SPI configuration utility from the Application Bank. Verify that the correct information has been specified for the WebSphere servers on the managed node on which the error occurred.

WASSPI-210

Description	Cannot configure SPI.
Severity	Critical
Help Text	<p>Probable Cause:</p> <p>The SPI configuration process failed.</p> <p>Suggested Action:</p> <ol style="list-style-type: none">1 Refer to the text following the error message in the WebSphere SPI error log to help identify the underlying cause of the problem. The error messages previous to this one will provide more information about the problem. You can view the SPI error log for a managed node by using the View Error File application in the Application Bank window. The error message can be identified by the date/time stamp.2 Reinstall the SPI and run the WebSphere SPI configuration utility from the Application Bank.

WASSPI-211

Description	Cannot create directory <directory>.
Severity	Critical
Help Text	<p>Probable Cause: There are insufficient permissions for the ITO user to create the directory or there is insufficient disk space.</p> <p>Suggested Action:</p> <p>Verify that the permissions are correct for the OVO user for this directory. Verify that there is enough disk space.</p>

WASSPI-213

Description	Improper parameters to program <i><name></i> . Usage: <i><usage></i> .
Severity	Critical
Help Text	Probable Cause: The parameters to the program are incorrect. Suggested Action: Correct the parameters.

WASSPI-214

Description	Cannot run program <i><program name></i> .
Severity	Critical
Help Text	Probable Cause: The program failed to run. It may be missing, permissions may be incorrect, the process table may be full. Suggested Action: <ol style="list-style-type: none">1 Verify that the file exists. If it is a SPI program and the file is missing, reinstall the SPI and run the WebSphere SPI configuration utility from the Application Bank.2 Verify that the permissions are correct for the ITO user.

WASSPI-216

Description	Configuration variable <i><name></i> missing for server <i><server_name></i> .
Severity	Critical
Help Text	Probable Cause: A required SPI configuration variable was not found. Suggested Action: <ol style="list-style-type: none">1 Run the WebSphere SPI configuration utility from the Application Bank.2 Verify that the correct information has been specified in the configuration for the managed node on which the error occurred.

WASSPI-218

Description	WebSphere monitoring has been turned OFF for <server_name>.
Severity	Warning
Help Text	<p>Probable Cause: Collection has been turned off for the specified server.</p> <p>Suggested Action: If desired, collection can be turned on by setting COLLECT = ON in the SiteConfig file in the SPI configuration directory on the managed node. The configuration directory is /var/opt/OV/wasspi/wbs/conf on Unix platforms or /usr/OV/wasspi/wbs/conf on NT platforms.</p>

WASSPI-219

Description	WebSphere monitoring has been turned ON for <server_name>.
Severity	Critical
Help Text	<p>Probable Cause: Collection has been turned on for the specified server.</p> <p>Suggested Action: If desired, collection can be turned on by setting COLLECT = OFF in the SiteConfig file in the SPI configuration directory on the managed node. The configuration directory is /var/opt/OV/wasspi/wbs/conf on Unix platforms or /usr/OV/wasspi/wbs/conf on NT platforms.</p>

WASSPI-221

Description	<file_name> does not exist.
Severity	Critical
Help Text	<p>Probable Cause: The specified file does not exist. If it is a log file, no entries have ever been logged to it. If it is a property file, then it has not been configured.</p> <p>Suggested Action: Log files: If there have never been any entries written to the file, no action is necessary. Otherwise, run the WebSphere SPI configuration utility from the Application Bank. Property files: Run the WebSphere SPI configuration utility from the application bank.</p>

WASSPI-222

Description	<file_name> is empty.
Severity	Critical
Help Text	<p>Probable Cause: The specified file is empty. If it is a log file, no entries have ever been logged to it, or the entries have been cleaned out. If it is a property file, then it is not properly configured.</p> <p>Suggested Action: If the file is a configuration file, run the WebSphere SPI configuration utility from the Application Bank.</p>

WASSPI-223

Description	Cannot read <file_name>.
Severity	Critical
Help Text	<p>Probable Cause:</p> <ol style="list-style-type: none">1 A file could not be opened or it could not be found.2 Permissions may be incorrect or a directory may be corrupt. <p>Suggested Action:</p> <ol style="list-style-type: none">1 Run the WebSphere SPI configuration utility from the Application Bank. Verify that you have specified the correct information for the WebSphere servers on the managed node on which the error occurred.2 Verify that the permissions are correct for the ITO user to read this file.

WASSPI-224

Description	ddfcomp returned an error configuring <name>.
Severity	Critical
Help Text	<p>Probable Cause: ddfcomp returned an error. This could be because neither MeasureWare nor CODA is installed on the system or because of an error configuring MeasureWare or CODA.</p> <p>Suggested Action:</p> <ol style="list-style-type: none">1 If the performance agent is not installed, this error can be ignored.2 Identify the steps to reproduce the problem.3 Turn on tracing and reproduce the problem. Refer to the WebSphere SPI User's Guide for instructions on how to turn on tracing.4 Run the Gather Info application.5 Contact HP support with the information gathered in the previous steps.

WASSPI-225

Description	No logfiles were found. Did you run Config WBSSPI?
Severity	Critical
Help Text	Probable Cause: The logfile list is empty. Suggested Action: Reinstall the SPI and run the WebSphere SPI configuration utility from the Application Bank.

WASSPI-226

Description	Cannot read file <file_name>.
Severity	Critical
Help Text	Probable Cause: <ul style="list-style-type: none">• A file could not be opened or it could not be found.• Permissions may be incorrect or a directory may be corrupt. Suggested Action: <ol style="list-style-type: none">1 Run the WebSphere SPI configuration utility from the Application Bank.2 Verify that you have specified the correct information for the WebSphere servers on the managed node on which the error occurred.3 Verify that the permissions are correct for the ITO user to read this file.

WASSPI-227

Description	No OpenView performance agent is installed. Data source will not be configured.
Severity	Warning
Help Text	Probable Cause: If a performance tool is available, the SPI integrates with it. This warning indicates that none is available. Suggested Action: If you should have a performance agent installed, verify that it is installed correctly and is running; reinstall it if necessary. Otherwise, this message can be ignored.

WASSPI-228

Description	ddflog returned an error logging <logfile-name>: <system-error-msg>
Severity	Critical
Help Text	<p>Probable Cause: The agent on the managed node may be in an inconsistent state.</p> <p>Suggested Action: Restart the agent on the managed node.</p> <p>Probable Cause: ddflog returned an error. This could be because the SPI was not properly configured to support logging performance data.</p> <p>Suggested Action:</p> <ol style="list-style-type: none">1 Try reconfiguring the WASSPI on the node having the problem.2 Otherwise, examine the system error message, if any, for clues to the problem.3 Turn on tracing and reproduce the problem. Refer to the WebSphere SPI User's Guide for instructions on how to turn on tracing.4 Run the Gather Info application.5 Contact HP support with the information gathered in the previous steps.

WASSPI-229

Description	Cannot connect to directory <directory-name>
Severity	Critical
Help Text	<p>Probable Cause: The directory does not exist, or the user the agent is running under does not have appropriate permissions to the directory.</p> <p>Suggested Action:</p> <ol style="list-style-type: none">1 Run the WebSphere SPI configuration utility from the Application Bank2 Reinstall the SPI and run the WebSphere SPI configuration.

WASSPI-230

Description	Cannot get lock <i><file></i> after <i><time></i>
Severity	Critical
Help Text	<p>Probable Cause:</p> <p>The lock file <i><file></i> was not cleared in the <i><time></i> indicated. This could be due to a very slow running or hung SPI process. Also could be a SPI process that had a lock was killed before the lock it had open had been cleared.</p> <p>Suggested Action:</p> <p>Make sure no SPI processes are running. Manually remove the lock file.</p>

WASSPI-231

Description	Error starting JRE <i><JVM_file></i> : <i><message></i>
Severity	Critical
Help Text	<p>Probable Cause: Some error occurred starting Java. This could be that the specified JVM does not exist, has bad permissions, or that there are system resource limitations such as process table entries or memory, or that the JAVA_HOME variable in the SPI SiteConfig file is not set correctly.</p> <p>Suggested Action:</p> <p>Check your JAVA_HOME or HOME variables in the SPI configuration file. Check for other errors generated at the same time, they may indicate the real cause.</p>

WASSPI-232

Description	Server <i><name></i> specified on command line, but not in configuration
Severity	Critical
Help Text	<p>Probable Cause: There was a <i>-i</i> or <i>-e</i> specified on the collector command line which specified a server name that was not listed in the SPI configuration. The collector only knows about servers listed in the configuration.</p> <p>Suggested Action:</p> <ol style="list-style-type: none">1 Specify a correct server name on the command line.2 Run the WebSphere SPI configuration utility from the Application Bank. Verify the WebSphere server names are correctly listed and spelled in the SPI configuration file.

WASSPI-234

Description	Error running program <i><file></i> , return value: <i><n></i>
Severity	Critical
Help Text	<p>Probable Cause: The SPI attempted to run some tool or auxiliary program and encountered an error doing so. The tool or program is shown in the message as <i><file></i> and the return code from attempting to run it is shown as <i><n></i>.</p> <p>Suggested Action: If the tool is a SPI tool, make sure the SPI has been installed and configured correctly. If not, reinstall or reconfigure. If it is a system tool, make sure there are no system problems that prevent the tool from running.</p>

WASSPI-235

Description	Restart of MeasureWare agents failed
Severity	Warning
Help Text	<p>Probable Cause: The SPI attempted to automatically restart the MeasureWare agents and the automatic attempt failed.</p> <p>Suggested Action: Restart the MeasureWare agents manually using the <code>mwa restart server</code> command.</p>

WASSPI-236

Description	Failure when running XSLT on <i><xml></i> with stylesheet <i><xsl></i> : <i><message></i>
Severity	Critical
Help Text	<p>Probable Cause: As part of setting up graphing for user defined metrics, a translation of the UDM XML is done. This message indicated that the translation failed for some reason.</p> <p>Suggested Action: Review the message shown. It is most likely that there is an error in the XML.</p>

WASSPI-237

Description	Setting up Data Source <i><datasource></i>
Severity	Normal
Help Text	This is an informational message that a OVPM or MeasureWare datasource was setup.

WASSPI-238

Description	No User Defined Metrics found
Severity	Warning
Help Text	Probable Cause: The UDM Graph Enable application was run, but no UDM metrics had been defined. Suggested Action: Check that the UDM XML file has been named correctly.

WASSPI-240

Description	UDM Data Logging integration Complete
Severity	Information
Help Text	The UDM Graph Enable application successfully executed and UDM graph metrics will be available for graphing.

WASSPI-241

Description	Cannot delete file <file>
Severity	Critical
Help Text	Probable Cause: The SPI attempted to delete a file, but was unable to do so. It may be that the protection of the file is set so that the ITO user cannot delete it, or that there is some system problem preventing the file from being deleted. Suggested Action: Make sure the protection of the file is correct.

WASSPI-242

Description	UDM graphing successfully disabled.
Severity	Information
Help Text	The UDM Graph Disable application successfully executed.

WASSPI-254

Description	Java exited with an error
Severity	Critical
Help Text	<p>Probable Cause: While running the collector or other java application, either Java encountered an error of some kind, or the Java application exited with an error exit.</p> <p>Suggested Action: Check for other errors generated at the same time, they may indicate the real cause. Review the SPI's error log, it may give some other clues.</p>

WASSPI-303

Description	The SPI configuration for <node_name> was updated by discovery in the OVO server.
Help Text	<p>This is a normal operation performed by the Discovery application or the WBSSPI-Discovery scheduled template action. This message is sent to inform an operator that the WBSSPI Discovery has:</p> <ul style="list-style-type: none">• found WebSphere application servers on a managed node that have not been configured,• found new WebSphere application servers on a configured node, or• detected changes in the application servers configuration. <p>The WBSSPI-Discovery components automatically update these changes in the SPI configuration.</p> <p>Please review the new configuration details that are included as part of the message text and verify the information for correctness.</p>

WASSPI-501

Description	Retrieving configuration data from the OVO server
Help Text	<p>This is a normal operation performed by the Discovery application or the WBSSPI-Discovery scheduled template action. Upon successful operation, the entry in the 'A' (Action) column for this message should change from R (running) to S (success).</p> <p>However, if the entry in this column changes to F (fail), the operation was not completed successfully. Please select this node and run the Discovery application again.</p> <p>If the problem persists, please refer to the document <i>HP OpenView Smart Plug-in for WebSphere Application Server Configuration Guide</i>. The chapter called Configuring the WBS SPI provides instructions on how to manually configure the WBS SPI.</p>

WASSPI-502

Description	Updating the WBSSPI configuration data with discovered information
Help Text	<p>This is a normal operation performed by the Discovery application or the WBSSPI-Discovery scheduled template action. Upon successful operation, the entry in the 'A' (Action) column for this message should change from R (running) to S (success).</p> <p>However, if the entry in this column changes to F (fail), the operation was not completed successfully. Please select this node and run the Discovery application again.</p> <p>If the problem persists, please refer to the document <i>HP OpenView Smart Plug-in for WebSphere Application Server Configuration Guide</i>. The chapter called Configuring the WBS SPI provides instructions on how to manually configure the WBS SPI.</p>

WASSPI-503

Description	The configuration for <node_name> node has been automatically updated by the WBSSPI Discovery ...
Help Text	<p>This is a normal operation performed by the WBSSPI Discovery policy action. It sends this message to inform an operator that the WBSSPI Discovery either discovered WebSphere application servers on a managed node that has not been configured or detected changes in the application servers configuration. The Discovery components automatically update these changes in the SPI configuration.</p> <p>Please review the new configuration details that are included as part of the message text and verify the information for correctness. The new configuration can also be viewed by launching the WBSSPI Configure tool.</p>

WASSPI-541

Description	No running WebSphere application servers found
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Help Text

Probable Cause: A WebSphere application server is not present (or not running) on the node.

Verification: Verify the presence of an application server on the node, and check that the application server is running.

Suggested Action: Create or start one or more application servers on the node. Select the node and run the Discovery application again.

Please make sure that all of the application servers you wish to monitor are running, before the WBSSPI-Discovery template is deployed or the Discovery application is launched. Only the servers that are running will be automatically configured.

NOTE: If it has been confirmed that WebSphere application servers exist on the system and are in the running state, then this message indicates that the WBSSPI Discovery is unable to discover the application servers. Please try the followings:

- 1 Launch the Discovery application.
- 2 Select the Default Properties item corresponding to this managed node. Select the HOME_LIST property from the Select a Property to Set... menu and click **Set Property**.
- 3 Enter the HOME directory where WebSphere application server programs are installed on this node. If there are more than one installation instance of WebSphere, enter the HOME directories, separated by a semicolon. (For example, /opt/WebSphere/AppServer;/opt/ibm/ WebSphere5/AppServer).
- 4 Click **Next** and complete the operation.
- 5 Allow the WBSSPI Discovery application to complete. (A message starting with WASSPI-303 appears in the Message Browser with the node name embedded in the message text).

If the WBSSPI configurations are not properly updated and the application servers are not displayed on the Service Navigator's Services tree, check the WBSSPI Discovery log file called `<OvAgentDir>/wasspi/wbs/log discovery.log` on the managed node for any ERROR log entries.

Probable Cause: Unsuccessful login to the secured WebSphere application server environment.

Verification: Launch the WebSphere administrative console on the node and check if security is enabled. Please also make sure that the LOGIN and PASSWORD properties for this node are present and valid in the WBSSPI configuration. Launch the Config WBSSPI application and verify the accuracy of the information. The PASSWORD information is encrypted for security purposes.

Suggested Action: Select the node and run the Discovery application. Set the correct LOGIN/PASSWORD properties for the node (overwrite the existing encrypted data). Allow the WBSSPI-Discovery process to run again on the selected node.

Help Text Contd.	<p>WebSphere Application Server Version 4</p> <p>Probable Cause: WebSphere 4.0 AdminServer is not running on the node.</p> <p>Verification: Verify that the WebSphere 4.0 AdminServer is running by launching the administrative console on the node.</p> <p>Suggested Action: If the administrative console fails to launch on the node, please start the WebSphere 4.0 AdminServer. Select the node and run the Discovery application again.</p> <p>Note: If problem persists, please refer to the <i>HP OpenView Smart Plug-in for WebSphere Application Server Configuration Guide</i>. The chapter called Configuring the WBS SPI provides instructions on how to manually configure the WBS SPI.</p> <p>Note: A WebSphere 4.0 AdminServer is identified by the port number it uses. Therefore, precautions should be taken when adding or modifying configuration information. If the port number is not the default value (port 900) or if multiple instances of the AdminServer are present, make sure that correct information is entered for the specific instance of the AdminServer.</p>
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WASSPI-561

Description	Failed to communicate with the WebSphere 4 AdminServer on port: <code><port_number></code>
Help Text	<p>Probable Cause: WebSphere 4.0 AdminServer is not running on the node.</p> <p>Verification: Verify that the WebSphere 4.0 AdminServer is running by launching the administrative console on the node.</p> <p>Suggested Action: If the administrative console fails to launch on the node, please start the WebSphere 4.0 AdminServer. Select the node and run the Discovery application again.</p> <hr/> <p>Probable Cause: Unsuccessful login to the secured WebSphere application server environment.</p> <p>Verification: Launch the WebSphere administrative console on the node and check if security is enabled. Please also make sure that the LOGIN and PASSWORD properties for this node are present and valid in the WBSSPI configurations. Launch the Config WBSSPI application and verify the accuracy of the information. The PASSWORD information is encrypted for security purposes.</p> <p>Suggested Action: Select the node and run the Discovery application. Set the correct LOGIN/PASSWORD properties for the node (overwrite the existing encrypted data). Allow the WBSSPI-Discovery process to run again on the selected node.</p> <p>Note: If problem persists, please refer to the <i>HP OpenView Smart Plug-in for WebSphere Application Server Configuration Guide</i>. The chapter called Configuring the WBS SPI provides instructions on how to manually configure the WBS SPI.</p> <p>Note: A WebSphere 4.0 AdminServer is identified by the port number it uses. Therefore, precautions should be taken when adding or modifying configuration information. If the port number is not the default value (port 900) or if multiple instances of the AdminServer are present, make sure that correct information is entered for the specific instance of the AdminServer.</p>

WASSPI-562

Description	Security access failure. Missing or invalid LOGIN/PASSWORD parameter for WebSphere 4 AdminServer on port: <code><port_number></code>
Help Text	<p>Probable Cause: The values for the LOGIN and PASSWORD properties for this node are missing from the WBSSPI configuration or incorrect information was entered.</p> <p>Verification: Launch the WebSphere administrative console on the node and check if security is enabled. Please also make sure that the LOGIN and PASSWORD properties for this node are present and valid in the WBSSPI configurations. Launch the Config WBSSPI application and verify the accuracy of the information. The PASSWORD information is encrypted for security purposes.</p> <p>Suggested Action: Select the node and run the Discovery application. Set the correct LOGIN/PASSWORD properties for the node (overwrite the existing encrypted data). Allow the WBSSPI-Discovery process to run again on the selected node.</p> <p>Note: If problem persists, please refer to the <i>HP OpenView Smart Plug-in for WebSphere Application Server Configuration Guide</i>. The chapter called Configuring the WBS SPI provides instructions on how to manually configure the WBS SPI.</p> <p>Note: A WebSphere 4.0 AdminServer is identified by the port number it uses. Therefore, precautions should be taken when adding or modifying configuration information. If the port number is not the default value (port 900) or if multiple instances of the AdminServer are present, make sure that correct information is entered for the specific instance of the AdminServer.</p>

WASSPI-563

Description	Security access failure. Invalid LOGIN/PASSWORD parameter for WebSphere 4 AdminServer on port: <code><port_number></code>
Help Text	<p>Probable Cause: The values for the LOGIN and PASSWORD properties for this node are missing from the WBSSPI configurations, or incorrect information was entered.</p> <p>Verification: Launch the WebSphere administrative console on the node and check if security is enabled. Please also make sure that the LOGIN and PASSWORD properties for this node are present and valid in the WBSSPI configurations. Launch the Config WBSSPI application and verify the accuracy of the information. The PASSWORD information is encrypted for security purposes.</p> <p>Suggested Action: Select the node and run the Discovery application. Set the correct LOGIN/PASSWORD properties for the node (overwrite the existing encrypted data). Allow the WBSSPI-Discovery process to run again on the selected node.</p> <p>Note: If problem persists, please refer to the <i>HP OpenView Smart Plug-in for WebSphere Application Server Configuration Guide</i>. The chapter called Configuring the WBS SPI provides instructions on how to manually configure the WBS SPI.</p> <p>Note: A WebSphere 4.0 AdminServer is identified by the port number it uses. Therefore, precautions should be taken when adding or modifying configuration information. If the port number is not the default value (port 900) or if multiple instances of the AdminServer are present, make sure that correct information is entered for the specific instance of the AdminServer.</p>

WASSPI-564

Description	Security access failure. Unable to communicate with the WebSphere 4 AdminServer on port: <code><port_number></code>
Help Text	<p>Probable Cause: WebSphere 4.0 AdminServer is not running on the node.</p> <p>Verification: Verify that the WebSphere 4.0 AdminServer is running by launching the administrative console on the node.</p> <p>Suggested Action: If the administrative console fails to launch on the node, please start the WebSphere 4.0 AdminServer. Select the node and run the Discovery application again.</p> <hr/> <p>Probable Cause: The values for the LOGIN and PASSWORD properties for this node are missing from the WBSSPI configurations, or incorrect information was entered.</p> <p>Verification: Launch the WebSphere administrative console on the node and check if security is enabled. Please also make sure that the LOGIN and PASSWORD properties for this node are present and valid in the WBSSPI configurations. Launch the Config WBSSPI application and verify the accuracy of the information. The PASSWORD information is encrypted for security purposes.</p> <p>Suggested Action: Select the node and run the Discovery application. Set the correct LOGIN/PASSWORD properties for the node (overwrite the existing encrypted data). Allow the WBSSPI-Discovery process to run again on the selected node.</p> <p>Note: If problem persists, please refer to the <i>HP OpenView Smart Plug-in for WebSphere Application Server Configuration Guide</i>. The chapter called Configuring the WBS SPI provides instructions on how to manually configure the WBS SPI.</p> <p>Note: A WebSphere 4.0 AdminServer is identified by the port number it uses. Therefore, precautions should be taken when adding or modifying configuration information. If the port number is not the default value (port 900) or if multiple instances of the AdminServer are present, make sure that correct information is entered for the specific instance of the AdminServer.</p>

WASSPI-565

Description	Security access failure. Unable to log in to the WebSphere 4 AdminServer on port: <port_number>
Help Text	<p>Probable Cause: The values for the LOGIN and PASSWORD properties for this node are missing from the WBSSPI configurations, or incorrect information was entered.</p> <p>Verification: Launch the WebSphere administrative console on the node and check if security is enabled. Please also make sure that the LOGIN and PASSWORD properties for this node are present and valid in the WBSSPI configurations. Launch the Config WBSSPI application and verify the accuracy of the information. The PASSWORD information is encrypted for security purposes.</p> <p>Suggested Action: Select the node and run the Discovery application. Set the correct LOGIN/PASSWORD properties for the node (overwrite the existing encrypted data). Allow the WBSSPI-Discovery process to run again on the selected node.</p> <p>Note: If problem persists, please refer to the <i>HP OpenView Smart Plug-in for WebSphere Application Server Configuration Guide</i>. The chapter called Configuring the WBS SPI provides instructions on how to manually configure the WBS SPI.</p> <p>Note: A WebSphere 4.0 AdminServer is identified by the port number it uses. Therefore, precautions should be taken when adding or modifying configuration information. If the port number is not the default value (port 900) or if multiple instances of the AdminServer are present, make sure that correct information is entered for the specific instance of the AdminServer.</p>

WASSPI-571

Description	Failed to communicate with WebSphere Application Server
Help Text	<p>WebSphere Application Server versions 5</p> <p>Probable Cause: A WebSphere application server is not present (or not running) on the node.</p> <p>Verification: Verify the presence of an application server on the node, and check that the application server is running.</p> <p>Suggested Action: Create or start one or more application servers on the node. Select the node and run the Discovery application again.</p> <p>Please make sure that all of the application servers you wish to monitor are running, before the WBSSPI-Discovery template is deployed or the Discovery application is launched. Only the servers that are running will be automatically configured.</p>
	<p>WebSphere Application Server versions 5</p> <p>Probable Cause: Unsuccessful login to the secured WebSphere application server environment.</p> <p>Verification: Launch the WebSphere administrative console on the node and check if security is enabled. Please also make sure that the LOGIN and PASSWORD properties for this node are present and valid in the WBSSPI configurations. Launch the Config WBSSPI application and verify the accuracy of the information. The PASSWORD information is encrypted for security purposes.</p> <p>Suggested Action: Select the node and run the Discovery application. Set the correct LOGIN/PASSWORD properties for the node (overwrite the existing encrypted data). Allow the WBSSPI-Discovery process to run again on the selected node.</p> <p>Note: If problem persists, please refer to the <i>HP OpenView Smart Plug-in for WebSphere Application Server Configuration Guide</i>. The chapter called Configuring the WBS SPI provides instructions on how to manually configure the WBS SPI.</p>

WASSPI-572

Description	WebSphere Login Error - Missing Login Data
Help Text	<p>WebSphere Application Server versions 5</p> <p>Probable Cause: The values for the LOGIN and PASSWORD properties for this node are missing from the WBSSPI configurations.</p> <p>Verification: Launch the WebSphere administrative console on the node and check if security is enabled. Please make sure that the LOGIN and PASSWORD properties for this node are present and valid in the WBSSPI configurations. Launch the Config WBSSPI application and verify the accuracy of the information. The PASSWORD information is encrypted for security purposes.</p> <p>Suggested Action: Select the node and run the Discovery application. Set the correct LOGIN/PASSWORD properties for the node (overwrite the existing encrypted data). Allow the WBSSPI-Discovery process to run again on the selected node.</p> <p>Note: If problem persists, please refer to the <i>HP OpenView Smart Plug-in for WebSphere Application Server Configuration Guide</i>. The chapter called Configuring the WBS SPI provides instructions on how to manually configure the WBS SPI.</p>

WASSPI-573

Description	WebSphere Login Error - Invalid Login Data
Help Text	<p>WebSphere Application Server versions 5</p> <p>Probable Cause: The discovery application was unable to authenticate itself in a secured WebSphere server environment. This is likely due to incorrect values for the LOGIN and PASSWORD properties being provided in the WBSSPI configurations for this node.</p> <p>Verification: Launch the WebSphere administrative console on the node and check if security is enabled. Please make sure that the LOGIN and PASSWORD properties for this node are present and valid in the WBSSPI configurations. Launch the Config WBSSPI application and verify the accuracy of the information. The PASSWORD information is encrypted for security purposes.</p> <p>Suggested Action: Select the node and run the Discovery application. Set the correct LOGIN/PASSWORD properties for the node (overwrite the existing encrypted data). Allow the WBSSPI-Discovery process to run again on the selected node.</p> <p>Note: If problem persists, please refer to the <i>HP OpenView Smart Plug-in for WebSphere Application Server Configuration Guide</i>. The chapter called Configuring the WBS SPI provides instructions on how to manually configure the WBS SPI.</p>

WASSPI-581

Description	INTERNAL ERROR - <code><error_message></code>
Help Text	<p>Probable Cause: Read the error message that accompanies the message text to determine the cause of the problem. The WBSSPI Discovery application may not function properly due to one (or more) of the following conditions on the managed node:</p> <ul style="list-style-type: none">• A WBSSPI Discovery application, script, or data file is missing, has been removed, or is placed in non-standard directory paths.• There were problems with the OpenView agent installation.• The OpenView agents installation directory cannot be determined.• OpenView operator account that runs the WBSSPI Discovery does not have the permission to open/read the specified file or execute the required script/command.• General network errors. <p>Suggested Action: Check with the OpenView or the IT specialist in the organization on matters related to these issues. Once the problems have been resolved, select the node and run the Discovery application again.</p> <p>Note: If problem persists, please refer to the <i>HP OpenView Smart Plug-in for WebSphere Application Server Configuration Guide</i>. The chapter called Configuring the WBS SPI provides instructions on how to manually configure the WBS SPI.</p> <p>Contact your HP support representative if the problem cannot be resolved or if further assistance is needed.</p>

WASSPI-585

Description	SYSTEM ERROR - <i><error_message></i>
Help Text	<p>Probable Cause: Read the error message that accompanies the message text to determine the cause of the problem. The WBSSPI Discovery application may not function properly due to one (or more) of the following conditions on the managed node:</p> <ul style="list-style-type: none">• Operating system commands used by WBSSPI Discovery are missing, have been removed, or are placed in non-standard directory paths.• The system's PATH variable has not been set for certain system commands.• Required operating system files or software installation registry cannot be found or is in a non-standard directory path.• OpenView operator account that runs the WBSSPI Discovery does not have the permission to open/read system files or execute the necessary system commands.• General network errors. <p>Suggested Action: Check with the OpenView or the IT specialist in the organization on matters related to these issues. Once the problems have been resolved, select the node and run the Discovery application again.</p> <p>Note: If problem persists, please refer to the <i>HP OpenView Smart Plug-in for WebSphere Application Server Configuration Guide</i>. The chapter called Configuring the WBS SPI provides instructions on how to manually configure the WBS SPI.</p>

WASSPI-591

Description	WEBSHERE ERROR - <i><error_message></i>
Help Text	<p>Probable Cause: Read the error message that accompanies the message text to determine the cause of the problem. The WBSSPI Discovery application may not function properly due to one (or more) of the following conditions on the managed node:</p> <ul style="list-style-type: none">• WebSphere commands used by WBSSPI Discovery are missing, have been removed, or are placed in non-standard directory paths.• OpenView operator account that runs the WBSSPI Discovery does not have the permission to open/read files or execute commands in the WebSphere installation directories. <p>Suggested Action: Check with the OpenView or the WebSphere application server specialist in the organization on matters related to these issues. Once the problems have been resolved, select the node and run the Discovery application again.</p> <p>Note: If problem persists, please refer to the <i>HP OpenView Smart Plug-in for WebSphere Application Server Configuration Guide</i>. The chapter called Configuring the WBS SPI provides instructions on how to manually configure the WBS SPI.</p>

Others

Description	An unknown error appears in the WebSphere SPI error log.
Severity	Warning
Help Text	Suggested Action: <ol style="list-style-type: none">1 Refer to the text following the error message in the WebSphere SPI error log to help identify the problem. You can view the SPI error log for a managed node by using the 'View Error File' application in the Application Bank window. The error message can be identified by the date/time stamp.2 Identify the steps to reproduce the problem.3 Turn on tracing and reproduce the problem. Refer to the WebSphere SPI User's Guide for instructions on how to turn on tracing.4 Run the 'Gather Info' application.5 Contact HP support with the information gathered in the previous steps.

A File Locations

You can find the Smart Plug-in for WebSphere Application Server (WBS SPI) configuration files and error logs in specific directories.

OVO Management Server File Locations

Operating System	File	File Location
HP-UX	Configuration	/opt/OV/wasspi/wbs/conf
Solaris	Configuration	/opt/OV/wasspi/wbs/conf

Managed Node File Locations

On DCE-based managed nodes or UNIX managed nodes that were already running the WBS SPI and are being switched to a non-root HTTPS agent environment (UNIX only: if these directories do not exist, refer to the next table for file locations):

Operating System	File	File Location
HP-UX, Solaris, Linux	Configuration	/var/opt/OV/wasspi/wbs/conf
HP-UX, Solaris, Linux	Error Logs	/var/opt/OV/wasspi/wbs/log
AIX	Configuration	/var/lpp/OV/wasspi/wbs/conf
AIX	Error Logs	/var/lpp/OV/wasspi/wbs/log
Windows (DCE)	Configuration	\usr\ov\wasspi\wbs\conf
Windows (DCE)	Error Logs	\usr\ov\wasspi\wbs\log
Windows (HTTPS)	Configuration	\Program Files\HP OpenView\data\wasspi\wbs\conf
Windows (HTTPS)	Error Logs	\Program Files\HP OpenView\data\wasspi\wbs\log

On newly configured WBS SPI managed nodes in the non-root HTTPS agent environment (UNIX only):

Operating System	File	File Location
HP-UX, Solaris, Linux	Configuration	/var/opt/OV/conf/wbsspi
HP-UX, Solaris, Linux	Error Logs	/var/opt/OV/log/wbsspi
AIX	Configuration	/var/lpp/OV/conf/wbsspi
AIX	Error Logs	/var/lpp/OV/log/wbsspi

B The Configuration

This appendix contains information about the configuration structure, how to use the configuration editor, descriptions of the configuration properties, and samples of the configuration.

Structure

See [Sample Configurations](#) on page 161 for examples of the configuration. The basic structure of the configuration is (lines preceded by # are treated as comments and are ignored):

```
# Global Properties
<property>=<value> ...

# GROUP Block
GROUP <group_name>
{
  <node_name> ...
}

# NODE Block
NODE <node_name | group_name>
{
  <property>=<value> ...
}
```

Global Properties

```
# Global Properties
<property>=<value> ...
```

Properties defined at the global level apply to all nodes. However, these global properties can be overridden by properties set within a GROUP or NODE block or by server-specific properties.

GROUP Block

```
# GROUP Block
GROUP <group_name>
{
  <node_name> ...
}
```

GROUP blocks are used to group nodes together that have common properties.

<group_name> identifies the group of nodes with common properties. If a GROUP block <group_name> is repeated within the configuration, the last definition takes precedence.

<node_name> lists the nodes in the group and is the primary node name configured in OVO.



The node name specified in a GROUP block matches the value returned by the OVO variable \$OPC_NODES, which is the primary node name configured in OVO.

Set the common properties of the group using the NODE block.

Using the configuration editor, view, set, or edit GROUP block properties by selecting the Default Properties item in the <Group_Name> folder.

NODE Block

```
# NODE Block
NODE <node_name | group_name>
{
  <property>=<value> ...
}
```

Properties set in a NODE block apply to nodes belonging to the group defined by <group_name> (to set common properties for a group) or to the specified <node_name> (to set properties for a single node).

For a group, enter the <group_name> defined by the GROUP block and define the group's common properties.

For a single node, enter the <node_name> and define the properties.

If a property definition is repeated within the NODE block, the last definition takes precedence.

Using the configuration editor, view, set, or edit NODE block properties by selecting the Default Properties item in the <Node_Name> folder.

Server-Specific Properties

Each property specified as *SERVER<n>_property* refers to a specific WebSphere server instance. When more than one WebSphere server instance is running on a given managed node, the number <n> differentiates the servers. Numbering begins at “1” and each WebSphere server instance is assigned a unique number.

Property Precedence

The order of precedence (highest to lowest) of properties defined in the configuration are:

- 1 SERVER<n>_property (server-specific)
- 2 NODE <node_name> {<property>} (property defined for a node)
- 3 NODE <group_name> {<property>} (property defined for a group)
- 4 <property> (global property)

The Configuration Editor

Use the configuration editor to view and edit the configuration. You must update the configuration using this editor only.

The main features of the configuration editor are:

- Tree
- Buttons
- Actions

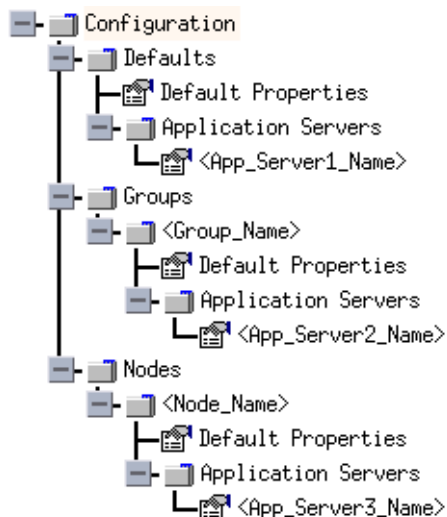
Configure WBSSPI - Tree

The Config WBSSPI tree that appears in the left pane of the Config WBSSPI application's main window shows the WBS SPI configuration in a tree structure.

The following is an example of the tree.



If no application servers or groups are configured, the “Application Servers” and “Groups” folders are not displayed. If you are running Config WBSSPI for the first time and you did not select any nodes before you launched the application, the “Nodes” folder is not displayed.



where the icons are defined as follows:



The configuration properties can be viewed.



The configuration properties can be viewed and set.

The following table lists each item in the tree and a brief description of the item.

Item Name	Description
Application Servers	A folder that contains a list of all the application servers. This folder can appear under Defaults (global properties), Group_Names (GROUP block), or Node_Names (NODE block).
<Application_Server_Name>	The server name as defined in WebSphere.
Configuration	A folder that contains all WBS SPI configuration information for the WebSphere environment.
Default Properties	Lists the configuration properties that have been set. This item appears under Defaults (global properties), Group_Names (GROUP block), or Node_Names (NODE block).
Defaults	A folder that represents the global properties. Default properties set at this level apply to all nodes. However, these properties can be overridden by properties set under the GroupName and Node_Name folders (refer to Property Precedence on page 142 for more information).
Groups	A folder that represents the GROUP block.
<Group_Name>	A folder that identifies the name of a group of nodes with common properties. Default properties set at this level apply to all nodes that belong to the specified group. These properties can be overridden by properties set under the Node_Name folders (refer to Property Precedence on page 142 for more information).
Nodes	A folder that represents the NODE block.
<Node_Name>	A folder that represents a single node whose name matches the value returned by the OVO variable \$OPC_NODES, which is the primary node name configured in OVO. Default properties set at this level apply to the specified node only (refer to Property Precedence on page 142 for more information).









Configure WBSSPI - Buttons

The following buttons are available in Config WBSSPI:

Button	Description
Cancel	Exit Config WBSSPI. If you set configuration properties without saving them, these changes are not saved. If you added or removed an application server, node, or group without saving the change or if you modified a configuration property, a Confirm Cancel window appears. Click Save and Exit to save the changes before exiting, Exit without Save to exit without saving the changes, or Return to Editing to continue editing the configuration (changes are not saved).
Finish	Exit Config WBSSPI. Appears instead of the Next button if you launched Config WBSSPI without selecting any nodes.
Next	Exit Config WBSSPI. Takes you to the “Confirm Operation” window that lists the nodes you selected before you started Config WBSSPI. The selected managed nodes’ configurations are updated with your changes. If you made changes to nodes that were not selected (are not displayed in the “Confirm Operation” window), the changes are saved to the OVO management server’s configuration, but to make the changes to those managed node’s configuration, you must select those managed nodes from the node bank, restart Config WBSSPI, and then exit.
Save	Save changes to the OVO management server’s configuration and continue editing the configuration. You may also select File → Save to save your changes.

Configure WBSSPI - Actions

Actions that you can perform depend upon the item that is selected in the tree and from where you access the action. The following actions can be accessed from the Actions menu, File menu, or by right-clicking on an item in the tree.

Action	Description	Selected Tree Item
Add Application Server	Add an application server. See Add Application Server on page 146 for more information.	 Application Servers  Defaults  <Group_Name>  <Node_Name>
Add Group	Create a group to which you can assign nodes that have common properties. See Add Group on page 148 for more information.	 Any item in the tree  Any item in the tree
Add Node	Add a managed node to the Nodes folder. Add Node on page 149 for more information.	 Any item in the tree  Any item in the tree

Action	Description	Selected Tree Item
Exit	Exit the Config WBSSPI application. This action is available from the File menu. If any changes were made that have not been saved, the Confirm Cancel window appears.	<ul style="list-style-type: none"> Any item in the tree Any item in the tree
Remove Application Server/Remove ALL App Servers	Remove an application server or all listed application servers. See Remove Application Server/Remove ALL App Servers on page 149 for more information.	<ul style="list-style-type: none"> Application Servers <Application_Server_Name>
Remove Group/Remove ALL Groups	Remove a WBS SPI group or all listed WBS SPI groups. See Remove Group/Remove ALL Groups on page 149 for more information.	<ul style="list-style-type: none"> Groups <Group_Name>
Remove Node/Remove ALL Nodes	Remove a managed node or remove all managed nodes. See Remove Node/Remove ALL Nodes on page 150 for more information.	<ul style="list-style-type: none"> Nodes <Node_Name>
Save	Save changes to the configuration. This action is available from the File menu only if changes were made to the configuration.	<ul style="list-style-type: none"> Any item in the tree Any item in the tree
Set Configuration Properties tab	Set WBS SPI configuration properties. See Set Configuration Settings Tab on page 150 for more information.	<ul style="list-style-type: none"> <Application_Server_Name> Default Properties
View Configuration Settings tab	View WBS SPI configuration properties. See View Configuration Settings Tab on page 152 for more information.	<ul style="list-style-type: none"> Any item in the tree Any item in the tree

Add Application Server

Add an application server at the global properties, GROUP, or NODE level in the WBS SPI configuration.

If a node contains duplicate server names (the NAME property is set to the same value), you are prompted to set the ALIAS property (to uniquely identify each server). Refer to [Property Definitions](#) on page 155 for more information about the ALIAS property.

Before adding an application server,

for WebSphere server version 4:	If the WebSphere administrative server port number is the same for all managed nodes, set the PORT property at the global properties level. If the WebSphere administrative server port number is the same for a group, set the PORT property at the GROUP level. If the WebSphere administrative server port number is the same for a node, set the PORT property at the NODE level Setting the PORT property at those levels allows you to use the “Use inherited Server Port” check box. See step 4 for more information about this check box. Set Configuration Settings Tab on page 150 for more information about setting the PORT property. See Configuration Properties on page 153 for more information about the PORT property.
for WebSphere server version 5, 6.0, and 6.1:	Set the PORT property to the application server’s BOOTSTRAP_ADDRESS port number at the application server level of configuration (the BOOTSTRAP_ADDRESS is unique for each server on a managed node). See Set Configuration Settings Tab on page 150 for more information about setting the PORT property. See Configuration Properties on page 153 for more information about the PORT property.

To add an application server, do the following:

- 1 Right-click one of the following items in the tree: Defaults (global properties level), Application Servers (global properties level), *<Group_Name>* (GROUP level), or *<Node_Name>* (NODE level) and select **Add Application Server**.

The Config WBSPI Application: Add App Server window appears.

- 2 Enter the “Application Server Name.” This is the name of the application server as defined in WebSphere and is case-sensitive.
- 3 Enter the “Server Port.”

For WebSphere server version 4, this is the bootstrap port number for the WebSphere administrative server.

For WebSphere server version 5 and above, this is the BOOTSTRAP_ADDRESS port number for the application server.

If the “Use inherited Server Port” check box is selected, you may not enter a port number in the “Server Port” field.

- 4 If available, select the “Use inherited Server Port: *xxx*” check box if you want to use the specified port number (“*xxx*”).

If the PORT property is not set, the check box is not available.

If you do NOT want to use the specified port number, unselect the check box and enter a port number in the “Server Port” field.

If you select the check box, you may not enter a port number in the “Server Port” field.

The specified port number is determined by the value set for the PORT property at the global properties, GROUP, and/or NODE level:

- If the PORT property is set at the global properties level, WBS SPI is configured to use this same port number on all nodes and groups for all WebSphere version 4 administrative servers or for all WebSphere version 5 and above application servers.

For WebSphere version 5 and above, if there is more than one application server per node, only one server can use the inherited server port. The PORT property must be edited for the other application servers.

- If the PORT property is set at the GROUP level, WBS SPI is configured to use this same port number for the group for all WebSphere version 4 administrative servers or for all WebSphere version 5 application servers. For WebSphere version 5, if there is more than one application server per node in the group, only one server can use the inherited server port. The PORT property must be edited for the other application servers.

The port number set at the GROUP level takes precedence over the port number set at the global properties level.

- If the PORT property is set at the NODE level, WBS SPI is configured to use this same port number for that node for all WebSphere version 4 administrative servers or for all WebSphere version 5, 6.0, and 6.1 application servers. For WebSphere version 5, 6.0, and 6.1 if there is more than one application server per node, only one server can use the inherited server port. The PORT property must be edited for the other application servers.

The port number set at the NODE level takes precedence over the port number set at the global properties level.

- 5 Click **OK**.

The NAME and PORT properties are set.

The application server is added and its properties are displayed. You may also set additional configuration properties for this server. [Set Configuration Settings Tab](#) on page 150 for more information.

- 6 Click **Save** to save your changes.

If you do not want to add this application server, right-click the application server name, select **Remove Application Server**, and click **Save**.

Add Group

Assign nodes to a group that have common properties in the WBS SPI configuration.

To add a group, do the following:

- 1 Right-click any item in the tree and select **Add Group**.

The Config WBS SPI Application: Add Group window opens.

- 2 Enter the "Group Name." The group name identifies the group of nodes with common properties and is NOT case-sensitive.

- 3 Click **OK**.

The group is added and the Set Configuration Properties tab for the group is appears.

- 4 Select **Add Node to Group**, select one node from the list to add to the group, and click **OK**. Repeat this step until all nodes are added to the group.

- 5 Set the configuration properties for this group using the **Select a Property to Set** pulldown list. See [Set Configuration Settings Tab](#) on page 150 for more information.

- 6 Click **Save** to save your changes.

If you do not want to add the group, right-click the group name, select **Remove Group**, and click **Save**.

Add Node

Add a managed node to the WBS SPI configuration.

To add a node, do the following:

- 1 Right-click any item in the tree and select **Add Node**.

If no additional managed nodes are available to add to the configuration, the following message appears:

All available managed nodes have been added to the configuration.

Click **OK** to exit this action.

- 2 From the pulldown menu, select a node to add.
- 3 Click **OK**.

The node is added and the Set Configuration Properties tab for the node appears.

- 4 Set the configuration properties for this node using the **Select a Property to Set** pulldown list. See [Set Configuration Settings Tab](#) for more information.
- 5 Click **Save** to save your changes.

If you do not want to add the node, right-click the node name, select **Remove Node**, and click **Save**.

Remove Application Server/Remove ALL App Servers

Remove a WebSphere server or all listed WebSphere servers from the WBS SPI configuration.

To remove an application server, do the following:

- 1 Right-click the application server name and select **Remove Application Server**.

The selected application server name is removed from the list and its configuration properties are removed from the configuration.

- 2 Click **Save** to permanently remove the application server.

Click **Cancel** to cancel the removal of the application server (the application server name appears the next time you run Config WBS SPI). In the “Confirm Cancel” window, click **Exit without Save**.

To remove ALL application servers, do the following:

- 1 Right-click the Application Servers folder and select **Remove ALL App Servers**.

The selected Application Servers folder and all application servers listed in the selected folder are removed (all configuration properties for the listed application servers are removed from the configuration).

- 2 Click **Save** to permanently remove the application servers.

Click **Cancel** to cancel the removal of all application servers (the Application Servers folder and all application server names listed in the folder appear the next time you run Config WBS SPI). In the “Confirm Cancel” window, click **Exit without Save**.

Remove Group/Remove ALL Groups

Remove a WBS SPI group or all listed WBS SPI groups from the WBS SPI configuration.

To remove a group, do the following:

- 1 Right-click the group server name and select **Remove Group**.
The selected group is removed from the list and its configuration properties are removed from the configuration.
- 2 Click **Save** to permanently remove the group.
Click **Cancel** to cancel the removal of the group (the group name appears the next time you run Config WBSSPI). In the “Confirm Cancel” window, click **Exit without Save**.

Remove Node/Remove ALL Nodes

Remove a managed node or all listed managed nodes from the WBS SPI configuration.

To remove a node, do the following:


- 1 Right-click the node name and select **Remove Node**.
The selected node is removed from the list and its configuration properties are removed from the configuration.
- 2 Click **Save** to permanently remove the node.
Click **Cancel** to cancel the removal of the node (the node name appears the next time you run Config WBSSPI). In the “Confirm Cancel” window, click **Exit without Save**.

To remove ALL nodes, do the following:

- 1 Right-click the Nodes folder and select **Remove ALL Nodes**.
The selected Nodes folder and all nodes listed in the selected folder are removed (all configuration properties for the listed nodes are removed from the configuration).
- 2 Click **Save** to permanently remove the nodes.
Click **Cancel** to cancel the removal of all nodes (the Nodes folder and all node names listed in the folder appear the next time you run Config WBSSPI). In the “Confirm Cancel” window, click **Exit without Save**.

Set Configuration Settings Tab

Set WBS SPI configuration properties at the global properties level or for the selected application servers, groups (GROUP level), or nodes (NODE level).

Items with the  icon are the only items for which you can set configuration properties (Default Properties and <Application_Server_Name>).

To set the configuration properties of an item, select the item and click the **Set Configuration Properties** tab in the right pane.

Setting a Property

To set a property in the configuration, do the following:

- 1 Select a property from the “Select a Property to Set” pulldown menu.
- 2 Select **Set Property**. The property and an empty value field appear in the table.
- 3 Click the empty value field and enter a value.
- 4 Repeat steps 1 - 3 for each property to set.

- 5 Click **Save**.



For the LOGIN and PASSWORD properties, when you select **Set Property**, a separate window opens. Enter the login and password values in this window.

See [Configuration Properties](#) on page 153 for more information about individual properties.

Modifying a Property

To modify a property (except LOGIN) in the configuration, do the following:

- 1 Select the property from the table.
- 2 Double-click the value field.
- 3 Edit the value.

If a node contains duplicate server names (the NAME property is set to the same value), you are prompted to set the ALIAS property (to uniquely identify each server). Refer to [Property Definitions](#) on page 155 for more information about the ALIAS property.

- 4 Repeat steps 1 - 3 for each property to modify.
- 5 Click **Save**.

To modify the LOGIN property in the configuration, do the following:

- 1 Select LOGIN/PASSWORD from the Select a Property to add pulldown menu.
- 2 Select Set Property. The Set Access Info for Default Properties window opens.
- 3 Enter the new password and verify password.
- 4 Click **OK**.
- 5 Click **Save**.

See [Configuration Properties](#) on page 153 for more information about individual properties.

Removing a Property

To remove a property from the configuration, do the following:

- 1 Select the property from the table.
- 2 Click **Remove Property**.
- 3 Repeat steps 1 - 2 for each property to remove.
- 4 Click **Save**.

AUTO_DISCOVER

The AUTO_DISCOVER check box that appears near the bottom of the window sets the AUTO_DISCOVER property. You can only set this property by selecting or unselecting the check box.

Selecting the check box (default) causes the discovery templates (if distributed) to automatically update the WBS SPI configuration information in the service map and configuration. If the discovery templates are not distributed, the service map is created but not updated.

View Configuration Settings Tab

View all WBS SPI configuration properties set in the configuration on the OVO management server or the WBS SPI configuration properties for the selected application servers, groups, or nodes.

To view the configuration properties of an item, select the item and click the **View Configuration Settings** tab in the right pane.

The following table describes the view when the specified item is selected.

Item Name	Description of View
Application Servers	View all configuration properties set for all the listed application servers.
<Application_Server_Name>	View all configuration properties set for the application server (these properties can be modified by selecting the Set Configuration Properties tab).
Configurations	View all configuration properties saved in the configuration on the OVO management server.
Default Properties	View all configuration properties that are set (these properties can be modified by selecting the Set Configuration Properties tab).
Defaults	View all configuration properties set at the global properties level.
Groups	View all configuration properties set for all the listed groups.
<Group_Name>	View all configuration properties set for the specific group.
Nodes	View all configuration properties set for the listed nodes.
<Node_Name>	View all configuration properties set for the specific node.

View Inherited Properties

A View Inherited Properties check box appears near the bottom of the window. By selecting this check box, the view of the configuration properties changes to show all inherited properties (those properties defined at a global properties level or GROUP level) that affect the selected item. Inherited properties are denoted by “<*>” appearing after the property.

By unselecting this check box, the view shows only the configuration properties set at that level for the selected item.

Inherited properties can only be modified at the level they are set. If “<*>” appears after the property, the property cannot be modified at that level. For example, if the property HOME is set at the global properties level (under the Defaults folder), it can only be modified in the Default Properties listed under the Defaults folder. Although HOME appears (with “<*>” after it) in a <Group_Name>'s Default Properties view, HOME cannot be modified at this level.

Properties set lower in the tree take precedence over those properties set higher in the tree. For example, if the property HOME is set at the global properties level (under the Defaults folder) and the property HOME is set at the GROUP level, the GROUP level property value takes precedence.

Configuration property precedence is as follows (listed from highest to lowest):

- 1 Server-specific
- 2 NODE level
- 3 GROUP level
- 4 Global properties level

Configuration Properties

[Table 13](#) on page 154 lists all properties by WBS SPI requirements, where:

Property	Name of the property.
Requirements	Lists the property requirements for specific components where: R - Required: the property must be set. C - Conditional: the property may need to be set if certain conditions are met. O - Optional: the property is not required for the component to work. blank - Not Applicable: the property does not affect this component.
WBS SPI	Configuration requirements for the WBS SPI to work.
Discovery Process	Requirements for the discovery process to work.
Auto-Discovered	The property is automatically set by the discovery process.
Level of Configuration	The level at which this property can be set within the configuration structure.
Default Properties	The global, group, or node level within the configuration structure.
Application Server	The server-specific level within the configuration structure.

Refer to [Configuration Properties](#) on page 153 for a description of the property.

Table 13 Properties Listed by WBS SPI Requirements

Property	Requirements		Auto-Discovered	Level of Configuration	
	WBS SPI	Discovery Process		Default Properties	Application Server
HOME	R	C	✓	✓	✓
JAVA_HOME	R		✓	✓	✓
NAME	R		✓		✓
PORT	R	C	✓	✓	✓
ADDRESS	C	O			✓
ALIAS	C				✓
AUTO_DISCOVER	C			✓	✓
COLLECT_METADATA	C	O		✓	✓
GRAPH_URL	C			✓	
HOME_LIST	C			✓	
JMB_JAVA_HOME	C			✓	✓
JMX_CLASSPATH	C			✓	✓
LOGFILE	C				✓
LOGIN	C	C		✓	✓
PASSWORD	C	C		✓	✓
PROFILE_HOME	C		✓	✓	✓
RMID_PORT	C			✓	
RMID_START_TIME	C			✓	
START_CMD	C				✓
STOP_CMD	C				✓
TYPE	C			✓	✓
USER	C			✓	✓
VERSION	C				✓
MAX_ERROR_LOG_SIZE	O			✓	
TIMEOUT	O			✓	✓
UDM_DEFINITIONS_SOURCE	O			✓	✓

Property Definitions

Property	WBS SPI Requirements	Description
ADDRESS	<p>Conditional</p> <p>Required if the server is running on a virtual IP address or is on a remote node</p>	<p>The domain name or IP address where the server is listening. If not specified, the server is listening on the primary IP of the node on which the server is running.</p> <p>Example: SERVER1_ADDRESS = product.hp.com</p>
ALIAS	<p>Conditional</p> <p>Required if more than one application server on a system share the same server name</p>	<p>Unique name on a managed node assigned to an application server if more than one application server on a system share the same server name. The alias, if set, is the name used in messages, reports, and graphs (otherwise, SERVER<n>_NAME is used).</p> <p>If SERVER<n>_ALIAS is modified, the data for the old alias is saved but is not mapped to the new alias.</p> <p>Example:</p> <pre> NODE petstore.hp.com { SERVER1_NAME=dog SERVER1_ALIAS=beagle SERVER2_NAME=dog SERVER2_ALIAS=dachshund } NODE flying_ace.hp.com { SERVER1_NAME=snoopy SERVER1_ALIAS=beagle SERVER2_NAME=snoopy SERVER2_ALIAS=red_baron } </pre>
AUTO_DISCOVER	<p>Conditional</p> <p>Required if you do not want the discovery templates to automatically overwrite the configuration information</p>	<p>Default: AUTO_DISCOVER check box is selected.</p> <p>Select the AUTO_DISCOVER check box to automatically update the WebSphere configuration information in the service map and configuration.</p> <p>Unselect the AUTO_DISCOVER check box if you do not want the discovery templates to automatically overwrite the configuration information.</p>
COLLECT_METADATA	<p>Conditional</p> <p>Required if you want to use the MBean Explorer in the JMX Metric Builder application.</p>	<p>Default: OFF. Enter "ON" to collect metadata (MBean information) displayed by the JMX Metric Builder application. The metadata is used to create UDMs (user defined metrics).</p> <p>Metadata for each MBean server is temporarily saved to the following file: /var/opt/OV/wasspi/wbs/metadata/<managed_node>/<NAME ALIAS>.xml or /var/opt/OV/metadata/wbs/<managed_node>/<NAME/ALIAS>.xml (UNIX) or <%OvAgentDir%>\wasspi\wbs\metadata\<managed_node>\<NAME ALIAS>.xml (Windows) where NAME and ALIAS are the properties set for the managed node and ALIAS is always used if it is set.</p>

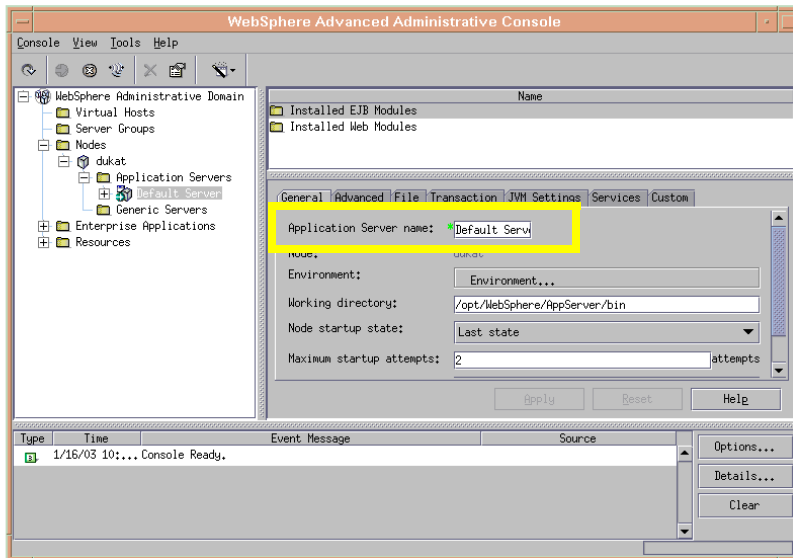
Property	WBS SPI Requirements	Description
GRAPH_URL	Conditional Required if you want to view graphs with OVPM	The fully-qualified URL used to launch OVPM. Set at the global level only. Example: GRAPH_URL=http://system1.hp.com/HPOV_Reports/ovpm.htm (OVPM 4 on Windows) GRAPH_URL=http://system2.hp.com:8080/OVPM/index.html (OVPM 5 on UNIX or Windows)
HOME	Required	The directory where the WebSphere server is installed. Example: HOME = /opt/WebSphere/AppServer or HOME = C:/WebSphere/AppServer
HOME_LIST	Conditional Required if the discovery process does not find multiple server installations on the same node	For Windows managed nodes only. A list of WebSphere server installation directories, each directory separated by a semicolon. Set this property only if there are multiple installations of the WebSphere server on a Windows managed node that the discovery process does not find. After setting this property, run the Discover WebSphere application.
JAVA_HOME	Required Required if using a Java version not supplied with WebSphere	The directory where Java is installed that is used by the collector. The value of JAVA_HOME must include the path to JAVA.EXE (path to the Bin directory of Java) and not the path to the actual JAVA_HOME directory. The java engine is expected to be \$JAVA_HOME/bin/java. Example: \$JAVA_HOME = /opt/WebSphere/AppServer/java/bin
JMB_JAVA_HOME	Conditional Required if you are using the JMX Metric Builder	The directory where Java (JDK 1.4.1 or higher) is installed that is used by the JMX Metric Builder on the OVO management server. The JDK must be version 1.41 or higher.
JMX_CLASSPATH	Conditional Required if you are configuring a JMX collector	The location of the jar files implementing JMX. Example: SERVER1_JMX_CLASSPATH = /JMX/Sun/lib/jmxri.jar
LOGFILE	Conditional Required only if there are WebSphere logfiles to be monitored that are not the default ones	A comma-separated list of fully qualified filenames of WebSphere server logfiles. Example: SERVER1_LOGFILE = /opt/WebSphere/myserver/websphere.log SERVER2_LOGFILE = C:/WebSphere/myserver/websphere.log
LOGIN	Conditional Required if security is enabled on WebSphere	A WebSphere-defined user (not a system user) that is used to monitor a WebSphere server. Example: SERVER1_LOGIN = janedoe

Property	WBS SPI Requirements	Description
MAX_ERROR_LOG_SIZE	Optional Required if you want an error logfile larger than 2MB	Default: 2MB. The maximum number of MB allowed for the error logfile. When the error logfile reaches the maximum limit, it is renamed as a backup file and logging resumes. When a new backup file replaces an old backup file, the old backup is deleted. Example: MAX_ERROR_LOG_SIZE = 20
NAME ^a	Required	The server name as defined in WebSphere. Use the WebSphere administrative console to obtain this information. Example: SERVER1_NAME = exampleServer
NUM_SERVERS	Optional	The number of WebSphere servers on the managed node. Example: NUM_SERVERS = 3
PASSWORD	Conditional Required if security is enabled on WebSphere	The password for the WebSphere-defined user (USER or SERVER<n>_USER). Example: SERVER1_PASSWORD = janedoe123
PORT ^b	Required	For WebSphere server version 4 Default: 900. The bootstrap port number for the WebSphere administrative server. Verify that this is the same as the port number configured in admin.config. Example: SERVER1_PORT = 900 For WebSphere server version 5 and above Default: the bootstrap port number of the application server. The bootstrap port number for the WebSphere application server. Verify that this is the same as the port number listed in the administrative console. Example: SERVER1_PORT = 2809
PROFILE_HOME	Conditional Required for WebSphere server version 6.0 and 6.1	For WebSphere server version 6.0 The directory for the application server profile: <WebSphere_Home>/profiles/default. For WebSphere server version 6.1 The directory for the application server profile: <WebSphere_Home>/profiles/AppSrv01. Examples: PROFILE_HOME = /opt/WebSphere/AppServer/profiles/default PROFILE_HOME = C:/WebSphere/AppServer/profiles/AppSrv01

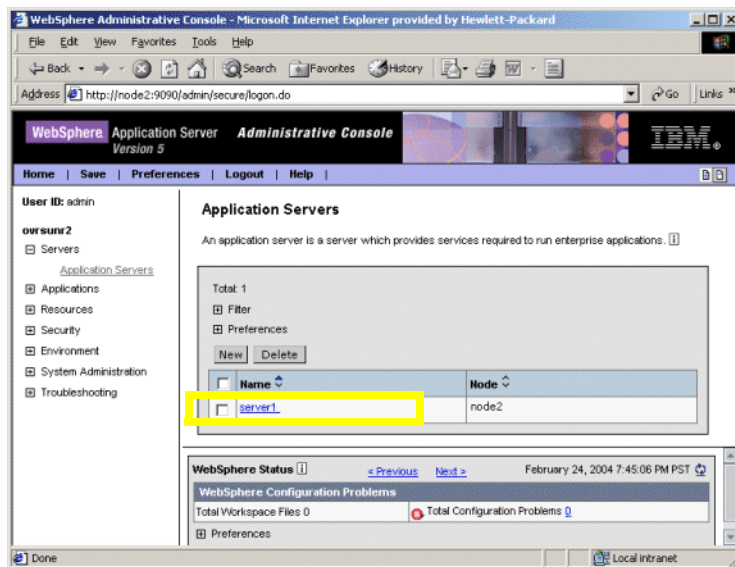
Property	WBS SPI Requirements	Description
RMID_PORT	<p>Conditional Required if the default port on which rmid listens is already in use</p>	<p>Default: WebSphere Application Server 4: 9243; WebSphere Application Server 5: 9242;JMX connector: 9241 The port on which rmid listens. By default, if an OVO managed node is monitoring application servers and MBean servers using the JMX connector, the SPI uses two ports (one for the application servers and one for the MBean servers). For example, if you are monitoring a WebSphere Application Server version 5 and an MBean server, the SPI uses port 9242 and 9241. If RMID_PORT is set, the SPI uses this one port for all servers (this property cannot be set at the application server level). For example, if you are monitoring a WebSphere Application Server and an MBean server and set RMID_PORT to 9250, the SPI uses port 9250 only. Example: RMID_PORT=9250</p>
RMID_START_TIME	<p>Conditional Required if rmid takes longer than 30 seconds to start</p>	<p>Default: 30 (seconds) The amount of time, in seconds, to wait for rmid to start before timing out. Example: RMID_START_TIME=60</p>
START_CMD	<p>Conditional Required if you want to start the WebSphere application server from the OVO console</p>	<p>A system command that is run when the OVO Application Bank Start WebSphere application is used. This command is run by SERVER<n>_USER which must be configured in order for the Start WebSphere application to work. NOTE: This command must exit; that is, the WebSphere process must run in the background or as a service, and it must be protected from its parent process dying. Example: SERVER1_START_CMD = /sbin/init.d/WebSphere start</p>
STOP_CMD	<p>Conditional Required if you want to stop the WebSphere application server from the OVO console</p>	<p>A system command that is run when the OVO Application Bank Stop WebSphere application is used. This command is run by SERVER<n>_USER which must be configured in order for the Stop WebSphere application to work. Example: SERVER1_STOP_CMD = /sbin/init.d/WebSphere stop</p>
TIMEOUT	<p>Optional</p>	<p>Default: 120 (seconds). The maximum amount of time, in seconds, WBS SPI tries to connect to WebSphere. When the specified time is exceeded, WBS SPI sends an alarm to the message browser indicating that WebSphere is unavailable. If metric I002_ServerStatusRep is being collected, the unavailability of the server is logged. If no time limit is desired, set this property to -1. Example: SERVER1_TIMEOUT=30</p>
TYPE	<p>Conditional Required if you are configuring a JMX collector</p>	<p>Default: websphere. The type of JMX connector server. Set to <i>websphere</i> for WebSphere server version 5 and <i>ovrmi</i> for other JMX connector servers. Example: SERVER1_TYPE=ovrmi</p>

Property	WBS SPI Requirements	Description
UDM_DEFINITIONS_SOURCE	Optional	<p>Default: /opt/OV/wasspi/wbs/conf/wasspi_wbs_udmDefinitions.xml. The fully qualified path name to or file name of the metric definitions XML file on the OVO management server. If a path name is set, the wasspi_wbs_udmDefinitions.xml file is the assumed file name of the UDM file.</p> <p>Example: SERVER1_UDM_DEFINITIONS_SOURCE = /opt/OV/wasspi/wbs/conf/udm.xml</p>
USER	<p>Conditional Required if you want to start and/or stop the WebSphere application server from the OVO console</p>	<p>The system username for starting and stopping the WebSphere server from the OVO Application Bank. The default is the username under which the OVO agent runs.</p> <p>Example: SERVER1_USER = websphere</p>
VERSION	<p>Conditional Required if you are configuring remote monitoring</p>	<p>Default: 4.0 0. The version number of the WebSphere server in the format Major# <space> [Minor#] where:</p> <ul style="list-style-type: none"> • Major# - The primary version number (for example, for example, if the version is 4.0.1 the Major# is 4.0) • Minor# - The secondary version number (for example, if the version is 4.0.1 the Minor# is 1). If Minor# is not specified, the default value is 0. <p>Example: SERVER1_VERSION = 4.0 1</p>

- a. For WebSphere server version 4, the WebSphere administrative server displays the server names of all configured application servers in a domain. Use these names when defining NAME.



For WebSphere server version 5 and above, the WebSphere administrative console displays the server names of all configured applications servers. Use these names when defining NAME.



- b. For WebSphere server version 4, the default value configured for PORT is 900. However, if the bootstrap port number is configured in the HOME/bin/admin.config file, use the port number configured in this file. In admin.config, search for com.ibm.ejs.sm.adminServer.bootstrapPort=<nnnnn>

For WebSphere server version 5 and above, the default value configured for PORT is the bootstrap port number for the application server. According to the WebSphere documentation, the port number can be found using the administrative console: Servers → Application Servers → server_name → End Points

Sample Configurations

The sample WBS SPI configurations with entries contained in this section illustrate various features and utilization methods.

Example 1: Single Node/Two Servers

The simple example below is for a single node running two servers: the administration server and one managed server. The properties HOME and JAVA_HOME are global defaults that apply to all servers and nodes. When the file is saved, passwords are encrypted.

```
HOME = /opt/WebSphere/AppServer
JAVA_HOME=/opt/WebSphere/AppServer/java

NODE main.hp.com
{
  SERVER1_NAME= adminserver
  SERVER1_PORT= 900
  SERVER1_LOGIN= system
  SERVER1_PASSWORD = password

  SERVER2_NAME= managedserver
  SERVER2_PORT= 905
  SERVER2_LOGIN= system
  SERVER2_PASSWORD= password
}
```

Example 2: Multiple Nodes/Repeated Properties

The example that follows shows how you can configure a group of related systems that have numerous properties in common. Some nodes, however, may have one or two properties that you need to specify differently. You can address these kinds of situations in two steps:

- 1 Use the Add Group action in the configuration editor to name the group, specify the nodes in it, and set the configuration properties. See [Add Group](#) on page 148 for more information.
- 2 Use the Add Node action in the configuration editor to define individual node properties (either for nodes not in the group or for nodes in the group that have some unique/separate properties). See [Add Node](#) on page 149 for more information.



Properties set for a node take precedence over the same properties set for a group. See [Property Precedence](#) on page 142 for the complete order of property precedence.

In the example, the global default properties HOME and JAVA_HOME are overridden for node europa.hp.com. Since the start commands are set to use the system init command “/sbin/init.d/WebSphere start” which runs at system boot and starts all of the WebSphere servers, we have configured USER to be root.

```
HOME = /opt/WebSphere/AppServer
JAVA_HOME = /opt/WebSphere/AppServer/java
USER = root

GROUP production
{
```

```

mercury.hp.com
venus.hp.com
mars.hp.com
jupiter.hp.com
}

NODE production
{
  SERVER1_NAME= partsserver
  SERVER1_PORT= 900
  SERVER1_LOGIN= system
  SERVER1_PASSWORD= password
  SERVER1_ADMIN_HOST= earth.hp.com
  SERVER1_ADMIN_PORT= 900
  SERVER1_START_CMD= /sbin/init.d/WebSphere start

  SERVER2_NAME= orderserver
  SERVER2_PORT= 910
  SERVER2_LOGIN= system
  SERVER2_PASSWORD= moresecret
  SERVER2_START_CMD= /sbin/init.d/WebSphere start
}

NODE jupiter.hp.com
{
  SERVER1_PASSWORD= different1password
  SERVER2_PASSWORD= different2password
}

NODE europa.hp.com
{
  SERVER1_HOME = /opt/websphere
  SERVER1_JAVA_HOME = /opt/websphere/java
  SERVER1_NAME= testserver
  SERVER1_PORT= 920
  SERVER1_LOGIN= system
  SERVER1_PASSWORD= mypassword
}

```

Example 3: WebSphere Servers with Virtual IP Addresses

This example shows how to configure WebSphere servers that use virtual IP addresses. The property `SERVER<n>_ADDRESS` is set to the name or IP address where the server is listening.

```

NODE saturn.hp.com
{
  SERVER1_HOME = /opt/WebSphere/AppServer
  SERVER1_JAVA_HOME = /opt/WebSphere/AppServer/java
  SERVER1_NAME= partsserver
  SERVER1_PORT= 900
  SERVER1_ADDRESS= juno.hp.com
  SERVER1_LOGIN= system
  SERVER1_PASSWORD= mypassword

  SERVER2_HOME = /opt/WebSphere/AppServer

```

```

SERVER2_JAVA_HOME = /opt/WebSphere/AppServer/java
SERVER2_NAME= orderserver
SERVER2_PORT= 901
SERVER2_ADDRESS= 15.15.1.1
SERVER2_LOGIN= system
SERVER2_PASSWORD= mypassword
}

```

Example 4: Administrative Privileges Using Same Login Information

The example below shows the location of the LOGIN and PASSWORD properties if this information is used for all WebSphere administrative privileges. When the file is saved, the password is encrypted.

```

HOME = /opt/WebSphere/AppServer
JAVA_HOME = /opt/WebSphere/AppServer/java
LOGIN = admin
PASSWORD = password

NODE main.hp.com
{
  SERVER1_NAME = server1
  SERVER1_PORT = 900

  SERVER2_NAME = server2
  SERVER2_PORT = 905
}

NODE europa.hp.com
{
  SERVER1_HOME = /opt/wbs/appserver
  SERVER1_JAVA_HOME = /opt/wbs/appserver/java
  SERVER1_NAME= testserver
  SERVER1_PORT= 915
}

```

Example 5: Administrative Privileges Using Different Login Information

The example below shows the location of the LOGIN and PASSWORD properties if this information is different for administrative privileges. On the main.hp.com node, SERVER1 and SERVER2 have separate administrative privileges. When the file is saved, the passwords are encrypted.

```

HOME = /opt/WebSphere/AppServer
JAVA_HOME = /opt/WebSphere/AppServer/java

NODE main.hp.com
{
  SERVER1_NAME = server1
  SERVER1_PORT = 900
  SERVER1_LOGIN = server1_admin
  SERVER1_PASSWORD = server1_password

  SERVER2_NAME = server2

```

```
SERVER2_PORT = 905
SERVER2_LOGIN = server2_admin
SERVER2_PASSWORD = server2_password
}

NODE europa.hp.com
{
  LOGIN = europa_admin
  PASSWORD = europa_password

  SERVER1_NAME= testserver
  SERVER1_PORT= 915

  SERVER2_NAME= anotherserver
  SERVER2_PORT= 920
}
```

C Applications

The Smart Plug-in for WebSphere Application Server (WBS SPI) applications include configuration and troubleshooting utilities.

WBSSPI Admin applications include:

- [Configure WBSSPI](#)
- [Discover WebSphere](#)
- [Init Non-Root](#)
- [Self-Healing Info](#)
- [Start/Stop Monitoring](#)
- [Start/Stop Tracing](#)
- [Verify](#)
- [View Error File](#)
- [View Graphs](#)

WebSphere applications include:

- [Check WebSphere](#)
- [Start/Stop WebSphere](#)
- [View WebSphere Log](#)

WBSSPI Admin

The following applications are found in the WBSSPI Admin application group. These applications require the “root” user permission, therefore it is recommended that this group be assigned to the OVO administrator.

Additional WBSSPI Admin applications for user defined metrics (UDMs) are available with the WASSPI-UDM-BLDR software bundle. Refer to the *HP OpenView Smart Plug-in User Defined Metrics User Guide* for more information about how to install the software bundle and the additional applications.

Configure WBSSPI

Launches the configuration editor and maintains the WBS SPI configuration.

If you are configuring WBS SPI for the first time, use the WBSSPI Discover WebSphere application to automatically set basic configuration properties. Refer to [Chapter 3, Configuring the WBS SPI](#) for more information.

Purpose

Launches the configuration editor allowing the OVO administrator to maintain the WBS SPI configuration by viewing, editing, or setting configuration properties.

Function

Configure WBSSPI does the following:

- Updates the configuration on the OVO management server and selected managed nodes.
- Creates the directories and files required by WBS SPI on the selected managed nodes.
- Sets up data sources for reporting and graphing.
- Sets up the WebSphere server log files and WBS SPI error log file for monitoring.

Configuration information for all WebSphere instances on all OVO managed nodes is maintained on the OVO management server. Configuration information for a specific WebSphere instance on an OVO managed node is maintained on that managed node (each managed node maintains a subset of the configuration information maintained on the OVO management server).

When saved, changes made with the configuration editor are always saved on the OVO management server.

If a specific OVO managed node is selected when this application is launched, changes to the configuration affecting any WebSphere servers on that managed node are automatically saved on that managed node.

If no managed nodes are selected when this application is launched, changes to the configuration are *not* saved on any managed nodes.

If a specific OVO managed node is selected when this application is launched and changes are made that affect a WebSphere server on a non-selected managed node, the changes are saved to the configuration on the OVO management server, but are *not* saved to the non-selected managed node. You must select the affected managed node, re-run this application, and, upon exiting the application, the changes are saved to the managed node.

To Launch Configure WBSSPI

- 1 At the OVO console, select the nodes in the Node Bank window.
- 2 Select **Application Bank**.
- 3 In the Application Bank window select **WBSSPI** → **WBSSPI Admin** → **Config WBSSPI**. (If the items do not appear, select **Map** → **Reload**.)
The Introduction window opens.
- 4 Select **Next**.
- 5 The configuration editor opens. Refer to [The Configuration Editor](#) on page 143 for more information about using the configuration editor.
- 6 Optionally, select **Save** to save any changes made to the configuration. Once you save your changes, you cannot automatically undo them.
- 7 Select **Finish** or **Next** to save any changes and exit the editor.
If you selected **Next**, the Confirm Operation window opens. Select **OK**.
 - ▶ If you select **Cancel** and made changes to the configuration, those changes remain in the configuration on the management server. To make the changes to the selected managed nodes' configuration, you must select those nodes in the Node Bank window, start the Config WBSSPI application, select **Next** from the configuration editor, and then select **OK**.
- 8 If you have added an application server or added/edited the HOME and/or PORT properties, run the Discover WebSphere application on the managed nodes on which the application server/properties were added or edited. Running the Discover WebSphere application updates the service map.

Discover WebSphere

Sets basic configuration properties needed for discovery.

Purpose

Launches the configuration editor allowing the OVO administrator to configure WBS SPI by setting initial configuration properties.

Function

Discover WebSphere does the following:

- Updates the configuration on the OVO management server and selected managed nodes.

Configuration information for all WebSphere instances on all OVO managed nodes is maintained on the OVO management server. Configuration information for a specific WebSphere instance on an OVO managed node is maintained on that managed node (each managed node maintains a subset of the configuration information maintained on the OVO management server).

When saved, changes made with the configuration editor are always saved on the OVO management server.

An OVO managed node must be selected when this application is launched, and changes to the configuration affecting any WebSphere servers on that managed node are automatically saved on that managed node.

If a specific OVO managed node is selected when this application is launched and changes are made that affect a WebSphere server on a non-selected managed node, the changes are saved to the configuration on the OVO management server, but are *not* saved to the non-selected managed node. You must select the affected managed node, re-run this application, and, upon exiting the application, the changes are saved to the managed node.

To Launch Discover WebSphere

- 1 At the OVO console, select the nodes in the Node Bank window.
- 2 From the Window menu, select **Application Bank**.
- 3 In the Application Bank window select **WBSSPI** → **WBSSPI Admin** and double-click **Discovery**.
(If the above does not appear as described, select **Map** → **Reload**.)
- 4 The Introduction window opens. This window contains brief information about the Discovery application.
Select **Next**.
- 5 A second Introduction window opens. This window displays information about which properties may be required in order for the discovery process to work.
Read this information and select **Next**.
- 6 If you have not set the WBS SPI LOGIN and PASSWORD properties, the Configure Access Info for Default Properties window opens.

If you have already set the LOGIN and PASSWORD properties, the configuration editor opens. Go to the next step.

Set the LOGIN and PASSWORD properties to the WebSphere login and password configured in [Task 2: Collect WebSphere Login Information](#) on page 41. The WebSphere administrative login information is required when security is enabled. If security is not enabled, leave these fields blank, select **Next**, and go to step 9.

The LOGIN and PASSWORD properties set in this window are used as the default WebSphere administrative login and password (they are set at the global properties level). That is, if no NODE level or server-specific LOGIN and PASSWORD properties are set, this WebSphere login and password are used by WBS SPI for all administrative privileges. For more information about the configuration structure, refer to [Structure](#) on page 141.

If the WebSphere administrative login and password are the same for all WebSphere application servers on all OVO managed nodes, do the following:

- a Set the LOGIN and PASSWORD properties in the “Set Access Info for Default Properties” window.
- b Select **Next**.
- c Go to step 9.

If the WebSphere administrative login and password are different for different instances of WebSphere, you must customize the WBS SPI configuration by setting the LOGIN and PASSWORD properties at the NODE or server-specific level (for more information about the configuration structure, refer to [Structure](#) on page 141).

- a Set the LOGIN and PASSWORD properties to the most commonly used WebSphere login and password in the Set Access Info for Default Properties window.
 - b Select **Customize** to open the configuration editor.
- 7 From the configuration editor, set the configuration properties. Refer to [The Configuration Editor](#) on page 143 for more information about using the configuration editor.
 - 8 Select **Next** to save any changes and exit the editor.
 - 9 The Confirm Operation window opens. Select **OK**.



If you select **Cancel** and made changes to the configuration, those changes remain in the configuration on the management server. To make the changes to the selected managed nodes' configuration, you must select those nodes in the Node Bank window, start the Discovery application, select **Next** from the configuration editor, and then select **OK**.

Init Non-Root

Updates the `/var/opt/OV/bin/instrumentation/wasspi_wbs_platdef.pm` file and generates the `wasspi_wbs_sudoers` configuration file on the selected managed nodes.

Purpose

Simplifies the configuration of a non-root HTTPS agent on a UNIX managed node (OVO 8.x only). Refer to [Configuring a Non-Root HTTPS Agent on a UNIX Managed Node \(OVO 8.x Only\)](#) on page 50 for all the steps necessary to configure a non-root HTTPS agent on a UNIX managed node.

Function

Init Non-Root does the following for the selected managed nodes:

- 1 Runs the `wasspi_wbs_perl -S wasspi_wbs_makePlatdef -force` command to set the proper SPI path configuration and updates the `/var/opt/OV/bin/instrumentation/wasspi_wbs_platdef.pm` and `wasspi_wbs_platdef.prop` files.
- 2 Generates the `wasspi_wbs_sudoers` configuration file.

To Launch Init Non-Root

- 1 At the OVO console, select a node in the Node Bank window.
- 2 From the Window menu, select **Application Bank**.
- 3 In the Application Bank window select **WBSSPI** → **WBSSPI Admin** → **Init Non-Root**.

Self-Healing Info

Collects data to be sent to your HP support representative.

- ▶ Your HP support contract entitles you to access cross-referenced information through the HP OpenView self-healing services web site (http://support.openview.hp.com/self_healing.jsp), linking you to a database where similar information and subsequent problem solutions increase troubleshooting effectiveness. Refer to the *HP OpenView Smart Plug-ins DVD Installation Guide for UNIX* and the section covering Self-Healing Services for more details.

Required Setup

If you are collecting data for a reproducible problem, do the following before running the Self-Healing Info application:

- 1 Run the Start Tracing application. Refer to [Start/Stop Tracing](#) on page 173 for more information.
- 2 Reproduce the problem.

Purpose

Allows the OVO administrator to collect data to be used by your HP support representative.

Function

Self-Healing Info does the following for all managed nodes:

- Runs and saves data using the Verify application (see [Verify](#) on page 174 for more information).
- Recursively lists all files in the following directories:
 - `<OV_AGT_DIR>/bin/OpC/actions/`
 - `<OV_AGT_DIR>/bin/OpC/cmds/`
 - `<OV_AGT_DIR>/bin/OpC/monitor/`
 - `<OV_AGT_DIR>/wasspi/wbs/`
- Displays the contents of the following files:
 - `<OV_AGT_DIR>/conf/OpC/nodeinfo`
 - `<OV_AGT_DIR>/wasspi/wbs/conf/SiteConfig`
 - `<OV_AGT_DIR>/wasspi/wbs/conf/SPIConfigCfgFiles`
 - `<OV_AGT_DIR>/wasspi/wbs/conf/SPIConfigLogFiles`
 - `<OV_AGT_DIR>/wasspi/wbs/conf/version`
- Runs the following commands:
 - `opcagt -status`
 - `codautl -obj`
 - `<OV_AGT_DIR>/bin/OpC/monitor/wasspi_wbs_ca -m 5 -x print=on`
 - `<OV_AGT_DIR>/bin/OpC/monitor/wasspi_wbs_ca -m 5 -x print=on -debug`

- Copies all files in the following directories:
 - <OV_AGT_DIR>/wasspi/wbs/log/
 - <OV_AGT_DIR>/wasspi/wbs/tmp/
- Copies the following files:
 - <OV_AGT_DIR>/conf/OpC/le
 - <OV_AGT_DIR>/conf/OpC/msgi
 - <OV_AGT_DIR>/conf/OpC/monitor
 - <OV_AGT_DIR>/wasspi/wbs/conf/version
- On the management server, verifies the following directories exist:
 - /opt/OV/wasspi/wbs/bin/
 - /opt/OV/wasspi/wbs/conf/
- On the management server, verifies the following files exist:
 - /opt/OV/wasspi/wbs/bin/parseDefs.pl
 - /opt/OV/wasspi/wbs/bin/wasspi_wbs_app_graphs
 - /opt/OV/wasspi/wbs/bin/wasspi_wbs_editcfg
 - /opt/OV/wasspi/wbs/bin/wasspi_wbs_lib.pl
 - /opt/OV/wasspi/wbs/bin/wasspi_wbs_optaction_graphs
 - /opt/OV/wasspi/wbs/bin/wasspi_xterm
 - /opt/OV/wasspi/wbs/conf/SiteConfig
- On the management server, copies the following file
 - /opt/ov/wasspi/wbs/conf/SiteConfig

Self-Healing Info does the following for Windows managed nodes:

- Displays the contents of the following files:
 - <OV_AGT_DIR>/bin/OpC/install/opcinfo
 - <OV_AGT_DIR>/conf/dsi2ddf/ddflbd.mwc

Self-Healing Info does the following for UNIX managed nodes:

- Collects the following information:
 - Up time
 - Detailed OS version
 - ulimit values
- Displays the contents of the following files:
 - /opt/OV/bin/OpC/install/opcinfo
 - <OV_AGT_DIR>/conf/dsi2ddf/ddflbd.rc

- Runs the following commands:
 - ps -ef
 - <OV_AGT_DIR>/bin/OpC/cmds/wasspi_wbs_osinfo
 - df -k
 - uname -a
 - hostname


where <OV_AGT_DIR> is:

- on a UNIX managed node: /var/opt/OV
- on a Windows managed node: depends on the installation of the product

The data is saved in the following file:

- on a UNIX managed node: /tmp/wasspi_wbs_support.tar
- on a Windows managed node: wasspi_wbs_support.zip in one of the following directories (the exact location is displayed):

- %TEMP%
- %TMP%
- %SystemDrive%\temp\
- C:\temp\
- %temp% if JAVA_HOME or SERVER<n>_JAVA_HOME is defined
- %temp%\wasspi_wbs_support\

 This file may be hidden on some Windows managed nodes. If you do not see the file, open Windows Explorer and, from the Tools menu, select **Folder Options**. Click the **View** tab. Under Hidden files and folders, select **Show hidden files and folders**.

To Launch Self-Healing Info

- 1 At the OVO console, select a node in the Node Bank window.
- 2 From the Window menu, select **Application Bank**.
- 3 In the Application Bank window select **WBSSPI** → **WBSSPI Admin** and double-click **Self-Healing Info**.

Start/Stop Monitoring

Starts/stops the collection of metrics for one application server or all application servers on a managed node.

Purpose

Allows the OVO administrator to start or stop the WBS SPI from collecting metrics from an application server.

These metrics generate alarms (when thresholds are exceeded) and are used to create reports (automatically or manually generated) and graphs. The reports and graphs are used to analyze trends in server usage, availability, and performance.

Typically, the OVO administrator would stop monitoring on a managed node if the node is not running for a known reason (for example, the node is down for maintenance). Stopping the monitoring prevents unnecessary alarms from being generated.

Run the Verify application to determine if monitoring is started or stopped. By default, monitoring is on.

Function

Start Monitoring starts the collection of metrics for one or all application servers on a managed node.

Stop Monitoring stops the collection of metrics for one or all application servers on a managed node.

To Launch Start/Stop Monitoring

- 1 At the OVO console, select a node in the Node Bank window.
- 2 From the Window menu, select **Application Bank**.
- 3 In the Application Bank window select **WBSSPI** → **WBSSPI Admin** and double-click **Start Monitoring** or **Stop Monitoring**.

Start/Stop Tracing

Starts/stops the tracing of the collection of metrics.

Purpose

Starts/stops the tracing of the collection of metrics into a file. Run this application only when instructed by your HP support representative.

Run the Self-Healing Info application to collect the files created by this application as part of the data to be used by your HP support representative.

Function

Start Tracing saves information about the collection of metrics into a file.

Stop Tracing stops saving information about the collection of metrics.

To Launch Start/Stop Tracing

- 1 At the OVO console, select a node in the Node Bank window.
- 2 From the Window menu, select **Application Bank**.
- 3 In the Application Bank window select **WBSSPI** → **WBSSPI Admin** and double-click **Start Tracing** or **Stop Tracing**.

Verify

Verify that WBS SPI is properly installed on the server or managed node.

Purpose

Allows the OVO administrator to verify that the WBS SPI is properly installed on the server or managed node.

Function

Verify does the following for all managed nodes:

- Checks that the following directories exist:
 - `<OV_AGT_DIR>/wasspi/wbs/conf/`
 - `<OV_AGT_DIR>/wasspi/wbs/datalog/`
 - `<OV_AGT_DIR>/wasspi/wbs/history/`
 - `<OV_AGT_DIR>/wasspi/wbs/lib/`
 - `<OV_AGT_DIR>/wasspi/wbs/log/`
 - `<OV_AGT_DIR>/wasspi/wbs/tmp/`
- Checks that the following files exist:
 - `<OV_AGT_DIR>/wasspi/wbs/conf/MBeanReports.dtd`
 - `<OV_AGT_DIR>/wasspi/wbs/conf/MBeanReports.xml`
 - `<OV_AGT_DIR>/wasspi/wbs/conf/MetricDefinitions.dtd`
 - `<OV_AGT_DIR>/wasspi/wbs/conf/MetricDefinitions.ser`
 - `<OV_AGT_DIR>/wasspi/wbs/conf/MetricMap`
 - `<OV_AGT_DIR>/wasspi/wbs/conf/OVTrace.sample`
 - `<OV_AGT_DIR>/wasspi/wbs/conf/ReportsHeader.xml`
 - `<OV_AGT_DIR>/wasspi/wbs/conf/ReportsUtil.xml`
 - `<OV_AGT_DIR>/wasspi/wbs/conf/SiteConfig`
 - `<OV_AGT_DIR>/wasspi/wbs/conf/SPIConfig`
 - `<OV_AGT_DIR>/wasspi/wbs/conf/SPIConfigCfgFiles`
 - `<OV_AGT_DIR>/wasspi/wbs/conf/SPIConfigLogFiles`
 - `<OV_AGT_DIR>/wasspi/wbs/conf/trigger`
 - `<OV_AGT_DIR>/wasspi/wbs/lib/GraphSP.xml`

- <OV_AGT_DIR>/wasspi/wbs/lib/JspiCola.jar
- <OV_AGT_DIR>/wasspi/wbs/lib/MetricMap.xsl
- <OV_AGT_DIR>/wasspi/wbs/lib/xalan.jar
- <OV_AGT_DIR>/wasspi/wbs/lib/xerces.jar

Verify does the following for Windows managed nodes:

- Checks that the following files exist:
 - <OV_AGT_DIR>/bin/OpC/cmds/wasspi_wbs_admin.exe
 - <OV_AGT_DIR>/bin/OpC/cmds/wasspi_wbs_debug.exe
 - <OV_AGT_DIR>/bin/OpC/cmds/wasspi_wbs_spiapps.exe
 - <OV_AGT_DIR>/bin/OpC/cmds/wasspi_wbs_udmgraphs.exe
 - <OV_AGT_DIR>/bin/OpC/cmds/wasspi_wbs_verify.exe
 - <OV_AGT_DIR>/bin/OpC/monitor/wasspi_wbs_ca.exe
 - <OV_AGT_DIR>/bin/OpC/monitor/wasspi_wbs_config.exe
 - <OV_AGT_DIR>/bin/OpC/monitor/wasspi_wbs_files.exe
 - <OV_AGT_DIR>/bin/OpC/monitor/wasspi_wbs_le.exe
 - <OV_AGT_DIR>/bin/OpC/monitor/wasspi_wbs_logdata.exe
 - <OV_AGT_DIR>/bin/OpC/monitor/wasspi_wbs_setpath.exe
- Checks that the following files exist and the version is higher than A.01:
 - <OV_AGT_DIR>/bin/OpC/monitor/ddfcomp.exe
 - <OV_AGT_DIR>/bin/OpC/monitor/ddfcomp_coda.exe
 - <OV_AGT_DIR>/bin/OpC/monitor/ddflog.exe
 - <OV_AGT_DIR>/bin/OpC/monitor/ddflog_coda.exe
 - <OV_AGT_DIR>/bin/OpC/monitor/ddfutil.exe
 - <OV_AGT_DIR>/bin/OpC/monitor/ddfutil_coda.exe

Verify does the following for UNIX managed nodes:

- Checks that the following files exist:
 - <OV_AGT_DIR>/bin/OpC/cmds/wasspi_wbs_admin
 - <OV_AGT_DIR>/bin/OpC/cmds/wasspi_wbs_debug
 - <OV_AGT_DIR>/bin/OpC/cmds/wasspi_wbs_spiapps
 - <OV_AGT_DIR>/bin/OpC/cmds/wasspi_wbs_udmgraphs
 - <OV_AGT_DIR>/bin/OpC/cmds/wasspi_wbs_verify
 - <OV_AGT_DIR>/bin/OpC/monitor/wasspi_setpath
 - <OV_AGT_DIR>/bin/OpC/monitor/wasspi_wbs_ca
 - <OV_AGT_DIR>/bin/OpC/monitor/wasspi_wbs_config
 - <OV_AGT_DIR>/bin/OpC/monitor/wasspi_wbs_config.pl
 - <OV_AGT_DIR>/bin/OpC/monitor/wasspi_wbs_files
 - <OV_AGT_DIR>/bin/OpC/monitor/wasspi_wbs_le

- `<OV_AGT_DIR>/bin/OpC/monitor/wasspi_wbs_lib.pl`
- `<OV_AGT_DIR>/bin/OpC/monitor/wasspi_wbs_logdata`
- `<OV_AGT_DIR>/bin/OpC/monitor/wasspi_xterm`
- Checks that the following files exist and the version is higher than A.01:
 - `<OV_AGT_DIR>/bin/OpC/monitor/ddfcomp`
 - `<OV_AGT_DIR>/bin/OpC/monitor/ddfcomp_coda`
 - `<OV_AGT_DIR>/bin/OpC/monitor/ddflog`
 - `<OV_AGT_DIR>/bin/OpC/monitor/ddflog_coda`
 - `<OV_AGT_DIR>/bin/OpC/monitor/ddfutil`
 - `<OV_AGT_DIR>/bin/OpC/monitor/ddfutil_coda`

where `<OV_AGT_DIR>` is:

- on a UNIX managed node: `/var/opt/OV`
- on a Windows managed node: depends on the installation of the product

To Launch Verify

- 1 At the OVO console, select a node in the Node Bank window.
- 2 From the Window menu, select **Application Bank**.
- 3 In the Application Bank window select **WBSSPI** → **WBSSPI Admin** and double-click **Verify**.

If the Verify application is successful, the following message appears:

```
Installation is clean
```

View Error File

View the WBS SPI error log file.

Purpose

Allows the OVO administrator to view the contents of the error log file.

Function

View the contents of the WBS SPI error log file `<OV_AGT_DIR>/wasspi/wbs/log/errorlog` where `<OV_AGT_DIR>` typically is:

- `/var/opt/OV` on UNIX managed nodes
- `/Program Files/HP OpenView/Installed Packages/{790 ...}` on Windows managed nodes

To Run View Error File

- 1 At the OVO console, select a node in the Node Bank window.
- 2 From the Window menu, select **Application Bank**.
- 3 In the Application Bank window select **WBSSPI** → **WBSSPI Admin** and double-click **View Error File**.

View Graphs

View OpenView Performance Manager (OVPM) graphs in a web browser.

Required Setup

OVPM must be installed and you must edit the `ovweb.conf` file (see [Task 1: Configure the Management Server to Launch your Web Browser](#) on page 35 for more information) before this application can run successfully.

If you are using Netscape Navigator, use version 6.0 or higher. Do not use Netscape Navigator 4.79 with this application.

Purpose

Allows the OVO administrator to view WBS SPI graphs in OVPM from the OVO console.

Function

Launches a web browser to display WBS SPI metric data in OVPM graphs.

To Launch View Graphs

- 1 At the OVO console, select a node in the Node Bank window.
- 2 From the Window menu, select **Application Bank**.
- 3 In the Application Bank window select **WBSSPI** → **WBSSPI Admin** → **View Graphs**.

WebSphere

The following applications are found in the WBSSPI WebSphere application group.

Check WebSphere

Displays a status report for the WebSphere instances on the selected managed nodes.

Purpose

Allows the OVO administrator to quickly check the status of each application server running on a managed node.

Function

Check WebSphere displays the following information for each application server on the selected nodes:

Information	Description
Server Name	The server name as defined in WebSphere.
Server State	The status of the WebSphere server.
Start Date	The date when the WebSphere server was started.
Port	The port on which the WebSphere server listens.
Admin Server Host	The location of the WebSphere administration server for this WebSphere instance.
Admin Server Port	The port of the WebSphere administration server for this WebSphere instance.
Current Open Socket Count	The number of open sockets for the WebSphere server.
WebSphere Version	The version number of the WebSphere server.

If the WBS SPI has been configured to not collect metrics for a WebSphere server, the message `Collection is temporarily OFF for <server_name>` is displayed.

To Launch Check WebSphere

- 1 At the OVO console, select a node in the Node Bank window.
- 2 From the Window menu, select **Application Bank**.
- 3 In the Application Bank window select **WBSSPI** → **WebSphere** and double-click **Check WebSphere**.

Start/Stop WebSphere

Starts/Stops a WebSphere application server from the OVO console.

Required Setup

The `START_CMD`, `STOP_CMD`, and `USER` configuration properties *must* be set before these applications can run successfully.

Purpose

Allows the OVO administrator to start/stop a WebSphere application server from the OVO console. The OVO administrator can start/stop an application server or all application servers on the selected managed nodes and does not have to log in to each WebSphere Administration Server to perform these functions.

Function

Start/Stop WebSphere starts/stops an application server or all application servers on the selected managed nodes.

To Launch Start/Stop WebSphere

- 1 At the OVO console, select a node in the Node Bank window.
- 2 From the Window menu, select **Application Bank**.
- 3 In the Application Bank window select **WBSSPI** → **WebSphere** and double-click **Start WebSphere** or **Stop WebSphere**. The START WBS or STOP WBS window opens.
- 4 Select the server you want to start/stop from the options given.

View WebSphere Log

View the WebSphere server log files.

Purpose

Allows the OVO administrator to select a WebSphere server log file to view without having to log in to the system on which a WebSphere server is running.

Function

View WebSphere Log does the following:

- When View WebSphere Log is run without entering a parameter, a numbered list of available log files for a managed node is presented.
- When **View WebSphere Log** is run with a parameter entered, if the parameter is not valid (a non-numeric value is entered or the number entered does not correspond to the list of available log files), a numbered list of available log files for the managed node is presented.
- When **View WebSphere Log** is run with a valid parameter, the contents of the corresponding log file for the managed node is presented.

You may only enter one numeric value in the parameter field. This is the number used to designate the log file to view for all managed nodes selected. Select one log file per managed node to view each time you launch the application.

If you keep the Application Status window open and re-launch the application, the output in the Application Status window accumulates.

To Launch View WebSphere Log

- 1 At the OVO console, select a node in the Node Bank window.
- 2 From the Window menu, select **Application Bank**.
- 3 In the Application Bank window select **WBSSPI** → **WebSphere** and double-click **View WebSphere Log**.
- 4 Select the managed nodes on which you want to view the WebSphere server log file.
- 5 Select **Launch**. The Edit Parameters window appears. If you know the number of the log file you want to view, enter it into the Parameters field. Otherwise, leave this field blank to list available log files to view.
- 6 Select **Launch**. The Application Status window opens.
- 7 In the Launched Applications field, check the Status of the application for each node:
 - Started/Starting - The application is running.
 - Succeeded - A list of available log files to view appears. Highlight the node in the Launched Applications field and scroll through the Application Output field to view the list of available log files.
 - Failed - The application did not succeed. Highlight the node in the Launched Applications field and scroll through the Application Output field for more information about the problem.
- 8 Double-click **View WebSphere Log**.
- 9 Select the managed nodes on which you want to view the WebSphere server log file.
- 10 Select **Launch**. The Edit Parameters window appears.
- 11 In the Parameters text box, enter the number of the log file you want to view. Only one log file can be selected.

If you do not remember the number of the log file, go to the Application Status window, highlight the node in the Launched Applications field, scroll through the Application Output field to view the list of available log files, and enter the number of the log file you want to view in the Edit Parameters window.
- 12 Select **Launch**.
- 13 In the Application Status window, highlight the node on which to view the selected log file and scroll through the Application Output field to view the log file.
- 14 Repeat steps 8-11 for each log file you want to view.
- 15 Select **Close** to close the Application Status window.

Glossary

agent

A program or process running on a remote device or computer system that responds to management requests, performs management operations, or sends performance and event notification. An agent can provide access to managed objects and MIB variables, interpret policy for resources and do configuration of resources.

application

Packaged software that provides functionality that is designed to accomplish a set of related tasks. An application is generally more complex than a tool.

ASCII

American Standard Code for Information Interchange.

assigned policy

A policy that has been assigned to one or more resources in the computing environment but which has not yet been deployed or installed on those resources.

automatic action

A pre-configured program or script that is executed in response to an event, message, or a change in information in the management database. without operator intervention.

client

When the context is network systems, a computer system on a network that accesses a service from another computer (server). When the context is software, a program or executable process that requests a service from a server.

client console

An instance of the user interface that appears on the client system while the application runs on a server.

command

An instruction to a computer program that causes a specified operation to be carried out. Commands are typically typed by users on a command line.

configuration

In a network context, the complete set of inter-related systems, devices and programs that make up the network. For example the components of a network may include computer systems, routers, switches, hubs, operating systems and network software. The configuration of the network determines the way that it works and the way that it is used. In a software context, the combination of settings of software parameters and attributes that determine the way the software works, the way it is used, and how it appears.

configuration file

A file that contains specifications or information that can be used for determining how a software program should look and operate.

configure

To define and modify specified software settings to fulfill the requirements of a specified environment, application or usage.

connection

A representation of a logical or physical relationship between objects.

console

An instance of the user interface from which the user can control an application or set of applications.

customization

The process of designing, constructing or modifying software to meet the needs and preferences of a particular customer or user.

customize

To design, construct or modify software to meet the needs and preferences of a particular customer or user.

data type

A particular kind of data; for example database A repository of data that is electronically stored. Typically databases are organized so that data can be retrieved and updated.

deploy

To install and start software, hardware, capabilities, or services so that they work in the business environment.

Deployed application

An application and its components that have been installed and started to work in the business environment.

deployed policy

A policy that is deployed on one or more resources in the computing environment.

deployment

The process of installing and activating software, hardware, capabilities or services so that they work in the business environment.

Deployment package

A software package that can be deployed automatically and installed on a managed node.

error log

An output file containing error messages.

event

An event is an unsolicited notification such as an SNMP trap or WMI notification generated by an agent or process in a managed object or by a user action. Events usually indicate a change in the state of a managed object or cause an action to occur.

HP OpenView

A family of network and system management products, and an architecture for those products. HP OpenView includes development environments and a wide variety of management applications.

Hypertext Transfer Protocol (HTTP).

The protocol that World Wide Web clients and servers use to communicate.

HTTPS

Hypertext Transfer Protocol Secure.

icon

An on-screen image that represents objects that can be monitored or manipulated by the user or actions that can be executed by the user.

managed object

A network, system, software or service object that is both monitored for performance, status and messages and is manipulated by means of actions in the management software.

management console

An instance of the user interface from which the user can control the management application or set of management applications. The console may be on the system that contains the management software or it may be on another system in the management domain.

management server

A server that provides management services, processes, or a management user interface to clients. A management server is a type of management station.

message

A structured, readable notification that is generated as a result of an event, the evaluation of one or more events relative to specified conditions, or a change in application, system, network, or service status.

message browser

A graphical user interface that presents notifications that are generated as a result of an event, the evaluation of one or more events relative to specified conditions or a change in application, system, network, or service status.

message description

Detailed information about an event or message.

message key

A message attribute that is a string used to identify messages that were triggered from particular events. The string summarizes the important characteristics of the event. Message keys can be used to allow messages to acknowledge other messages, and allows for the identification of duplicate messages.

message severity level

A property of a message indicating the level of impact of the event or notification that initiated the message. See also severity level.

metadata

Data that defines data.

metric

A measurement that defines a specific operational or performance characteristic.

Microsoft Management Console (MMC)

A Microsoft product that provides a software framework for the management of IT environments. Management products are added or "snapped into" the management console and thus extend the management capability of the Microsoft Management Console.

module

A self-contained software component that performs a specific type of task or provides for the presentation of a specific type of data. Modules can interact with one another and with other software.

node

When the context is network, a computer system or device (for example, printer, router, bridge) in a network. When the context is a graphical point to point layout, a graphical element in a drawing that acts as a junction or connection point for other graphical elements.

OVO

HP OpenView Operations

OVPA

HP OpenView Performance Agent

OVPM

HP OpenView Performance Manager

parameter

A variable or attribute that may be given an arbitrary value for use during an execution of either a computer program or a procedure within a program.

parameter type

An abstraction or categorization of a parameter that determines the particular kind of data that is valid for the parameter. For example a parameter type could be IP Address which

indicates that parameter values must have 4 numbers separated by decimals with the value for each number being in the range of 0 to 255.

parameter value

A value that is given to a variable.

policy

A set of one or more specifications rules and other information that help automate network, system, service, and process management. Policies can be deployed to various targets (for example, managed systems, devices, network interfaces) providing consistent, automated administration across the network.

Policy management

The process of controlling policies (for example, creating, editing, tracking, deploying, deleting) for the purposes of network, system or service management.

policy type

An abstraction or categorization of policies based on the function of the policy or the services that the policy supports.

port

If the context is hardware, a location for passing information into and out of a network device. If the context is ECS, a location for passing information into and out of a correlation node.

server

If the context is hardware plus software, a computer system that provides a service (for example, management capabilities, file storage capabilities) to other computer systems (clients) on the network. If the context is a software component, a program or executable process that responds to and services requests issued by clients.

severity level

A property of an object indicating the status of the object. Severity level is based on the impact of events or messages associated with the object.

SMART Plug-In (SPI)

Prepackaged software that installs into a management console and provides management capabilities specific to a given type of business application, database, operating system, or service.

trace log

An output file containing records of the execution of application software

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