HP Operations Smart Plug-in for BEA WebLogic Server

for HP Operations Manager for UNIX®

Software Version: 6.00

Configuration Guide

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Contents

1 WebLogic SPI Concepts

The HP Operations Smart Plug-in for BEA WebLogic Server (WebLogic SPI) enables you to manage WebLogic Servers from an HP Operations Manager for UNIX (HPOM) console. the WebLogic SPI adds monitoring capabilities otherwise unavailable to HPOM. For more information on HPOM, see *HP Operations Manager for UNIX Concepts Guide*.

Introducing the WebLogic SPI

In conjunction with HPOM, the WebLogic SPI offers centralized applications that help you monitor and manage systems using WebLogic Server. From the HPOM console, you can apply the HPOM performance and problem managing processes to monitor systems using WebLogic Server. The WebLogic SPI metrics are automatically sent to the HP Operations 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 the WebLogic SPI with HP Reporter and HP Performance Manager (both products must be purchased separately) to obtain additional reporting and graphing flexibility and capabilities. For details on integrating the WebLogic SPI with other HP products see Integrating HP Reporting and Graphing Products with the WebLogic SPI.

Smart Plug-in Data

The WebLogic SPI has several server-related metrics that gather data about the following:

- Server availability
- Server performance
- Memory usage
- Transaction rates
- Servlet executing times, time-outs, request rates
- JDBC connection status
- Web application processing
- Java message service processing
- Cluster processing
- Exception counts of scheduled WLS actions

Smart Plug-in Uses and Customizations

As a WebLogic Server administrator, you can choose the metrics crucial to the operation of WebLogic Server by modifying the WebLogic SPI templates. The templates contain settings that allow incoming data to be measured against predefined rules. These rules generate useful information in the form of messages. The messages have color-coding to indicate the severity level. You can review these messages for problem analysis and resolution. There are several pre-defined corrective actions for specific events or threshold violations. These corrective actions can be automatically triggered or operator-initiated. When you double-click a message, corrective actions appear under the Instructions tab and automatically generated metric reports appear under the Annotations tab.

Functions of the WebLogic SPI

The WebLogic SPI messaging, reporting, and action-executing capabilities are based on the HPOM concept of templates. For more information, see *HP Operations Manager for UNIX Concepts Guide*. The settings within these templates define various conditions that may occur within the WebLogic Server and allow information to be sent back to the HPOM management server. This helps you to proactively address potential or existing problems and avoid serious disruptions to web transaction processing. The WebLogic SPI performs the following functions described in the following sections:

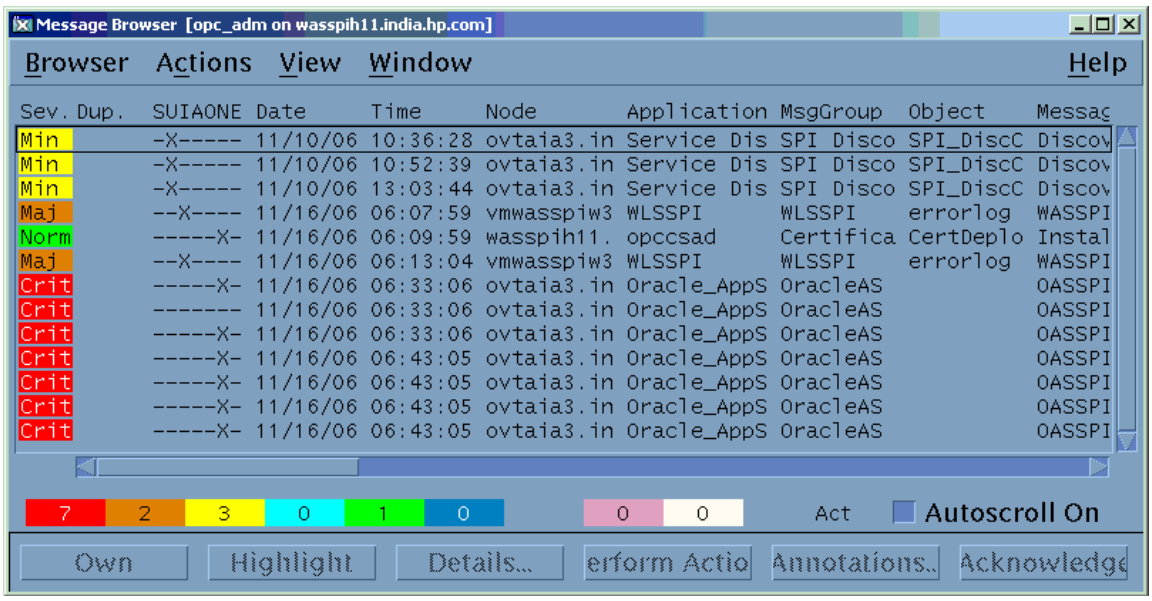
Collecting and Interpreting Server Performance and Availability Information

After you configure the WebLogic SPI, and the templates are deployed to the managed nodes, the SPI starts gathering server performance and availability data. This data is compared with the settings within the deployed templates. The templates define conditions that can occur within the WebLogic Server, such as queue throughput rates, cache use percentages, timeout rates, and average transaction times. The templates monitor these conditions against default thresholds (set within the templates) and trigger messages when a threshold has been exceeded.

Displaying Information

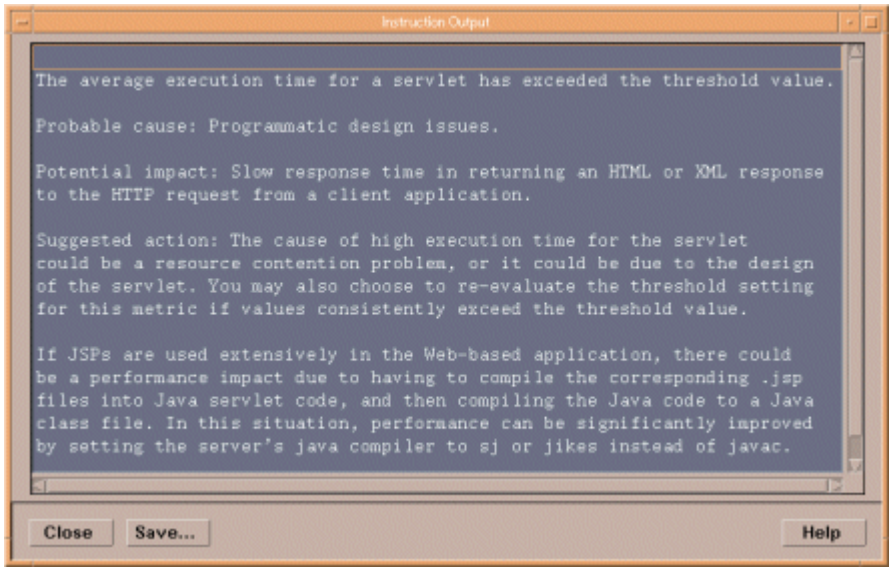
The WebLogic SPI templates generate messages when a threshold is exceeded. These messages can appear as:

Messages in the Message Browser– HP Operations agent software compares the values gathered for WebLogic Server performance and availability against the monitor template settings related to those specific areas. The agent software then forwards appropriate messages to the HPOM console. These messages appear with color-coded severity levels in the HPOM message browser.



Instruction Text– Messages generated by the WebLogic SPI programs contain instruction text to help analyze and solve problems. You can manually perform corrective actions preassigned to events or they can be triggered automatically.

Instruction text is usually present in the message details. Instruction text is also available in the *HP Operations Smart Plug-in for BEA WebLogic Server Reference Guide*.



ASCII-Text Reports– In addition to the instruction text, some messages cause automatic action reports to be generated. These reports show conditions of a specific WebLogic Server instance. If a report is available, you can find it within the Annotations area of the Message Details.

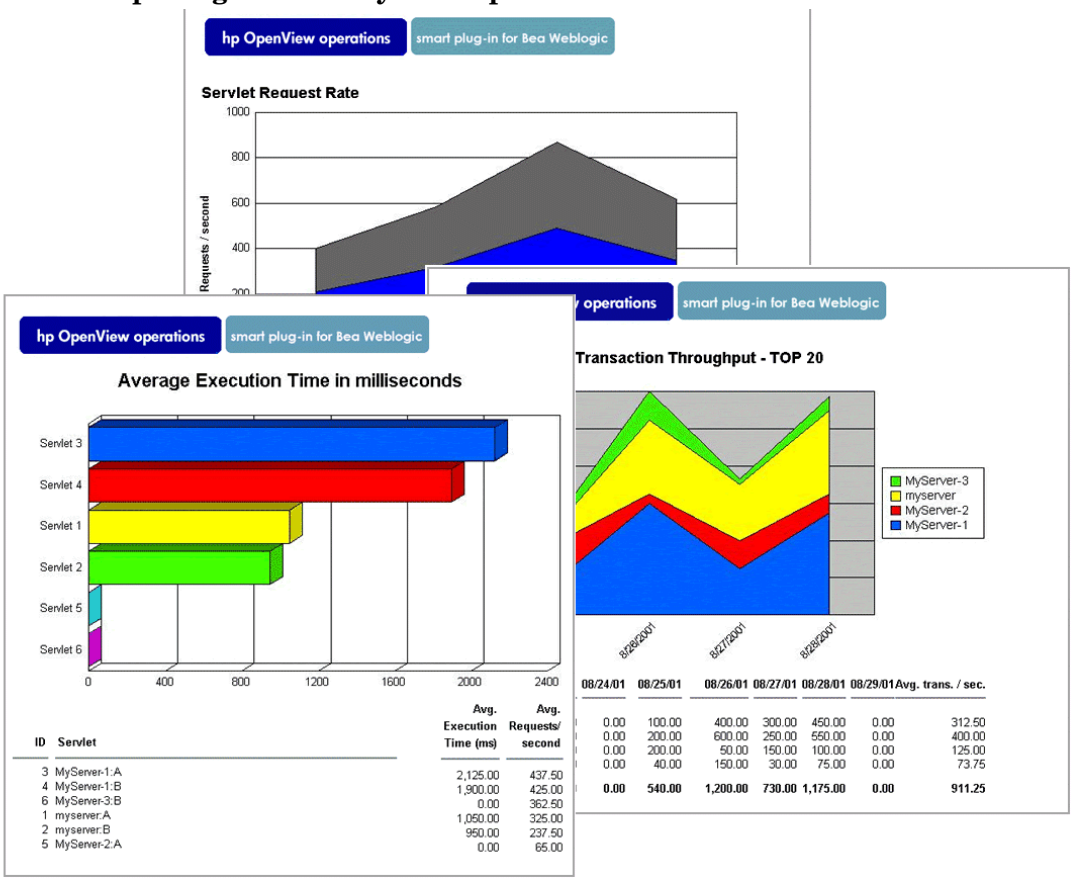
Generating Reports Using HP Reporter

You can integrate the WebLogic SPI with HP Reporter to provide you with management-ready, web-based reports. The WebLogic SPI Report package includes the templates for generating these reports. You can install the Report package on the Reporter Windows system.

After you install the product and complete basic configuration, Reporter generates reports of summarized, consolidated data every night. With the help of these reports you can assess the performance of the WebLogic Server over a period of time.

Reporter uses the WebLogic SPI data to generate reports that illustrate for example, servlet request rates, transaction throughput rates, and average transaction execution time.

Figure 1 Reports generated by HP Reporter

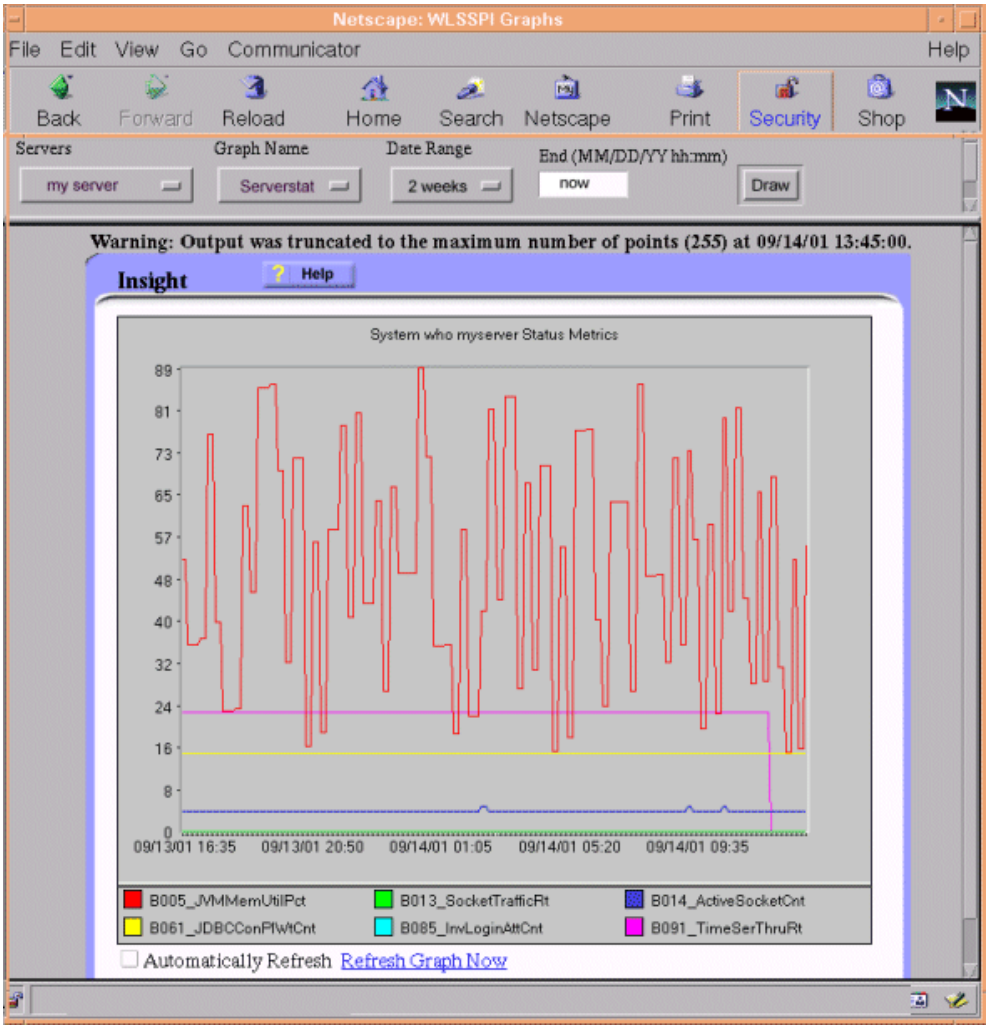


Graphing Data with HP Performance Manager

Metrics collected by the WebLogic SPI can be graphed. The values can then be viewed for trend analysis.

You can integrate the WebLogic SPI with HP Performance Manager to generate and view graphs. (use the **View Graphs** application from the WLSSPI Admin applications group to view graphs). These graphs show the values of the metrics collected by the WebLogic SPI. You can click **Perform Action** to view graphed data from almost all the WebLogic SPI alarm messages. **Perform Action** is present in the message browser and in the message details (you can access details by either double-clicking the message or clicking **Details...**in the message browser) in

the message browser. The action launches your Web browser, where you can choose a graph that shows values for the metric that generated the message as well as other related metrics. The following is a sample graph.



Customizing Templates and Metrics

You can use the WebLogic SPI templates without customization, or you can modify them to suit the needs of your environment. Some of the modifications and customizations that you can do are the following:

- Modify the default templates– Within a template, you can change the default settings for:
  - Collection interval
  - Threshold
  - Message text
  - Duration
  - Severity level of the condition
  - Actions assigned to the condition (operator-initiated or automatic)

- Create custom template groups– You can create custom template groups using default templates as base. For more information, see Customizing the WebLogic SPI.
- Create custom metrics– You can define your own metrics or User Defined Metrics (UDMs) to expand the monitoring capabilities of the WebLogic SPI. For more information about UDMs see the *HP Operations Smart Plug-in for User Defined Metrics User Guide*.

Components of the WebLogic SPI

The WebLogic SPI has two main components:

- Applications (including reports)
- Templates

You can use the applications and templates to configure and receive data in the form of messages, annotations, and metric reports. These messages (available in the message browser), annotations (available through message properties), and metric reports (available through applications or message details) provide information about the conditions present in the servers running on specific managed nodes.

The WebLogic SPI configuration applications let you configure the management server's connection to selected server instances on specific managed nodes. After you configure the connection, you can assign templates to the nodes. With HP Operations agent software running on the managed nodes, you can use the WebLogic SPI reporting applications to generate metric reports. In addition, you can generate graphs that show the WebLogic SPI data (available through message properties).

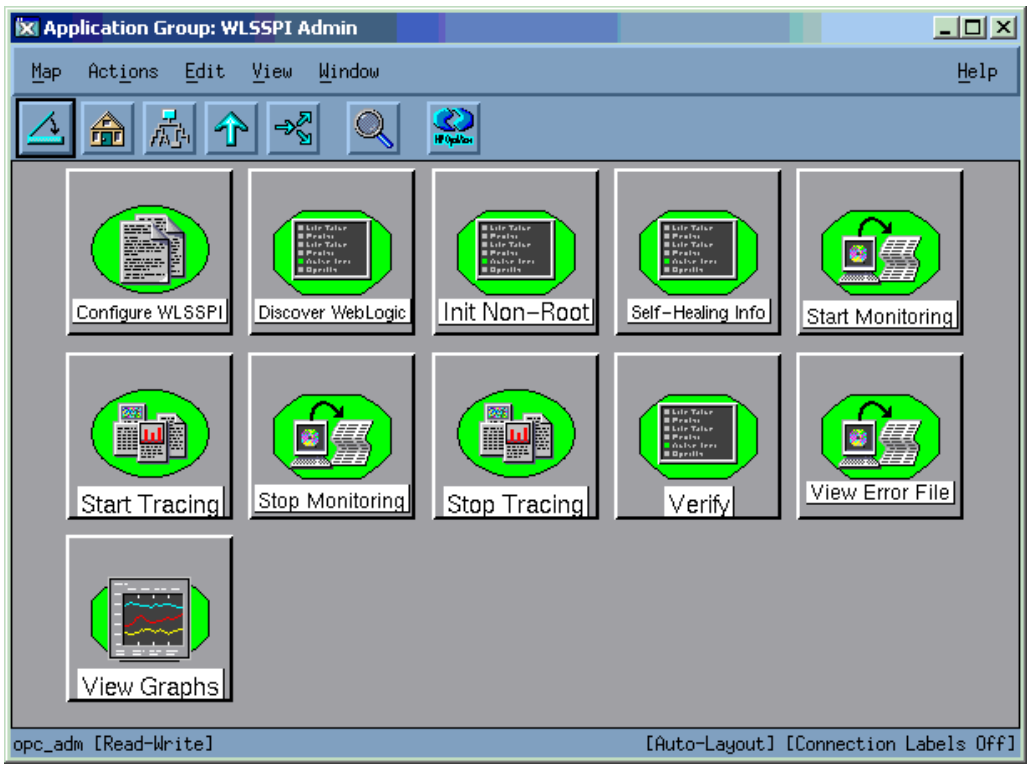
Applications

The WebLogic SPI applications include configuration, troubleshooting, and report-generating utilities. In the Application Bank window, the WebLogic SPI applications are divided into the following groups:

- WLSSPI Admin
- WebLogic
- WLSSPI Reports
- JMX Metric Builder: This application group is available *only if* you install the SPIJMB software.

WLSSPI Admin Applications Group

WLSSPI Admin applications enable you to configure, control, and troubleshoot the WebLogic SPI. You require **`root`** user permission to run WLSSPI Admin applications.



The WLSSPI Admin applications group contains the following applications:

- **Configure WLSSPI**– Launches the configuration editor and maintains the WebLogic SPI configuration.
- **Discover WebLogic**– 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). For all the steps required to configure a non-root HTTPS agent on a UNIX managed node see Configuring a Non-Root HTTPS Agent on a UNIX Managed Node (OVO 8.x Only) on page 52.
- **Self-Healing Info**– Collects data that you can send to your HP Support representative.
- **Start Monitoring**– Starts the collection of metrics for one application server or all application servers on a managed node. Launch the Verify application to determine if monitoring is started or stopped. By default, monitoring is on.
- **Stop Monitoring**– Stops the collection of metrics for one application server or all application servers on a managed node.
- **Start Tracing**– Starts the collection of tracing information for selected metrics. Launch this application only when instructed by your HP support representative.
- **Stop Tracing**– Stops the collection of tracing information for selected metrics. Launch this application only when instructed by your HP support representative.
- **Verify**– Verifies that the WebLogic SPI is properly installed on the server or managed node.
- **View Error File**– Enables you to view the contents of the WebLogic SPI error log file.

- **View Graphs**– Enables you to view the WebLogic SPI graphs, generated by HP Performance Manager, in a web browser. This requires additional setup. For more information see Task 1: Configure the Management Server to Launch Your Web Browser on page 37.

For more information about each of the above applications, see Appendix C, Applications.

WebLogic Applications Group

You can manage WebLogic Server functions by using the applications in the WebLogic Applications group.

To access the WebLogic applications double-click **WLSSPI** → **WebLogic** in the Application Bank window.

The WebLogic group contains the following applications:

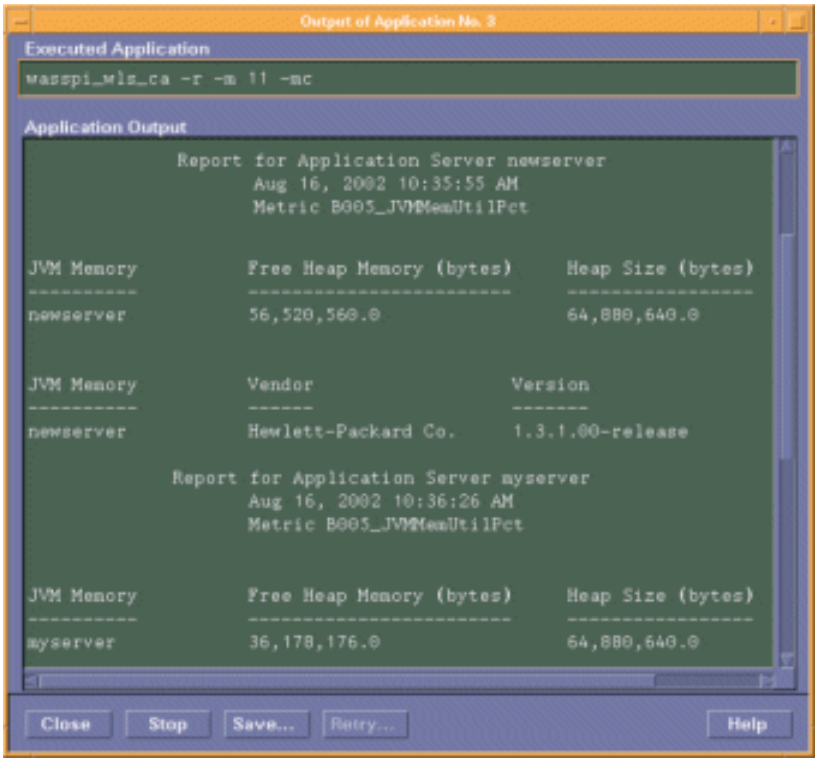
- **Check WebLogic**– Does an interactive status check of the WebLogic Server.
- **Start WLS Console**– Launches the WebLogic Server Admin console in your Web browser (requires setup).
- **Start WebLogic**– Enables you to start the WebLogic Server from the HPOM console (requires setup).
- **Stop WebLogic**– Enables you to stop the WebLogic Server from the HPOM console (requires setup).
- **View Deployed Apps**– Enables you to view the names and versions of all applications that are deployed on a WebLogic Server instance.
- **View WebLogic Log**– Enables you to view the WebLogic Server log files.
- **View WebLogic Servers**– Enables you to view the WebLogic domain configuration, cluster information, and physical machines.
- **View Application Activation Status**– Enables you to view the activation status of the applications running on a WebLogic Server.

- **View Application Timeout**– Enables you to view the time left before retiring applications running on a WebLogic Server time out.

WLSSPI Reports Group

The WLSSPI Reports group contains reports that show information about the WebLogic Server conditions.

You can generate these reports manually by dragging a managed node to a report in the Application Bank window. Each report shows the status of all configured WebLogic Server instances on the managed node in relation to the metric for which the report is generated. The following is a sample WebLogic SPI Application Bank report:



Application Bank Reports Generated from Alarms

An alarm condition can generate a report. These reports are generated automatically and are context sensitive, relating only to a single server on the managed node. These reports appear within the Annotations section of a message.

If you configure the message browser to display the **SUIAONE** columns, a flag appears under the **S** column (adjacent to the message) when a report is generated.

JMX Metric Builder Applications

The JMX Metric Builder Applications group contains the following applications:

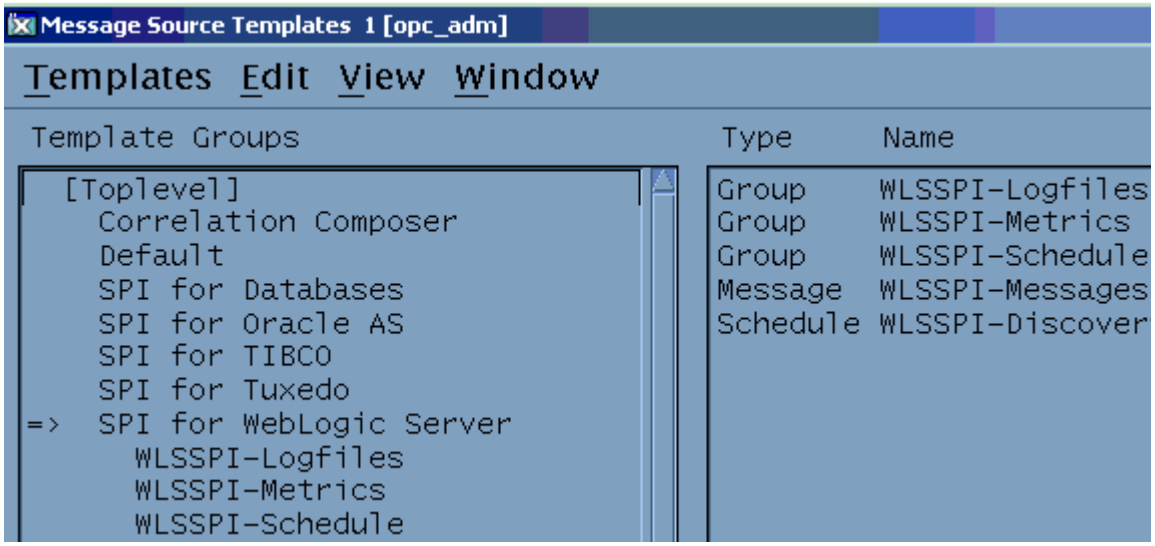
- **Deploy UDM**– Deploys the UDM file.
- **Gather MBean Data**–Collects MBean information that is used with the JMX Metric Builder.

- **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 HP Operations subagent.

For more information about the JMX Metric Builder Applications group and steps to install the SPIJMB software, see the *HP Operations Smart Plug-in for User Defined Metrics User Guide*.

WebLogic SPI Template Groups and Templates

WebLogic SPI templates are organized in groups and sub-groups.



The SPI for WebLogic Server template group contains the following template sub-groups and individual templates:

- **WLSSPI-Logfiles** – Contains templates that generate messages based on log file and error text detected in both the WebLogic Server log files and the WebLogic SPI log files. The information captured from these log files includes errors that occur in the operation of the WebLogic Server or the WebLogic SPI and changes made to WebLogic Server configuration.
- **WLSSPI-Metrics** – Contains metric templates that monitor the performance levels and availability of a WebLogic Server.

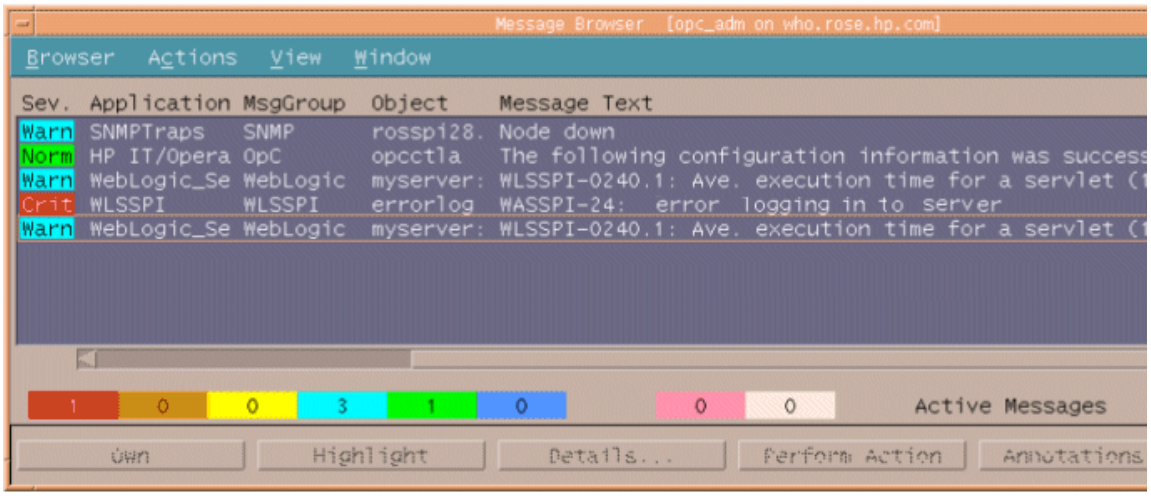
  Each metric template determines the threshold conditions for the monitored metric, the message text that is sent to the HPOM message browser when the threshold is exceeded, the actions to execute, and instructions that appear.
- **WLSSPI-Schedule** – Contains collector templates that specify the collection interval of the metric templates. Within the name of each collector template is its collection interval. For example, the collection interval of the template WLSSPI-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 a collector template, you can see the metrics collected within the interval (listed by number, following the `-m` option of the collector/analyzer command `wasspi_wls_ca`).

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

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

- **WLSSPI-Messages** – This is a single template. It intercepts the WebLogic SPI messages for the HPOM message browser.
- **WLSSPI-Discovery** – This is a single template. It updates the configuration on the HPOM management server and managed nodes.



In the message browser shown above, the last three messages, which are generated by the WebLogic SPI templates, belong to the WebLogic and WLSSPI message groups (see the column titled MsgGroup). The WebLogic messages indicate conditions occurring in the WebLogic Server, while the WLSSPI messages indicate conditions occurring in the WebLogic SPI.

2 Installing, Removing, and Upgrading the WebLogic SPI

Installing the WebLogic SPI

You must install the HP Operations Manager (HPOM) management server and discovery package before installing the WebLogic SPI. It is not necessary to stop HPOM sessions before beginning the the WebLogic SPI installation.

The discovery package and the WebLogic SPI are available on the *HP Operations Smart Plug-ins DVD*.

If you want to create UDMs, install the SPIJMB software. For more information about this software see the *HP Operations Smart Plug-in for User Defined Metrics User Guide*.

For a complete list of software requirements, see the *HP Operations Smart Plug-in for BEA WebLogic Server Release Notes*.

The instructions that follow show the command line usage of `swinstall`. On HP-UX systems, you can also use the graphical user interface (GUI).

For an HP-UX 11.23 and 11.31 management server, run the following command:

```
swinstall -s /cdrom/OV_DEPOT/11.0HPUX.depot WLSSPI
```

On a Solaris management server the packages are supported in both depot and solaris native format.

For a Solaris management server in depot format, type:

```
swinstall -s /cdrom/OV_DEPOT/SOLARIS.depot WLSSPI
```

For a Solaris management server in native format, perform the folowing steps:

1. Before installing the SPI software on the Solaris management server, set **`PKG_NONABI_SYMLINKS`** to **`true`** to avoid breakage of existing links during the installation. Type:

   ```
   PKG_NONABI_SYMLINKS=TRUE

   export PKG_NONABI_SYMLINKS
   ```

2. The SPIs have dependencies on “DSI2DDF” and “SPI-SVCDISC-OVO”. These two packages are not available in the native format of solaris. Hence, install “DSI2DDF” and “SPI-SVCDISC-OVO” from SOLARIS.depot before installing from the HPOMSpiDVD-8.1.sparc package.

3. To install from the HPOMSpiDVD-8.1.sparc, type:

   ```
   pkgadd -d /cdrom/OV_DEPOT/HPOMSpiDVD-8.1.sparc
   ```

4. Select the following SPIs for installation:

   - HPOvSpiWls

- HPOvSpiJmx
- HPOvSpiShs

Removing the WebLogic SPI

To completely remove all the WebLogic SPI components, follow these steps:

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

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

1. Open a terminal window and log on as **`root`**.
2. In the terminal window, enter the following:
   - For an HP-UX 11.23 and 11.31 management server, type:

     `/usr/sbin/swremove WLSSPI` or
     `/usr/sbin/swremove SPIWebLogicAll`

   - For a Solaris management server, type:

     ```
     /usr/sbin/pkgrm HPOvSpiWls
     /usr/sbin/swremove DSI2DDF
     /usr/sbin/swremove SPI-SVCDISC-OVO
     ```

   The `swremove` and `pkgrm` command deletes the files from the file system only. The WebLogic SPI templates are not deleted from the HPOM data repository and must be deleted manually. Run the command:

   ```
   cd /opt/OV/wasspi/wls/bin
   find . -name "wasspi_wls*" -exec rm {} \;
   ```

   This deletes all files that begin with `wasspi_wls` in the directory `/opt/OV/wasspi/wls/bin/`
3. Remove the templates and the WebLogic SPI software from the managed nodes before deleting the templates from the HPOM data repository.

Task 2: Remove the WebLogic 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 WebLogic node group and all managed nodes on which the WebLogic templates are deployed.

3 Click **Remove nodes/groups**.

4 Open the Node Group Bank and select the WebLogic node groups.

5 Select **Install/Update SW & Config** from the Action menu and select the following check boxes:

- Templates
- Actions
- Monitors
- Commands

6 Click **Nodes in List**.

7 Click **Force Update**.

8 Click **OK** to remove the templates, actions, commands and monitors from the managed nodes. The following message appears in the message browser:

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

Task 3: Delete the WebLogic SPI Templates and Template Groups

Delete all the template sub-groups and templates from the SPI for WebLogic Server template group. Then delete the SPI for WebLogic Server template group. Follow these steps:

1 From the Windows menu, select Message Source Templates and double-click the **SPI for WebLogic Server** template group.

2 Press **Shift** and select all the templates and template groups in the SPI for WebLogic Server template group.

3 Click **Delete From All...**The following message appears:

```
Do you really want to delete the template(s)?
```

4 Click **Yes**.

5 Delete the SPI for WebLogic Server template group.

6 Delete all the customized templates (default WebLogic SPI templates that you modified) residing in other HPOM template groups.

Task 4: Delete the WebLogic SPI Application Group

1 Open the Application Bank.

2 Right-click the WLSSPI application group and select **Delete**. The following message appears:

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

3 Click **Yes**.

Task 5: Delete the WebLogic SPI Message and Node groups

1. From the Window menu, select **Message Group Bank**.
2. In the Message Group Bank window, right-click the **WLSSPI** group and select **Delete**. The following message appears:

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

3. Click **Yes**.
4. Repeat steps 2 and 3 for the WebLogic group.
5. From the Window menu, select **Node Group Bank**.
6. Right-click each WebLogic SPI and WebLogic Server group and select **Delete**. The following message appears:

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

7. Click **Yes**.

Task 6: Remove the WebLogic SPI Directory

Run the following command from the command prompt:

```
rm -rf /opt/OV/wasspi/wls
```

Task 7: Remove the Report Package (Optional)

If you installed the WebLogic SPI report package, remove it (from the Windows system on which HP Reporter is running):

1. Go to **Settings** → **Control Panel** → **Add/Remove Programs**.
2. Select the the WebLogic SPI report package and click **Remove**.

Task 8: Remove the Graph Package (Optional)

If you installed the WebLogic SPI graph packages (on the HPOM management server and on your system running HP Performance Manager), remove them:

- For the HPOM management server, run the following command:

  ```
  /usr/sbin/swremove WLSSPI-GRAPHS
  ```

- For a Windows system running HP Performance Manager, follow these steps:

  a. Go to **Settings** → **Control Panel** → **Add/Remove Programs**.

  b. Select the WebLogic SPI graph package (HP Operations SPI for WebLogic Server - Graphing Component Integration) and click **Remove**.

- For a HP-UX system (not the HPOM management server) running HP Performance Manager, follow these steps:

  If HP Performance Manager is installed on the HPOM management server, the files are removed in Task 1: Remove the WebLogic SPI Software from the Management Server.

  a. Run the following command to verify that the graph package is installed:

```
swlist | grep WLSSPI-GRAPHS
```

b Run **swremove WLSSPI-GRAPHS**, if the graph package is installed.

- On a Solaris system (not the HPOM management server) running HP Performance Manager, follow these steps the following:

  If HP Performance Manager is installed on the HPOM management server, the files are removed in Task 1: Remove the WebLogic SPI Software from the Management Server.

  a Run the following command to verify that the graph package is installed:

  ```
  /usr/bin/pkginfo HPOvSpiWlsGc
  ```

  b Run **/usr/sbin/pkgrm HPOvSpiWlsGc**, if the graph package is installed.

Upgrading the WebLogic SPI

The existing WLSSPI_RPT_METRICS datasource is automatically deleted when you upgrade the SPI from version A.04.00.00 to 4.20. A new datasource is created and the existing data is lost.

The datasource is deleted irrespective of whether you are using CODA or HP Performance Agent.

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

To upgrade the WebLogic SPI, complete these tasks:

- Task 1: Remove the WebLogic SPI Software from the Management Server
- Task 2: Delete the WebLogic SPI Templates
- Task 3: Delete the WebLogic SPI Applications
- Task 4: Upgrade the WebLogic SPI
- Task 5: Assign Operator Responsibilities for opc_adm
- Task 6: Assign Templates to the Management ServerTask 7: Distribute Templates to the Management Server
- Task 7: Distribute Templates to the Management Server
- Task 8: Customize Templates
- Task 9: Move Nodes to New Node Group
- Task 10: Delete Node Groups
- Task 11: Distribute Actions, Monitors, Commands, and Templates
- Task 12: Launch the Discover WebLogic Application
- Task 13: Install the New Report Package (Optional)
- Task 14: Install the New Graph Package (Optional)

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

1. Open a terminal window and log on as **root**.
2. Run the following commands:

   ```
   /usr/sbin/swremove WLSSPI
   /usr/sbin/swremove SPIWebLogicAll
   /usr/sbin/swremove WLSSP-GRAPHS
   ```

3. Run the following command to delete all the SPI files in the `/opt/OV/wasspi/wls/bin/` directory

   ```
   cd /opt/OV/wasspi/wls/bin
   find . -name "wasspi_wls*" -exec rm {} \;
   ```

   This deletes all files that begin with `wasspi_wls`.

Task 2: Delete the WebLogic SPI Templates

Delete all the WebLogic SPI templates and template groups that appear under the SPI for WebLogic Server template group and then delete the SPI for WebLogic Server template group. If you customized any of the default templates, note the changes because the customizations are not saved. Then, follow these steps:

1. From the windows menu, select **Message Source Templates** and select the **SPI for WebLogic Server** template group.
2. Double-click the WebLogic group (WebLogic 10.0, 9.x, 8.1, 7.0). Open the template groups until the lowest level that is the individual templates.
3. Press **Shift** and select all the templates.
4. Click **Delete From All...** The following message appears:

   `Do you really want to delete the template(s)?`

5. Click **Yes**.
6. Go up a level and open the next group. Repeat steps 2 through 5 till you delete all the WebLogic SPI individual and group templates in the Message Source Template window.

Task 3: Delete the WebLogic SPI Applications

1. Open the Application Bank.
2. Right-click the WLSSPI application group and select **Delete**. The following message appears:

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

3. Click **Yes**.

Task 4: Upgrade the WebLogic SPI

The WebLogic SPI software is available on the *HP Operations Smart Plug-ins 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).

For an HP-UX 11.23 and 11.31 management server, run the following command:

```
swinstall -s /cdrom/OV_DEPOT/11.0HPUX.depot WLSSPI
```

On a Solaris management server the packages are supported in both depot and solaris native format.

For a Solaris management server in depot format, type:

```
swinstall -s /cdrom/OV_DEPOT/SOLARIS.depot WLSSPI
```

For a Solaris management server in native format, perform the folowing steps:

1. Before upgrading the SPI software on the Solaris management server, set **`PKG_NONABI_SYMLINKS`** to **`true`** to avoid breakage of existing links during the installation. Type:

   ```
   PKG_NONABI_SYMLINKS=TRUE

   export PKG_NONABI_SYMLINKS
   ```

2. The SPIs have dependencies on “DSI2DDF” and “SPI-SVCDISC-OVO”. These two packages are not available in the native format of solaris. Hence, install “DSI2DDF” and “SPI-SVCDISC-OVO” from SOLARIS.depot before installing from the HPOMSpiDVD-8.1.sparc package. To install from the HPOMSpiDVD-8.1.sparc, type:

   ```
   pkgadd -d /cdrom/OV_DEPOT/HPOMSpiDVD-8.1.sparc
   ```

3. Select the following SPIs for upgrading:
   - HPOvSpiWls
   - HPOvSpiJmx
   - HPOvSpiShs

Task 5: Assign Operator Responsibilities for opc_adm

1. Log on to HPOM as administrator (**`opc_adm`**).
2. Open the User Bank window, right-click the opc_adm user, and select **Modify**.
3. In the Modify User:opc_adm user window, click **Responsibilities**.
4. For WLSSPI and WebLogic Message Groups, ensure that all check boxes are selected.
5. Assign the WLSSPI Node or Message Groups to some other appropriate operators.
6. Click **Close**.

Task 6: Assign Templates to the Management Server

1. Open the Node Bank window and select 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. In the Template Groups pane, select the **SPI for WebLogic Server** template group.
6. From the Message Source Templates window, in the right pane, select the **WLSSPI-Discovery** template group and **WLSSPI-Messages** template.

7 From the Add Configuration window, click **Get Template Selections**. The WLSSPI-Messages and WLSSPI-WebLogic-Discovery templates appear in the right pane.

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

Task 7: Distribute Templates to the Management Server

1 Open the Node Bank window and select 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, select the **Templates** check box.

5 Select **Force Update**.

6 Click **OK**.

The following message appears in the message browser:

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

Task 8: Customize Templates

1 Copy the default templates.

2 Apply the customizations made to the previous version of templates to the copy of the current version.

In this version of the WebLogic SPI, the templates are no longer grouped by WebLogic version numbers.

Task 9: Move Nodes to New Node Group

Move all managed nodes (running supported versions of the WebLogic Server) in the SPI for WebLogic Server node groups to the new WebLogic node group. Managed nodes running supported versions of the WebLogic Server are in the following node groups: WebLogic 10.0, WebLogic 9.x, WebLogic 8.1, and WebLogic 7.0. To move the nodes, follow these steps:

1 Open the Node Bank and select the **SPI for WebLogic Server** node group.

2 Double-click **WebLogic 10.0** node group and note the managed nodes in it. Repeat this step for the **WebLogic 10.0, and WebLogic 7.0** node groups.

3 Go back to the top level of the node bank (where the WebLogic node group is displayed).

4 Drag and drop or copy and paste the nodes (noted in step 2) from the IP submap to the WebLogic node group.

Task 10: Delete Node Groups

Delete all versioned node groups that are in the SPI for WebLogic Server node group. This might include: WebLogic 10.0, WebLogic 9.x, WebLogic 8.1, and WebLogic 7.0. To delete the versioned node groups, follow these steps:

1 Open the Node Bank and select the **SPI for WebLogic Server** node group.

2 Select a versioned WebLogic node group and, from the Edit menu, select **Delete**. The following message appears:

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

3 Click **Yes**.

4 Repeat steps 2 and 3 until you delete all versioned WebLogic node groups.

Task 11: Distribute Actions, Monitors, Commands, and Templates

1 From the Node Bank window, select the nodes or node groups on which you want to install the WebLogic SPI.

2 From the 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 on the managed nodes.

4 Select the **Force Update** check box.

5 Select the Nodes in list button. Upon completion, the following message appears in the message browser for each managed node:

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

You might see some WebLogic SPI errors in the message browser. These errors are the result of the transition to the updated programs and you can ignore them. The WebLogic SPI templates and programs are updated on the Management Server and selected managed nodes. These errors are resolved when the upgrade is complete.

Task 12: Launch the Discover WebLogic Application

You must launch the Discover WebLogic application. Re-entering any of the WebLogic SPI configuration data is not required because all configuration data is saved. To re-deploy the file, you can drag and drop multiple nodes, node groups, or single nodes. When you re-deploy the file, relevant information is updated, transmitted, and stored on the node. To launch the Discover WebLogic application, follow these steps:

1 From the HPOM console, select the node in the Node Bank window.

2 From the Window menu, select **Application Bank**.

3 In the Application Bank window, select **WLSSPI → WLSSPI Admin → Discover**. (If the above does not appear as described, select **Map → Reload**). The Introduction window opens.

4 Click **Next**. A second Introduction window opens. Information about the properties required for the discovery process to work are given in this window

5 Read this information and click **Next**. The configuration editor opens.

6 Make the necessary changes using the configuration editor.

When setting the configuration using configuration editor, note the following:

- GRAPH_SERVER property is no longer supported in the WebLogic SPI. Instead, set the GRAPH_URL property.
- Note the locations of the UDM files on your managed nodes and delete any occurrence of the UDM_DEFINITIONS_FILE property from your configuration.
- Do not configure UDMs individually on your managed nodes. Instead configure these UDMs on the management server in the `/opt/OV/conf/wlsspi/wasspi_wls_udmDefnintions.xml` file (or, set the UDM_DEFINITIONS_SOURCE property to use another file).
- After you consolidate the UDMs on the management server, delete the 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. The Confirm Operation window opens.

8 Click **OK**.

If you click **Cancel**, all the changes made to the configuration 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, launch the Discovery application, click **Next** in the configuration editor, and then click **OK** in the Confirm Operation window.

Do not close the Discover application window until the discovery process is complete. The discovery process might take several minutes to complete.

Task 13: Install the New Report Package (Optional)

Remove older versions of the WebLogic SPI report package from your Windows system running HP Reporter and install the new WebLogic SPI report package. To install the new report package, follow these steps:

1 On the Windows system running HP Reporter, go to **Settings** → **Control Panel** → **Add/Remove Programs**.

2 Select the WebLogic SPI report package and click **Remove**.

3 To install the WebLogic SPI report package, follow the steps given in

4 Integrating with HP Reporter on page 82.

Task 14: Install the New Graph Package (Optional)

- If HP Performance Manager is running on a Windows system, remove older versions of the WebLogic SPI graph package and install the new WebLogic SPI graph package. To install the new graph package, follow these steps:

  a Go to **Settings** → **Control Panel** → **Add/Remove Programs**.

  b Select the WebLogic SPI graph package (HP Operations SPI for WebLogic Server - Graphing Component Integration) and click **Remove**.

c. To install the WebLogic SPI graph package, follow the steps in Integrating with HP Performance Manager on page 87.

- If HP Performance Manager is running on a HP-UX system (not the HPOM management server), follow these steps:

  If HP Performance Manager is installed on the HPOM management server, the files are automatically updated when you install the SPI software.

  a. Run **`swlist | grep WLSSPI-GRAPHS`** to verify that the graph package is installed.

  b. Run **`swremove WLSSPI-GRAPHS`** if the graph package is installed.

  c. To install the WebLogic SPI graph package follow the steps in Integrating with HP Performance Manager on page 87.

- If HP Performance Manager is running on a Solaris system (not the HPOM management server), follow these steps:

  If HP Performance Manager is installed on the HPOM management server, the files are automatically updated when you install the SPI software.

  a. Run **`/usr/bin/pkginfo HPOvSpiWlsGc`** to verify that the graph package is installed.

  b. Run **`/usr/sbin/pkgrm HPOvSpiWlsGc`** if the graph package is installed.

  c. To install the WebLogic SPI graph package follow the steps given in section.

3 Configuring the WebLogic SPI

To configure the WebLogic SPI, you must complete all configuration prerequisites, the WebLogic SPI configuration on managed nodes and the management server, and additional configuration based on your environment.

Configuration Prerequisites

Complete the following tasks before configuring the WebLogic SPI:

- Task 1: Configure the Management Server to Launch Your Web Browser
- Task 2: Assign Operator Responsibilities for opc_adm
- Task 3: Assign Templates to the Management Server
- Task 4: Deploy Templates on the Management Server

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

The WebLogic SPI uses the `ovweb` utility to launch the WebLogic administration console in your web browser and for displaying graphs generated by HP Performance Manager. Skip this task if you do not want to start the WebLogic administration console from the HPOM console and do not use HP Performance Manager.

1 Enter the browser invocation command in the `ovweb.conf` file. If no browser invocation command is included in the `ovweb.conf` file, `ovweb` starts the default browser.

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

The browser invocation command must contain `%s` to allow the WebLogic 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*

To display the WebLogic SPI graphs, ensure that your browser is Java Script enabled. Check the setting within the browser's Preferences.

2 When running the Discover WebLogic application to configure the WebLogic SPI from the management server (see Task 3: Launch Discover WebLogic on page 45), set the following conditional properties:

- Set the ADMIN_HOST and ADMIN_PORTS properties, to start the WebLogic console from the HPOM console.
- Set the GRAPH_URL property if you are using HP Performance Manager.

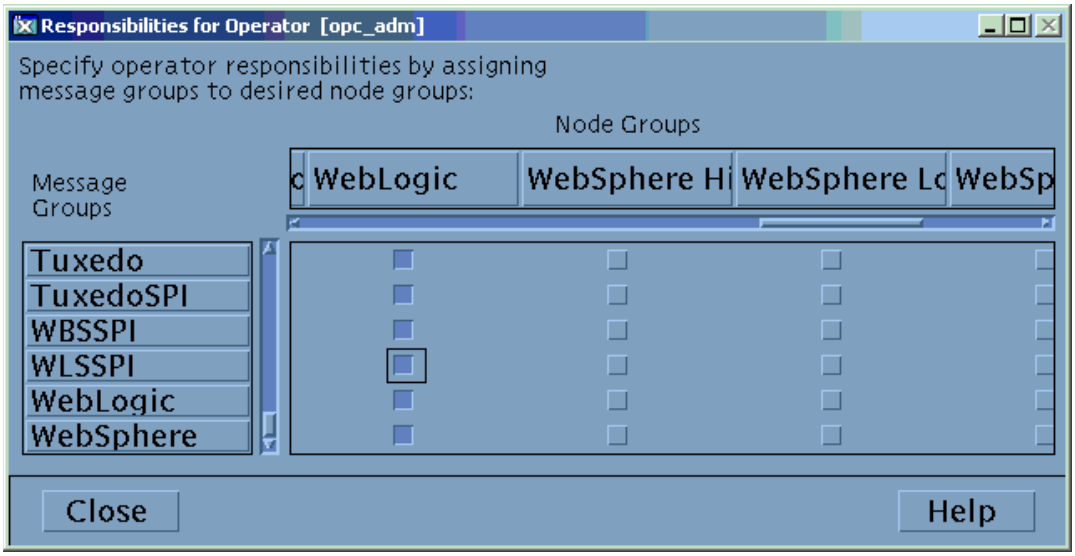
For more information about launching a browser in HPOM, see the man pages for `ovweb`, `ovweb.conf`, and `ov.envvars`.

Run the following command at the command prompt to access instructions for enabling graphs:

```
man ovweb
```

Task 2: Assign Operator Responsibilities for opc_adm

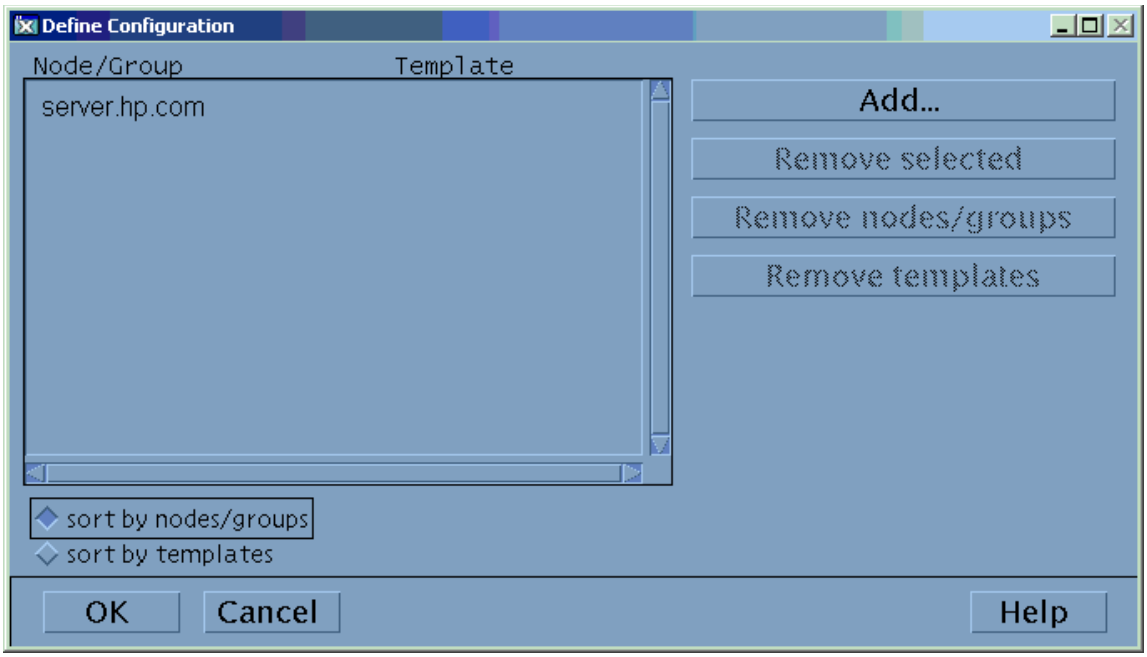
1. Log on to HPOM as the administrator (**`opc_adm`**).
2. Open the User Bank window, right-click the `opc_adm` user, and select **Modify**. The Modify User:opc_adm user window opens.
3. Click **Responsibilities**. Ensure that all check boxes are selected for WLSSPI and WebLogic Message Groups.



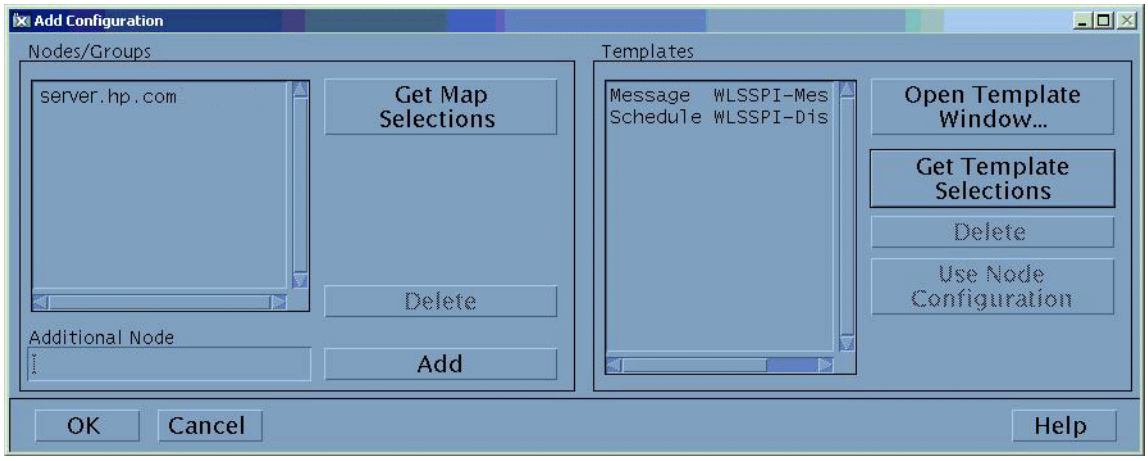
4. Follow steps 2 through 4 to assign the WLSSPI Node or Message Groups to another appropriate operators.
5. Click **Close**.

Task 3: Assign Templates to the Management Server

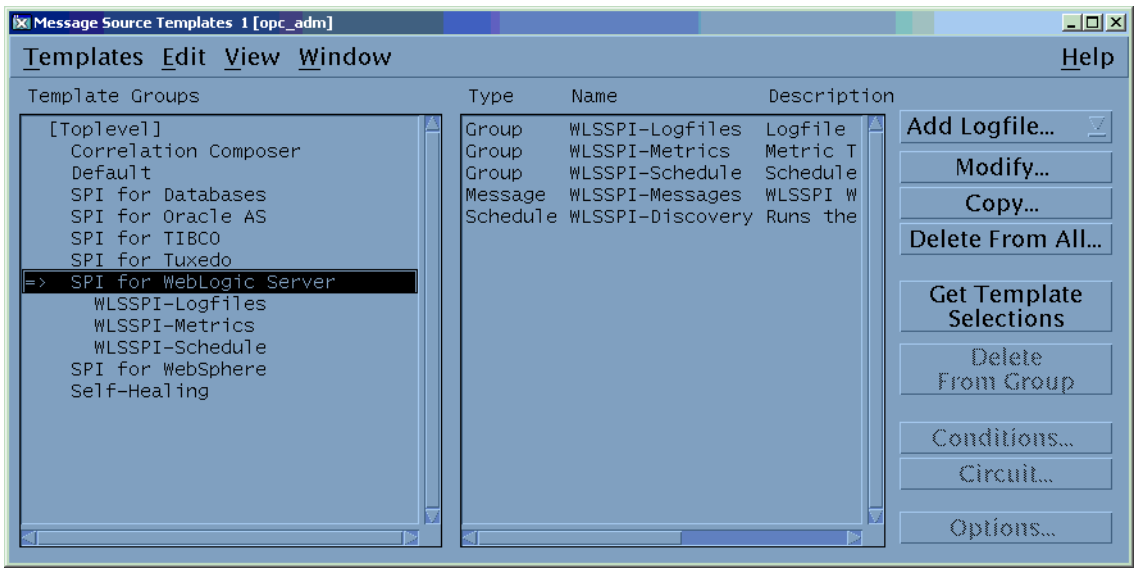
1. Open the Node Bank window and select the management server.
2. From the Actions menu, select **Agents → Assign Templates**. The Define Configuration window opens.



3 Select a Node/Group and click **Add**. The Add Configuration window opens.



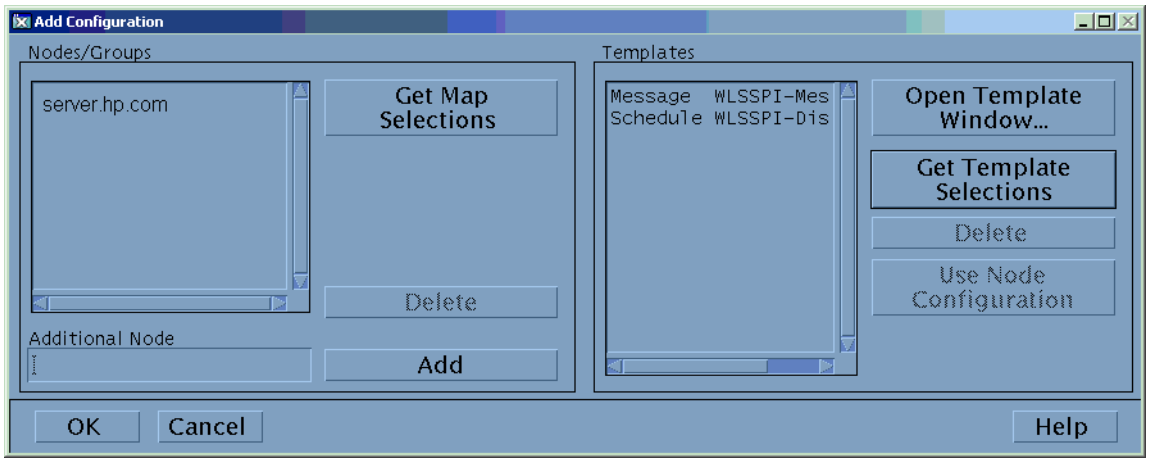
4 Click **Open Template Window**. The Message Source Templates window opens.



5 Select **SPI for WebLogic Server** template group from the Template Groups pane. A list of the WebLogic SPI template sub-groups and templates appears on the right pane.

6 Select **WLSSPI-Discovery** (from the WLSSI-Schedule group) and **WLSSPI-Messages** templates from the right pane.

7 In the Add Configuration window, click **Get Template Selections.** The WLSSPI-Discovery and WLSSPI-Messages templates appear in the right pane.



8 Click **OK**.

Task 4: Deploy Templates on the Management Server

1 Open the Node Bank window and select the management server.

2 Select **Actions → Agents → Install/Update SW & Config...** The Install/Update OVO Software and Configuration window opens.

3 In the Target Nodes pane, select **Nodes in list requiring update**.

4 Select the **Templates** check box and click **Force Update**.

5 Click **OK**.

The following message appears in the message browser:

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

The WebLogic SPI Configuration from Managed Nodes

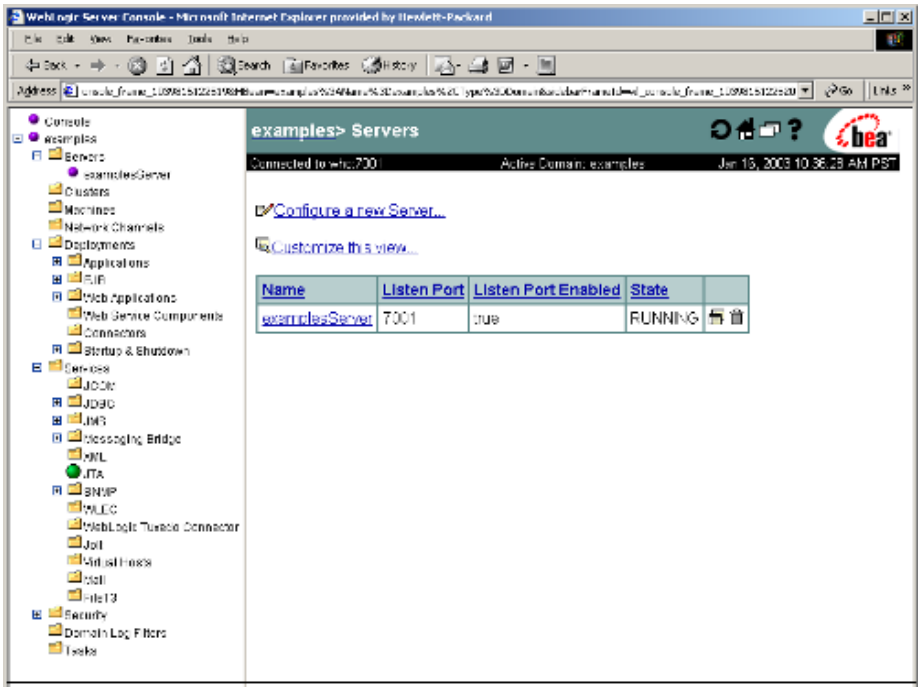
Complete the following tasks for each managed node:

- Task 1: Verify the Application Server Status
- Task 2: Configure a WebLogic Server User

Task 1: Verify the Application Server Status

Check the status of WebLogic Servers in the WebLogic administration console to verify if the application servers are running.

Figure 2 The WebLogic Admin Server console



Task 2: Configure a WebLogic Server User

Collect the WebLogic login and password for each WebLogic Administration Server. If you do not want to use the existing login and password, create a new login and password. The WebLogic SPI discovery process uses the login and password to gather basic configuration information, and the WebLogic SPI data collector uses the login and password to collect metrics.

To simplify the WebLogic SPI configuration, keep the login and password for both WebLogic Servers and WebLogic Administration Servers similar.

WebLogic Server Version 7.0 or Later

On WebLogic Server version 7.0 or later, you can log on as the administration user configured during installation of WebLogic Server. Or, you can log on as a user that belongs to the WebLogic Administrators or Monitors group.

To configure a user belonging to Administrators or Monitors group, you must use the WebLogic administration console. For more information about creating a user and assigning a user to a group, see the Securing WebLogic Resources manual, Users and Groups section. (**http://e-docs.bea.com/wls/docs70/secwlres/usrs_grps.html** or **http://e-docs.bea.com/wls/docs81/secwlres/usrs_grps.html**).

A user that belongs to the Monitors group cannot use the Start WebLogic or Stop WebLogic application to start or stop WebLogic Servers from the HPOM console. This user also cannot perform the JMX call 'set' when implementing JMX actions to assign a value to a specified attribute if you are creating UDMs. For more information about JMX Actions see Appendix E in the *HP Operations Smart Plug-in for User Defined Metrics for UNIX User Guide*.

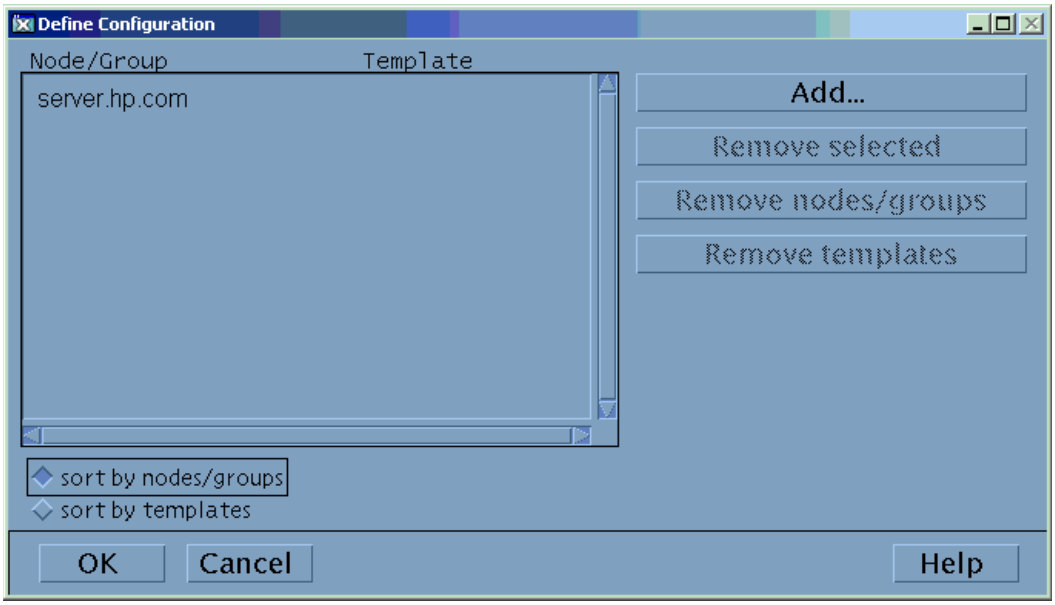
The WebLogic SPI Configuration from the Management Server

Complete the following tasks from the management server:

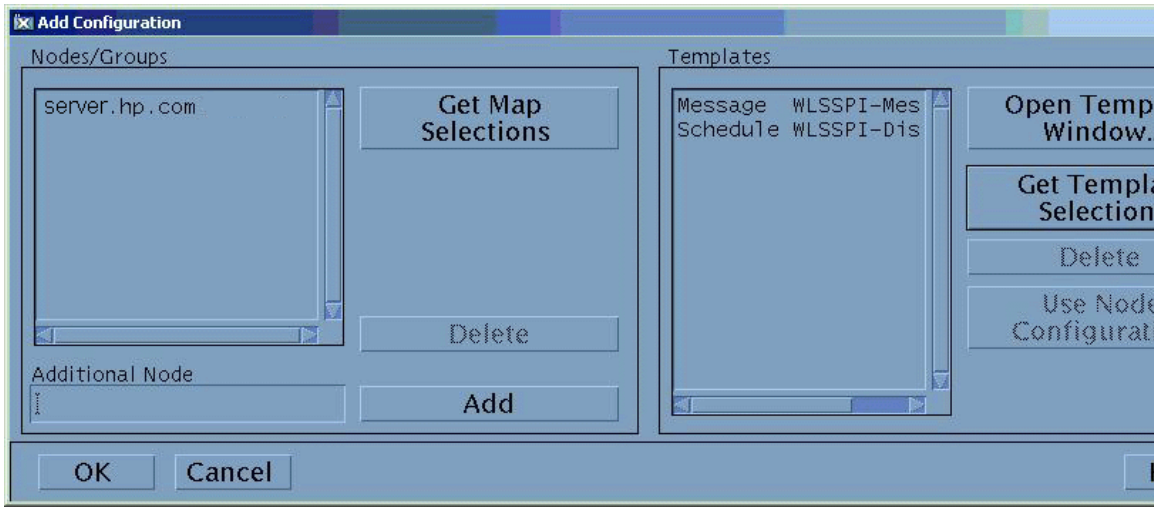
- Task 1: Assign WLSSPI-Messages Template to the Managed Node
- Task 2: Distribute Templates, Actions, Monitors, Commands
- Task 3: Launch Discover WebLogic
- Task 4: Set Additional Properties
- Task 5: Verify the Discovery Process
- Task 6: Add Nodes to the WebLogic Node Group
- Task 7: Deploy the WebLogic SPI Templates
- Task 8: Completing Configuration
- Task 9: Verify the WebLogic SPI Configuration

Task 1: Assign WLSSPI-Messages Template to the Managed Node

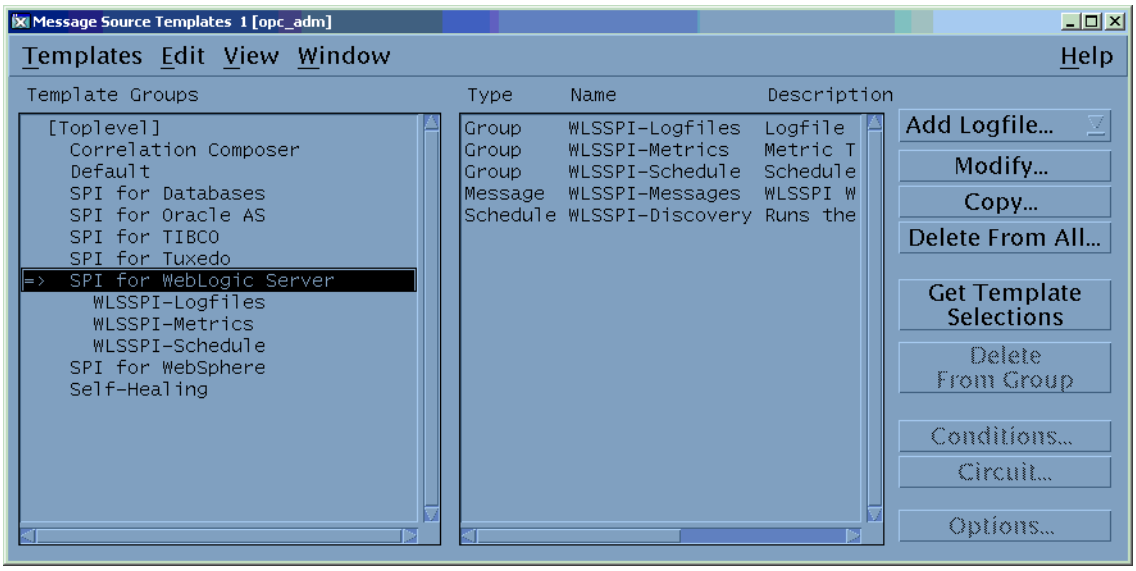
1. Open the Node Bank window and select the managed nodes.
2. From the Actions menu, select **Agents** → **Assign Templates**. The Define Configuration window opens.



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



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



5 In the Template Groups pane, select the **SPI for WebLogic Server** template group and in the right pane, select the **WLSSPI-Messages** template.

6 In the Add Configuration window, click **Get Template Selections**. The WLSSPI-Messages template appears in the right pane.

7 Click **OK**.

Task 2: Distribute Templates, Actions, Monitors, Commands

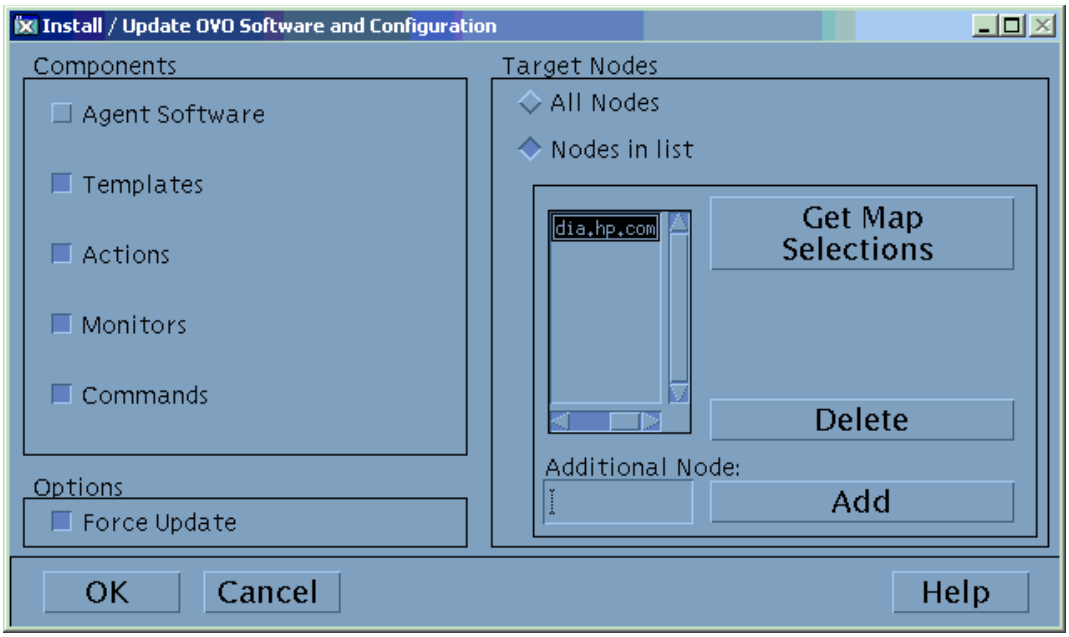
1 Select the nodes on which you want to install the WebLogic SPI.

2 Open the Node Bank window and select **Actions → Agents → Install/Update SW & Config...**. The Install/Update OVO Software and Configuration window opens.

3 Select the following component check boxes:

- Templates

- Actions
- Monitors
- Commands



4 Select the **Force Update** check box.

5 Select the **Nodes in list** radio button.

6 After the WebLogic SPI is installed on the selected managed nodes, the following message appears in the message browser for each managed node:

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

Task 3: Launch Discover WebLogic

Launch the Discovery application on one managed node at a time.

If an instance of WebLogic Server has a server login name and password different from the default login and password, before launching the discovery tool you must explicitly configure the login details for that server using the configuration editor.

1 At the HPOM console, double-click OVO Node Bank. The OVO Node Bank window opens.

2 From the Window menu, select **Application Bank**. The OVO Application Bank opens in a new window.

3 Double-click **WLSSPI**. The Application Group: WebLogic SPI window opens.

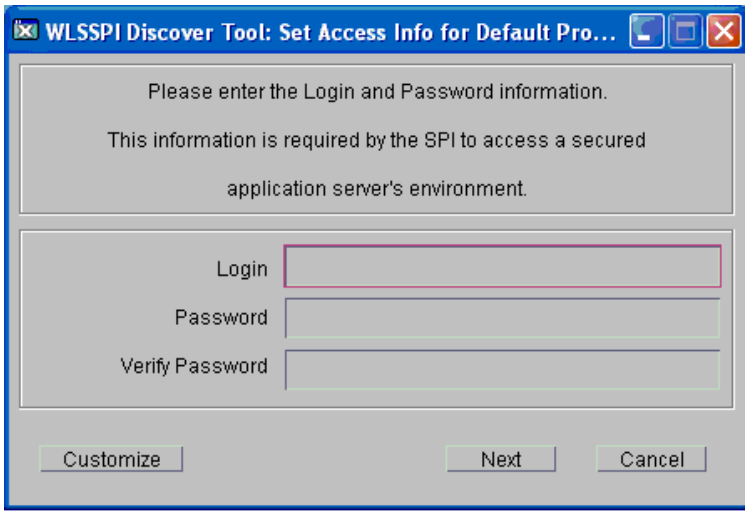
4 Double-click **WLSSPI Admin**. The Application Group: WLSSPI Admin window opens. All the WLSSPI Admin applications appear in this window.

5 Select a node from the OVO Node Bank window and double-click **Discover WebLogic** (If the above does not appear as described, select **Map** → **Reload**.) The Introduction window opens. This window contains brief information about the Discovery application.

6 Click **Next**. A second Introduction window opens. This window displays information about the properties that might be required for the discovery process to work.

7 Click **Next**. If you already set the LOGIN and PASSWORD properties, the configuration editor opens. To set additional properties, see Task 4: Set Additional Properties on page 47.

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



8 Set the same LOGIN and PASSWORD properties as configured in the WebLogic login and password in Task 2: Configure a WebLogic Server User on page 41. You must set the LOGIN and PASSWORD properties even if you are using the default login/password or the login/password configured during the WebLogic Server installation..

The LOGIN and PASSWORD properties set in this window are used as the default WebLogic 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 WebLogic login and password are used by the WebLogic SPI to access all WebLogic Administration Servers. For more information about the configuration structure, see Structure on page 155.

Setting LOGIN and PASSWORD for Different Setups

You can set the LOGIN and PASSWORD for different setups in the following ways:

- If the WebLogic Administration Server login and password are the same for all instances of WebLogic on all HPOM managed nodes, follow these steps:
  a Set the LOGIN and PASSWORD properties in the Set Access Info for Default Properties window.
  b Set the additional properties required by the discovery process. See Task 4: Set Additional Properties on page 47.
- If the WebLogic Administration Server login and password are different for each managed node but are similar for all instances of the WebLogic Administration Server on the managed nodes, follow these steps:
  a Customize the the WebLogic SPI configuration by setting the LOGIN and PASSWORD properties at the NODE level (for more information about the configuration structure, see Structure on page 155)
  b In the Set Access Info for Default Properties window, set the most commonly used WebLogic login and password as LOGIN and PASSWORD properties.

c Click **Customize**. The configuration editor opens. Set the LOGIN and PASSWORD properties at the NODE level. For more information about using the configuration editor, see Appendix B, The Configuration.

d Set the additional properties required by the discovery process. See Task 4: Set Additional Properties on page 47.

- If the WebLogic Administration Server login and password are different for each managed node and they are also different for the instances of the WebLogic Administration Server on a managed node, follow these steps:

  a Customize the WebLogic SPI configuration by setting the LOGIN, PASSWORD, NAME, and PORT properties at the server-specific level (for more information about the configuration structure, see Appendix B, The Configuration):

  a In the Set Access Info for Default Properties window, set the most commonly used WebLogic login and password as LOGIN and PASSWORD properties.

  b Click **Customize**. The configuration editor opens. Set the LOGIN, PASSWORD, NAME, and PORT properties at the server-specific level. For more information about using the configuration editor, see Appendix B, The Configuration.

  c Set the additional properties required by the discovery process. See Task 4: Set Additional Properties on page 47.

Task 4: Set Additional Properties

The LOGIN and PASSWORD properties are the basic properties needed by the discovery process. However, depending on your environment, you might need to provide additional configuration information.

You can set the following properties (for more information about these properties, see Configuration Properties on page 166):

- ADDRESS– The domain name or IP address where the WebLogic Server is listening. You must set this property if the WebLogic Server is configured to a virtual IP address.
- ADMIN_PORTS– A list of the port numbers of the WebLogic Admin servers. You must set this property if the domain configuration file (`config.xml`) is not located in the following default directories:

  — <*BEA_Home_DIR*>`/user_projects/`<*WebLogic_Domain*>`/` (WebLogic 7.0 or WebLogic 7.0 SP1)

  — <*BEA_Home_DIR*>`/user_projects/domains/`<*WebLogic_Domain*>`/` (WebLogic 7.0 SP2 or higher)

  In this instance, <*WebLogic_Install_Dir*> is the directory where the WebLogic Server is installed, <*BEA_Home_Dir*> is the directory that contains the `registry.xml` file, and <*WebLogic_Domain*> is the WebLogic domain name.
- HOME_LIST– A list of directories where the WebLogic Server is installed. You must set this property if the BEA `registry.xml` file is not accurate or cannot be found (You can face this problem if you do not use BEA's installation scripts to install the WebLogic Server software and Service Packs).

- JAVA_HOME– The default directory where Java is installed. You must set this property if Java is installed on more than one directory or if you are using your own Java.

  When you launch the Discover WebLogic tool, JAVA_HOME takes the default value. If you specified a different value for JAVA_HOME for any instance of WebLogic Server, you must explicitly set that value for JAVA_HOME using the configuration editor. For more information about the JAVA_HOME property, see Configuration Properties on page 166.

- NODE_NAMES–You must set this property if a remote WebLogic Server is listening on a virtual IP address. If you do not set this property, the WebLogic Server is not discovered.
- EXCLUDE_SAMPLES– You can set this property to 'true', at the default properties level, to exclude the WebLogic Server sample programs from the discovery process. This will reduce the amount of time it takes for the discovery process to run.
- PROTOCOL– You can set this property to specify if the application server port is using SSL or non-SSL. You *must* set this property if you are using SSL on the application server port. Valid values for this property are t3 (non-SSL) and t3s (SSL). For more information, see Table 1.

Setting Additional Properties

1. In the configuration editor, set the properties. For information about setting properties using the configuration editor, see Appendix B, The Configuration.
2. Click **Next** to save changes and exit the editor. The Confirm Operation window opens.
3. Verify the nodes on which the operation is to be performed and click **OK**.

Wait for the discovery process to complete before going to the next task. The discovery process could take several minutes to complete.

Task 5: Verify the Discovery Process

Depending on the number of managed nodes in your environment, verification could take several minutes to complete.

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

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

   If the discovery is not successful, the following message appears in the application window:

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

   For information on troubleshooting the discovery process see Troubleshooting the Discovery Process on page 106.

2. Verify that the following message appears in the message browser for each managed node:

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

   Depending on the number of managed nodes in your environment, it could take several minutes for these messages to display for all managed nodes.

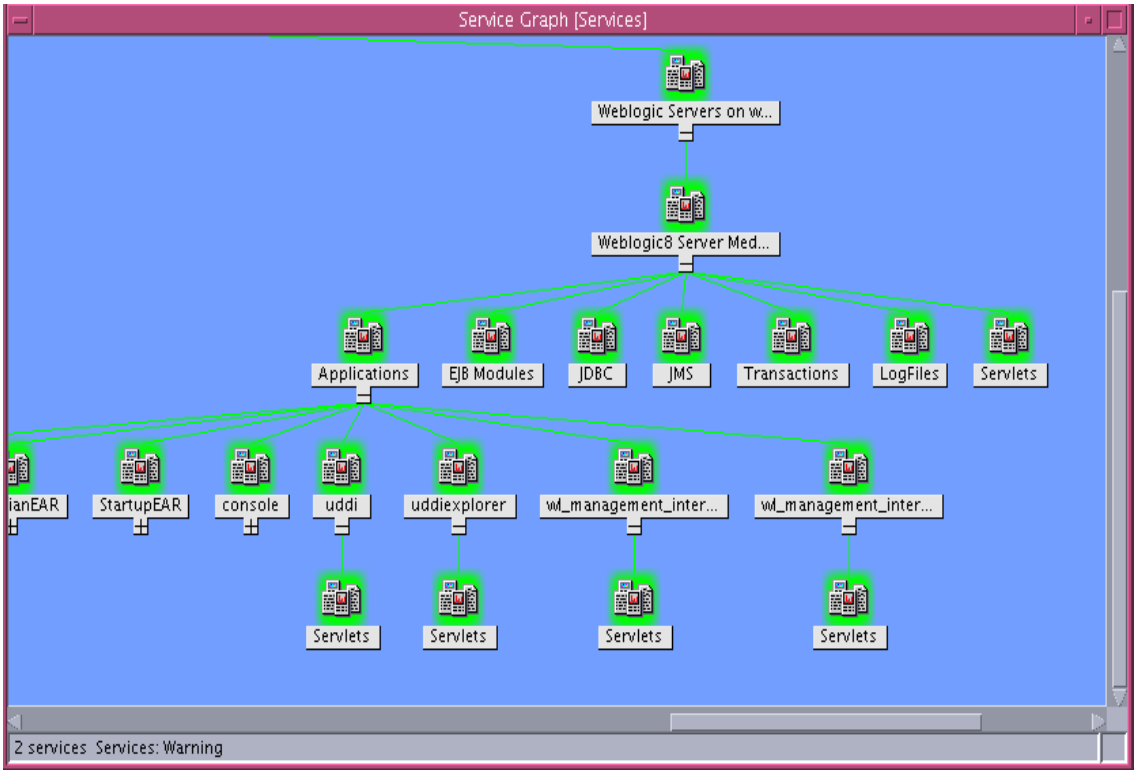
3. If Service Navigator is running, select **File → Reload Configurations**.

In the Service Map, open the Application node and look for the WebLogic service.

You can view the Service Map using the Java GUI.

Figure 3 shows a snapshot of the Service Map as it appears after successful discovery. Using the Service Map, you can find out the application that has a problem (if any). The lines in the Service Map are color coded to show various levels of severity. For example, red lines show that the application has critical problems.

Figure 3 Service Map



4 Launch the **Configure WLSSPI** application to verify the properties set by the discovery process. For more information about the configuration editor, see Configure WLSSPI on page 184.

Task 6: Add Nodes to the WebLogic Node Group

The WebLogic SPI automatically creates the WebLogic node group with preassigned template groups. To place all nodes running WebLogic Server in this node group, follow these steps:

1 From the HPOM console, open the Node Group Bank and the Node Bank window to view the WebLogic node group and the managed nodes side-by-side.

2 Drag and drop managed nodes on which WebLogic Server is running into the WebLogic node group.

Task 7: Deploy the WebLogic SPI Templates

1 Open the Node Group Bank window and select the WebLogic node group.

2 Select **Actions** → **Agents** → **Install/Update SW & Config**. The Install/Update OVO Software and Configuration window opens.

3 In the Target Nodes section, select the **Nodes in List Requiring Update** radio button.

4 Select the **Templates** and **Force Update** check boxes.

5 Click **OK**.

The following message must appear in the message browser:

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

After the templates are deployed, the monitors can now begin running according to their specific collection interval.

For information on integrating WLS-SPI with Reporter for generating WebLogic Server reports that show consolidated information, see Chapter 5, Integrating HP Reporting and Graphing Products with the WebLogic SPI.

Task 8: Completing Configuration

To complete the configuration update the configuration information on the management server and managed nodes, do one of the following:

- Wait for the automatic configuration template to run (it could take 10 minutes).
- Launch the Configure WLSSPI application (this application updates the configuration information on the management server and managed nodes). For more information about Configure WLSSPI application see Configure WLSSPI on page 184.

Task 9: Verify the WebLogic SPI Configuration

Launch the Verify application to verify that the WebLogic SPI is properly installed and configure. For more information about the Verify application, see Verify on page 189.

1 Open the Node Group Bank window and select the WebLogic node group.

2 Open the **Application Bank** window.

3 Select **WLSSPI** → **WLSSPI Admin** and double-click **Verify**.

Additional WebLogic SPI Configuration

Based on your WebLogic Server configuration and application needs, you must finish the WebLogic SPI configuration by setting additional configuration properties and installing and configuring additional components.

Conditional Properties

You might have to set one or more of the following conditional properties (these properties are not automatically discovered by the discovery process). For more information about the properties, see Configuration Properties on page 166.

Table 1 Conditional Properties

Condition	Property to Set
Running WebLogic Server version 7.x, 8.1, 9.x, or 10.0.	VERSION
WebLogic Servers on a system share the same name. The discovery process automatically sets the ALIAS property, but you might want to edit this value as this is the name used in messages, reports, and graphs.	ALIAS
Start or stop a WebLogic Server using the Start WebLogic or Stop WebLogic application from the HPOM console.	START_CMD, STOP_CMD, and USER
Start the WebLogic administration console using the Start WLS Console application from the HPOM console.	ADMIN_HOST and ADMIN_PORTS
Utilize MBean information in the JMX Metric Builder application to create UDMs.	COLLECT_METADATA
Use the View Graphs application from the HPOM console (HP Performance Manager must be installed).	GRAPH_URL
A WebLogic Server is configured to a virtual IP address, is on a remote node, or is not using the primary IP address of that node.	ADDRESS
The log file's absolute pathname is not configured in WebLogic.	LOGFILE

Setting Conditional Properties

1. In the HPOM console, open the Node Bank window and select the node.
2. From the Window menu, select **Application Bank**. The Application Bank window opens.
3. Select **WLSSPI → WLSSPI Admin → Configure WLSSPI**. (If it does not appear as described, select **Map → Reload**.) The Introduction window opens. This window contains basic information about the Discovery application.
4. Click **Next**. A second Introduction window opens. This window contains information about the properties required for the discovery process to work.
5. Click **Next**. The configuration editor opens.
6. Set the properties using the configuration editor. For more information about using the configuration editor see Appendix B, The Configuration.

7 Click **Next**. The Confirm Operation window opens.

8 Click **OK** to save the configuration changes on the selected managed nodes.

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

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**). See the release notes for more information about Sudo installation.

1 Switch the HTTPS agent to a non-root user. For more information, see the *HP Operations HTTPS Agent Concepts and Configuration Guide for the HP-UX and Sun Solaris Management Server Operating Systems*.

2 On the managed node, set the OV_SUDO variable and log on as **root** or HP Operations agent user. Follow these steps:

a Run the following command to stop all HP Operations agents:

opcagt -kill

b Run the following command to set the OV_SUDO variable:

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

In this instance, <*sudo_program*> is the location (including the absolute pathname) where sudo is installed (for example, `/usr/local/bin/sudo`).

c Run the following command to start the HP Operations agents:

opcagt -start

d Run the following command to verify that OV_SUDO is set:

ovdeploy -cmd set | grep SUDO

The following line appears:

`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 HPOM 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 **WLSSPI → WLSSPI Admin → Init Non-Root**.

4 Edit the `/etc/sudoers` file using the visudo editor (installed with Sudo):

a On the managed node, log on as **root**.

b Open the /<*SPI_Config_DIR*>`/wasspi_wls_sudoers` file

where <*SPI_Config_DIR*> is the location of the SPI's configuration files on a managed node. For more information see Managed Node File Locations on page 153.

c Run the `visudo` command in a seperate window (for example, type: **/usr/local/sbin/visudo**).

d Copy the following lines from the `wasspi_wls_sudoers` file and append the lines to the `sudoers` file:

```
Cmnd_Alias WLSSPI_ADMN = /opt/OV/nonOV/perl/a/bin/perl -S
wasspi_wls_admin *
Cmnd_Alias WLSSPI_COLL = /opt/OV/nonOV/perl/a/bin/perl -S wasspi_wls_ca
*
Cmnd_Alias WLSSPI_DISC = /opt/OV/nonOV/perl/a/bin/perl
wasspi_wls_discovery.pl
Cmnd_Alias WLSSPI_LFEN = /opt/OV/nonOV/perl/a/bin/perl -S wasspi_wls_le
*
Cmnd_Alias WLSSPI_SHSC = /opt/OV/nonOV/perl/a/bin/perl -S
shs_collector.pl *

Cmnd_Alias WLSSPI_ADMNP = /opt/OV/nonOV/perl/a/bin/perl -S \
/var/opt/OV/bin/instrumentation/wasspi_wls_admin *
Cmnd_Alias WLSSPI_COLLP = /opt/OV/nonOV/perl/a/bin/perl -S \
/var/opt/OV/bin/instrumentation/wasspi_wls_ca *
Cmnd_Alias WLSSPI_DISCP = /opt/OV/nonOV/perl/a/bin/perl \
/var/opt/OV/bin/instrumentation/wasspi_wls_discovery.pl
Cmnd_Alias WLSSPI_LFENP = /opt/OV/nonOV/perl/a/bin/perl -S \
/var/opt/OV/bin/instrumentation/wasspi_wls_le *
Cmnd_Alias WLSSPI_SHSCP = /opt/OV/nonOV/perl/a/bin/perl -S \
/var/opt/OV/bin/instrumentation/shs_collector.pl *
<OV_Agent_username> <nodename> = NOPASSWD: WLSSPI_ADMN, WLSSPI_COLL, \
WLSSPI_DISC, WLSSPI_LFEN, WLSSPI_SHSC, WLSSPI_ADMNP, WLSSPI_COLLP, \
WLSSPI_DISCP, WLSSPI_LFENP, WLSSPI_SHSCP
```

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

e Type **wq** to save the file and exit the visudo editor.

Repeat steps 3 and 4 every time the agent user is switched.

WebLogic 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 the WebLogic SPI to accommodate cluster environments where failovers allow uninterrupted WLS availability. WebLogic 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 the WebLogic SPI in high availability environments are:

- Management Server: HP-UX
- Node: HP-UX MCSG cluster, Veritas cluster (applicable only for WebLogic server version 10.0)
- OVO 8.x HTTPS Agent version (for details, see the Agent cluster support matrix)

Configuring the WebLogic SPI for High Availability Environments

Complete the following tasks:

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

Task 1: Create the WebLogic SPI monitoring configuration file

The WebLogic 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, see *HP Operations for UNIX HTTPS Agent Concepts and Configuration Guide*.

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

To create this clustered application configuration file for your WLS 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_wls_perl -S wasspi_wls_clusterSvrApp -opt
      startMonitor $instance</StartCommand>
      <StopCommand>wasspi_wls_perl -S wasspi_wls_clusterSvrApp -opt
      stopMonitor $instance</StopCommand>
```

```
    </Application>
</APMApplicationConfiguration>
```

2 Enter the namespace_name 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 WLS server running on the node, you must mention "All" under the `<template>` tag.

Sample <appl_name>.apm.xml file

```
<?xml version="1.0"?>

<APMApplicationConfiguration>

    <Application>
        <Name>namespace_name</Name>
        <Template>All</Template>
        <StartCommand>wasspi_wls_perl -S wasspi_wls_clusterSvrApp -opt
        startMonitor $instance</StartCommand>
        <StopCommand>wasspi_wls_perl -S wasspi_wls_clusterSvrApp -opt
        stopMonitor $instance</StopCommand>
    </Application>

</APMApplicationConfiguration>
```

`<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 ClAw 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 the WebLogic SPI, enables you to associate the WebLogic 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 the WebLogic SPI

1. Launch the Discovery application with virtual node as the target. For details about launching the discovery application, see Task 3: Launch Discover WebLogic on page 45.
2. Launch the Configure WLSSPI application with the virtual node as 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 Discovery 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 due to failover.

Additional Discovery and Configuration Scenarios

This section includes examples about some of the common scenarios.

Use Case 1: Administration Port Turned On (WebLogic Servers are Running in HTTPS Mode)

If the Administration Port is enabled for the WebLogic Servers, there are two discovery scenarios:

Scenario 1: The WebLogic admin server is running on t3s (HTTPS) and the WebLogic Servers associated with it are running on t3 (HTTP)

Discovery

1. Launch Discover WebLogic. See Task 3: Launch Discover WebLogic on page 45.
2. In the Set Access Info for Default Properties set the BEA WebLogic LOGIN and PASSWORD properties (this window will appear *only if* you have not set the LOGIN and PASSWORD earlier).
3. In the configuration editor, set the ADMIN_PORTS property. ADMIN_PORTS is the SSL port on which the application server is listening.

   If the WebLogic Admin server is running on a virtual IP (in a non-clustered environment), you must specify the virtual IP address when setting the ADMIN_PORTS property. Set ADMIN_PORTS value to <*ip address*>:port. For information about configuration in clustered environment see WebLogic SPI in High Availability Environments on page 54
4. Set the PROTOCOL property to **t3s** (t3s is the default value for PROTOCOL). PROTOCOL specifies if the application server port is using SSL or non-SSL.
5. If required, set the PASSPHRASE and KEYSTORE properties. Click **Next** to run discovery on the selected nodes.

   KEYSTORE is the path to the SSL trust keystore file.

   PASSPHRASE is the password that you set for the KEYSTORE in the SSL environment of the WebLogic Admin server.

   For more information about setting the properties see Configuration Properties on page 166.

   The properties KEYSTORE, PASSPHRASE, and PROTOCOL can be set at any level (global, group, node, or server). PROTOCOL is required if you use SSL. You must set KEYSTORE and PASSPHRASE only if you use a keystore and passphrase in your SSL environment.

Configuration

After Discovery is successful:

1. Launch the Configure WLSSPI application (For instructions on launching this application see Configure WLSSPI on page 184).

2 In the configuration editor set the value of the PROTOCOL property to t3 for the WebLogic Servers.

> If you do not change the value of PROTOCOL property for the WebLogic Servers to t3, PROTOCOL will take up the default value (t3s) set for the Admin Server. For more information about configuration property precedence see Configuration Properties on page 166.

3 Create a Monitor user in BEA under the active Security Realm.

4 Set the SERVER_LOGIN and SERVER_PASSWORD properties similar to the credentials set for the Monitor user.

5 Repeat steps 1throgh 4 for every instance of WebLogic Server.

Scenario 2: The WebLogic admin server as well as the WebLogic Servers associated with it are running on t3s (HTTPS):

1 Run Discover WebLogic and set the properties as mentioned in Scenario 1.

2 After Discovery is successful.

a Launch the Configure WLSSPI application (For instructions on launching this application see Configure WLSSPI on page 184).

b Set the PROTOCOL property to the default value t3s.

c Create a Monitor user in BEA under the active Security Realm.

d Set the SERVER_LOGIN and SERVER_PASSWORD properties similar to the credentials set for the Monitor user.

e Repeat steps a through d for every instance of WebLogic Server.

Use Case 2: Administration Port Not Turned On (WebLogic Application Server is Running on a Virtual IP)

If the WebLogic Server is running on a virtual IP and the Administration Port is not turned on, follow these steps to run discovery:

1 Launch Discover WebLogic. See Task 3: Launch Discover WebLogic on page 45.

2 In the Set Access Info for Default Properties set the BEA WebLogic LOGIN and PASSWORD properties (this window will appear *only if* you have not set the LOGIN and PASSWORD earlier).

3 In the configuration editor, set the NODE_NAMES and ADDRESS properties.

4 Click **Next**. The Confirm Operation window opens.

Click **OK** to run the discovery on the selected managed nodes.

> For information about configuration in clustered environment see WebLogic SPI in High Availability Environments on page 54.

4 Customizing the WebLogic SPI

Introduction

This chapter discusses the following topics:

- Basic Template Customizations
- Advanced Template Customizations
- Restoring the Default WebLogic SPI Templates
- Viewing Text-based Reports
- Monitoring WebLogic on Unsupported Platforms
- Check the WebLogic SPI Nodes for License Count

For information about creating UDM, see the *HP Operations Smart Plug-in for User Defined Metrics User Guide*.

Basic Template Customizations

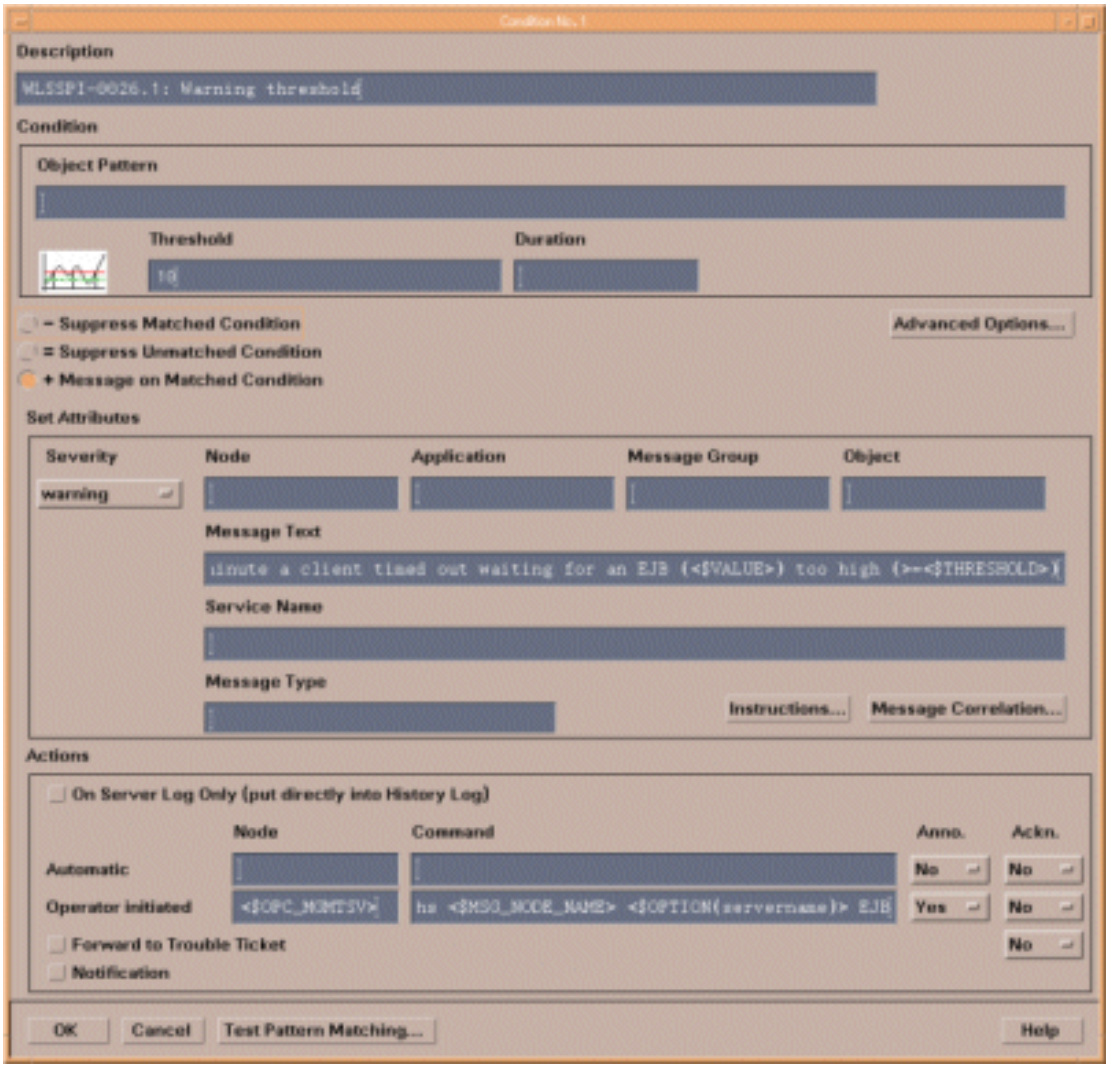
Based on the needs of your environment you might want to customize some of the default WebLogic SPI templates. Basic customizations, such as changing a threshold (by modifying a metrics template) or modifying alarm generation, are covered in this section.

Make copies of the default templates before you start customizing the templates.

Modifying Metrics Templates

Many metric attributes can be modified for all monitored instances of WebLogic Server. Follow these steps:

1. From the HPOM console, open the Message Source Templates window.
2. Click **SPI for WebLogic Server** template group. A list of the WebLogic SPI templates appears in the right pane.
3. Double-click the **WLSSPI-Metrics** template group.
4. Select a metric and click **Conditions**. The Message and Suppress Conditions window opens.
5. Select the condition you want to modify (there is usually only one) and click **Modify**. The Condition window opens.



6 Modify the attributes. See Table 2 for a list of attributes that you can modify.

7 Click **OK**.

8 Deploy the modified template as described in Task 7: Deploy the WebLogic SPI Templates on page 49.

Table 2 Metric Attributes

Attributes	Description
Threshold	The value which, when exceeded, signifies a problem either about to occur or already occurring.
Duration	The length of time for which the established threshold can be exceeded by the incoming data values for a metric before an alarm is generated.
Severity	The level you can assign to a message based on its importance in your environment. Click **Severity** in the Conditions window to select the desired severity setting.

Table 2 Metric Attributes

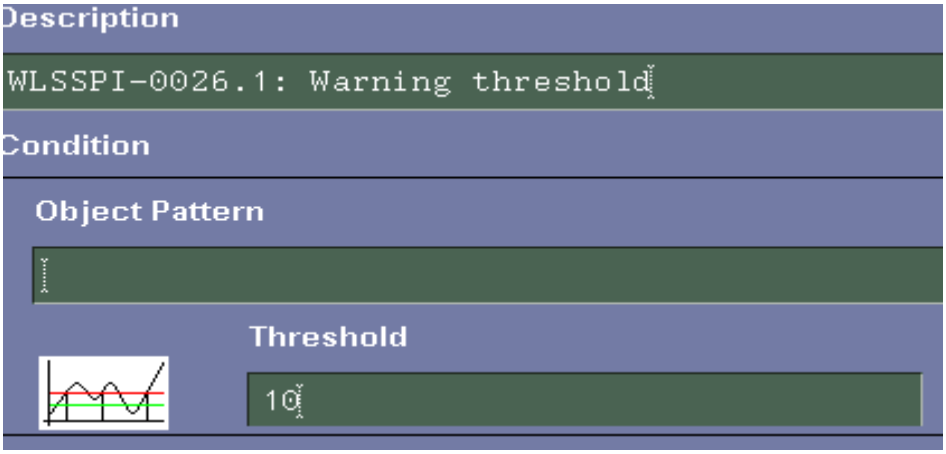
Attributes	Description
Message Text	A structured, readable piece of information about the status of a managed object, an event related to a managed object, or a problem with a managed object. **Note:** Do *not* modify any of the parameters—surrounded by <> brackets, beginning with $—in a message.
Actions	The response to a message. This response is assigned by a message source template or condition and can be automatic or operator-initiated. You need to set actions if you want to view reports, view Performance Manager graphs, or add custom programs.
Automatic action	An action triggered by an incoming event or message. No operator intervention is involved. The automatic action delivered with the WebLogic SPI generates a snapshot report that shows the data values at the time the action was triggered from an exceeded threshold. You can view the report in the message Annotations.
Operator-initiated action	An action used to take corrective or preventive actions in response to a given message. Unlike automatic actions, these actions are operator initiated. The operator-initiated action delivered with the WebLogic SPI enables you to view a graph of the metric whose exceeded threshold generated the message along with other related metric values (to view the graph, click **Perform Action** within a message's details window).

Figure 4 illustrates that a threshold value of 10 is set for metric WLSSPI-0026. Metric WLSSPI-0026 monitors the total number of times (per minute) clients must wait for an available EJB (enterprise java bean).

The severity level of this metric is Warning.

The threshold value set for this metric is 10. If the total number of times (per minute) that the clients wait for an EJB increases over 10, an alarm is generated (a warning message).

Figure 4 Threshold value for WLSSPI-0026



Modifying Alarm Generation

You can set the number of times an alarm is generated by modifying the Message Generation setting in the Modify Threshold Monitor window.

To modify Message Generation, follow these steps:

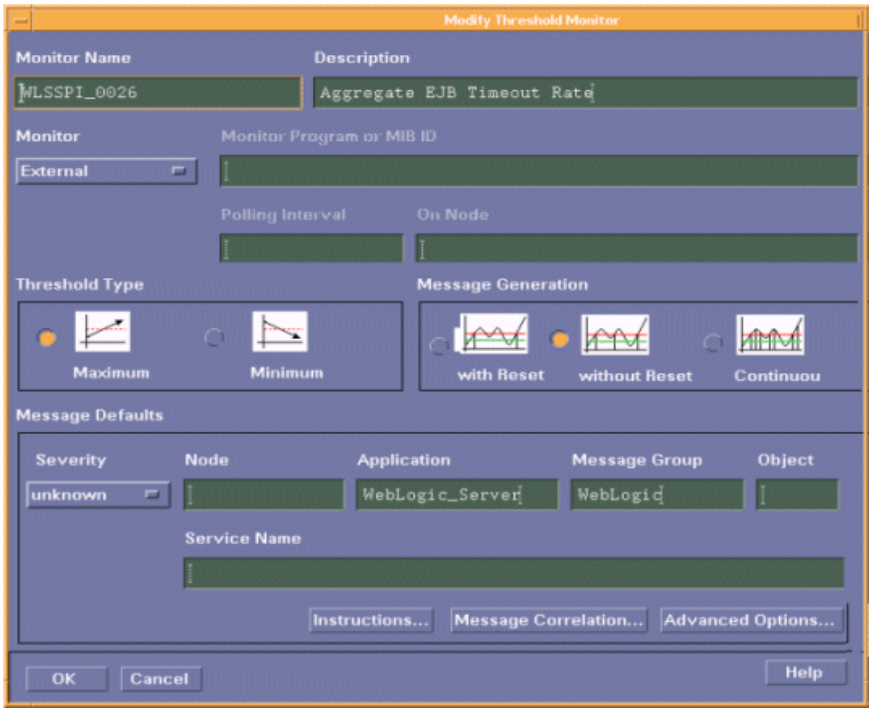
1 Open the Message Source Templates window.

2 Select the **SPI for WebLogic Server** template group.

3 Select the **WLSSPI-Metrics** template group from the right pane.

4 Select a template.

5 Click **Modify**. The Modify Threshold Monitor window opens.



6 Select one of the following Message Generation settings:

- **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. Alarms are generated again when the threshold is exceeded.
- **Continuously**: Messages are sent, or alerts are generated, each time the metric values are collected and the threshold is exceeded.

7 Click **OK**.

8 Deploy the modified templates as described in Task 7: Deploy the WebLogic SPI Templates on page 49.

Advanced Template Customizations

Template modifications include making copies of default template groups to customize a few settings and deleting metric groups within a template's command line. All modifications described require some advanced knowledge of the WebLogic SPI metrics.

Choosing Metrics to Customize

Determine which metrics you want to customize and what templates within the group you want to use. Then, follow these steps:

1. Open the **Message Source Template** window.
2. Select SPI for WebLogic Server from the Template Groups pane. A list of template appear in the right pane.
3. Select the template group you want to use and click **Copy...**The Copy Template Group window opens.
4. Rename the group and click **OK** to save.
5. Within the renamed template group, copy each original template and rename it.
6. Delete the original templates within the renamed template group.
7. Customize the renamed templates within the group as necessary.

Creating a new template group enables you to keep custom templates separate from the original default templates.

Using the WebLogic SPI Collector/Analyzer Command with Parameters

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

Using the WebLogic Server Command Parameters

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

Parameter	Function	Syntax
`-e` (exclude)	Enables you to exclude specific servers. This option must not be used with the `-i` option.	`-e` *<server_name>* Example: `-e server2,server4`
`-i` (include)	Enables you to list specific servers to monitor. This option must not be used with the `-e` option.	`-i` *<server_name>* Example: `-i server1,server3`
`-m` (metric)	Specifies the metric numbers or number ranges on which to collect data.	`-m` *<metric_number|metric_number_range>* Example: `-m 1,3-5,9-11,15`

Parameter	Function	Syntax
-matchver (match version)	Specifies the specific WebLogic Server version to monitor. This option must not be used with the -minver nor -maxver options. If no matching versions are found, the command does not execute.	-matchver <*version_number*> Example: -matchver 7
-maxver (maximum version)	Specifies the highest WebLogic Server version to monitor. Use with -minver to specify a range of versions. If no versions are found, the command does not execute.	-maxver <*version_number*> Example: -maxver 10
-minver (minimum version)	Specifies the lowest WebLogic 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 7
-r (report)	Generates an ASCII report for the specified metric(s).	-r
-t (tag)	Creates a new template group by adding a prefix to an existing collector template and specifying the metric number(s).	-t <*prefix*>- Example: wasspi_wls_ca -t DEV-
-x	Enables you to specify a property/ value as follows:	-x <*property*>=<*property_value*>
	alarm: When off, overrides any alarming condition as set up in the metric monitor template.	-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
	graph: When off, prevents graphing functions.	-x graph=off
	report: When off, prevents reporting functions.	-x report=off

Syntax Examples

- To collect specific data on all configured servers:

  ```
  wasspi_wls_ca -m 10-14,25,26
  ```

- To collect data from specific servers only:

  ```
  wasspi_wls_ca -m 245,246,26 -i server1,server2
  ```

- To not collect data from specific servers:

```
wasspi_wls_ca -m 220-225 -e server1,server2
```

Using the JMX 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 sub-element in a UDM file.

Table 3 JMX Command Parameters

Parameter	Function	Syntax
`-a` (action) **Required**	Indicates a JMX action is performed.	`-a`
`-i` (include)	Specifies servers on which to perform the JMX actions. If this parameter is not specified, the JMX actions are performed on all configured servers.	`-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 must not be used with the `-mbean` nor `-xml` options.	`-m` <*metric_id*> Example: `-m TestUDM_1000`

Table 3 JMX Command Parameters

Parameter	Function	Syntax
-mbean	Performs a JMX call on the specified MBeans. This option must not be used with the -m nor -xml options.	-mbean <*objectname*> <*action*> Example: -mbean *:*, Type=JMSServerConfig -get MessagesMaximum\
	In the above syntax, <*action*> (a JMX call) is one of the following:	
	-get	Returns the value of the a specified attribute. Syntax: -mbean <*objectname*> -get <*attribute*> Example: -get MessagesMaximum
	-invoke [-type]	Executes an MBean operation with the specified parameters. An operation might not require parameters (therefore, -type is not specified). A type parameter must be specified for operations which accept parameters. -type supports operation overloading. Syntax: -mbean <*objectname*> -invoke <*operation*> [-type <*parameter_type*> <*parameter_value*>]... where <*parameter_type*> is one of the following: short, int, long, double, float, boolean, java.lang.Short, java.lang.Integer, java.lang.Long, java.lang.Double, java.lang.Float, java.lang.Boolean, and java.lang.String. Example: -invoke stagingEnabled -type java.lang.String examplesServer
	-set	Assigns the specified value to the specified attribute. Syntax: -mbean <*objectname*> -set <*attribute*> <*value*> Example: -set MessagesMaximum 250000
-o	(object) Specifies an MBean instance.	Syntax: -o <*mbean_instance*> Example: -o examplesJMSServer
-xml	Specifies the XML file that contains the JMX action(s) to perform. This option must not be used with the -m nor -mbean options.	Syntax: -xml <*filename*> Example: -xml myJMXActions.xml

Examples

- Set the maximum threads for an alarming WebLogic execute queue to 50 (where <*$OPTION(instancename)*> specifies an alarming instance):

```
wasspi_wls_perl -S wasspi_wls_ca -a
-mbean "PetStore:*,Type=ExecuteQueueConfig"
-set ThreadsMaximum 50 -o <$OPTION(instancename)>
```

- Set the MessagesMaximum attribute to 25000 on multiple MBean instances:

```
wasspi_wls_perl -S wasspi_wls_ca -a
-mbean *:*,Type=JMSServerConfig -set MessagesMaximum 250000 -i
examplesServer
```

- Set the MessagesMaximum attribute to 25000 on a specific MBean instance:

```
wasspi_wls_perl -S wasspi_wls_ca -a
-mbean *:*,Type=JMSServerConfig -set MessagesMaximum 250000 -i
examplesServer -o examplesJMSServer
```

- Invoke an operation on multiple MBean instances:

```
wasspi_wls_perl -S wasspi_wls_ca -a
-mbean *:*,Type=ApplicationConfig -invoke staged
-i examplesServer
```

- Get the MessagesMaximum attribute (after a set command, used to verify that the attribute was set):

```
wasspi_wls_perl -S wasspi_wls_ca -a
-mbean *:*,Type=JMSServerConfig -get MessagesMaximum
-i examplesServer
```

- Use the sample UDM TestUDM_1000 in the `wls_UDMMetrics-sample.xml` file:

```
wasspi_wls_perl -S wasspi_wls_ca -a -m TestUDM_1000 -i examplesServer
```

Changing the Collection Interval for All Scheduled Metrics

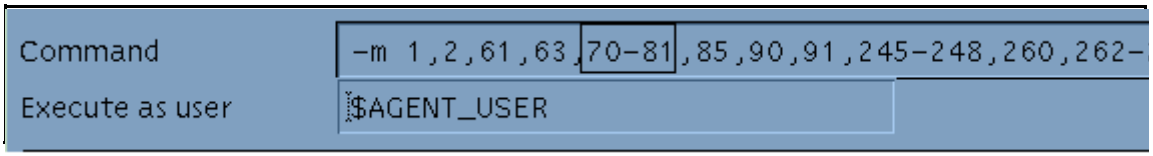
To change the collection interval for all scheduled metrics, change the Polling Interval in the appropriate collector template. For example, to change the collection of default metrics from 5 minutes to 10 minutes for the WLSSPI-05min collector template, follow these steps:

1. Select the Message Source Templates window.
2. Select the template group **SPI for WebLogic Server** and open **WLSSPI-Schedule**.
3. Select the collector template **WLSSPI-05min**.
4. Click **Modify...**. The Modify Schedule Action window opens.
5. Change the Schedule Action Name to **`WLSSPI-10min`**.
6. In the Minute box, change the polling interval from 5 minute to 10 minutes. For example, 0, 10, 20...
7. Distribute the new templates (described in Task 7: Deploy the WebLogic SPI Templates on page 49).

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. Delete all but the metrics you are changing. Set the new interval. Remove the metrics you changed from the original template.

For example, to change the collection interval to 10 minutes for metrics 70-81, follow these steps:



1. Open the **Message Source Templates** window.
2. Select the template group SPI for WebLogic Server and open WLSSPI-Schedule.
3. Select the template WLSSPI-05min.
4. Click **Copy...**. The Copy Schedule Action window opens.
5. Change Scheduled Action Name to **`WLSSPI-10min`**.
6. In the Command box (see figure above), delete all metrics after the `-m` except 70-81.
7. Change the Polling Interval to 10m.
8. Click **OK**.
9. In the WLSSPI-Schedule template group, select the WLSSPI-5min template.
10. Click Modify. The Modify Schedule Action window opens
11. Delete 70-81 from the Command box.
12. Re-distribute the modified templates as described in Task 7: Deploy the WebLogic SPI Templates on page 49.

Cutomize Threshold Values for Different Applications/EJB/Servlet/JDBC

In your environment some applications might be more critical than others, also, within an application some of the EJBs/Servlets/JDBC datasource might be critical, and others might not. You can set threshold values per application or per EJB/Servlet/JDBC datasource depending on their criticality.

To do so, you must copy the existing condition and modify it. Follow these steps:

1. Double-click to open the metric for customization (for example, WLSSPI-0012). The Message and Suppress Conditions window opens.
2. Select the desired condition and press the **Copy...** button to make a copy of the condition.
3. In the Object Pattern field, enter the following details (enter only the necessary fields, see Examples):

   <ServerName>:<ServerPort>:<NodeName>:<ApplicationName>:<EJBName/ServletName/JDBC DataSource>:<Instance Name>
4. In the Threshold column, change the threshold value.
5. Deploy the template to the corresponding node.

Before customizing the threshold value, you might want to see the list of applications/EJBs/ Servlets/JDBC datasource running on a server. For this you can use the following WebLogic SPI applications:

- View WebLogic Servers: This gives you details of all running application servers and the corresponding ports.
- View Deployed Apps: Gives a list of all applications deployed on a particular server.

Examples

The following examples illustrate how to enter details in the Object Pattern field:

- Example 1: To set threshold for the application MedrecEAR, and if the application name is unique across all the nodes, enter the following:

  <*>:<*>:<*>:MedrecEAR:<*>:<*>

- Example 2: To set the threshold for the application MedrecEAR that is available on node 1 and node 2, then to set the threshold only on node 1, enter the following:

  <*>:<*>:node1:MedrecEAR:<*>:<*>

- Example 3: To set the threshold for the Servlet- `FileServlet` under the application MedrecEAR, and FileServlet is unique across all the nodes, enter the following:

  <*>:<*>:<*>:MedrecEAR:FileServlet:<*>

Creating Custom, Tagged Templates

Another advanced customization option is to use the tag option (`-t` on the command line), which allows the collector or 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 WebLogic Server.

When multiple nodes are managed by a number of groups, this option enables 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 and re-work the collector template to pick up the tagged names, 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-WLSSPI_0012 (retaining the metric number, which must be used). The collector template would be named FIRST_CLIENT-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 monitor and collector templates. For example, if you are including CLIENT01 in the template names, include CLIENT01 within the new template group name as well.
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 WLSSPI-0001 could be called CLIENT01-WLSSPI_0001.
- The name you give the new collector monitor 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_wls_ca -m 16 -t CLIENT01-
  ```

4 Delete all original templates from the new group.

Template Variables

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

Name	Description
`instancename`	The instance for which the metric is being reported for multi-instance metrics. Example: `medRecServer_MedRecServer_wl_management_internal2_com.bea.wli.bpm.runtime.JwfServlet_20`
`map_port`	See `port`.
`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`

Restoring the Default WebLogic SPI Templates

When the WebLogic SPI templates are installed in HPOM, the commands given in the table below automatically upload the templates when `swinstall` is run. Any customized template settings you might have done for the previous installation are overwritten.

To restore the default SPI for BEA WebLogic Server template group you originally installed, delete all current templates first, run one of the commands in the following table (depending on the version of HPOM):

Scripts run by `swinstall`

HPOM Version	Scripts
>8.x	`/opt/OV/bin/OpC/opccfgupld -silent -replace -subentity /var/opt/OV/share/tmp/OpC_appl/wasspi/wls_set`

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

Viewing Text-based 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 form the server around the time that the alarm occurred.

Other templates have operator actions associated with them that enable you to generate a graph.

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

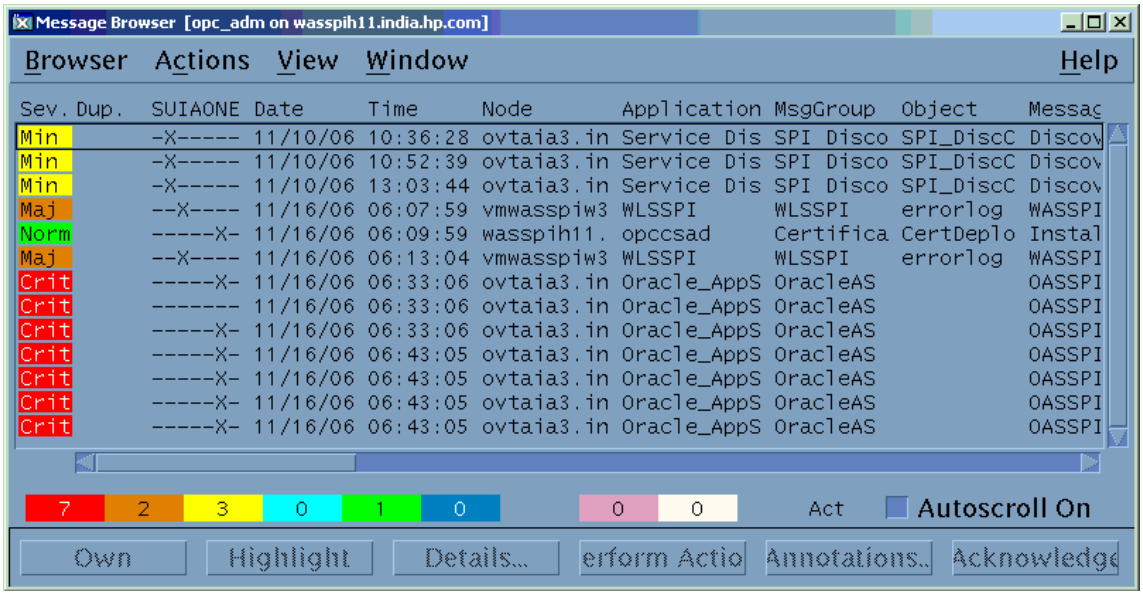
- To view message details, double-click a message in the HPOM message browser or right-click the message and select **Details**.
- To view reports, open both the Node Bank and Application Bank windows. Continue to open application windows **WLSSPI → WLSSPI Admin → Reports**. Select a node and drag it onto the WLSSPI metric report you need. These reports show all server data on a node.
- To view graphs, open both the Node Bank and Application Bank windows. Continue to open application windows **WLSSPI → WLSSPI Admin**. Drag a node onto the View Graphs application to launch your Web browser, which displays the graphing feature available in HP Performance Manager (which must be purchased separately).

Automatic Action Reports

Many metrics generate Automatic Action Reports. These reports are generated as soon as an alarm is triggered in HPOM. Automatic Action reports show the state of the system soon after the alarm occurs.

When an Automatic Action report is executed from HPOM, the server is queried for additional data. If you set your message browser to display the SUIAONE column, you will notice the letter “S” under the “A” column (see Figure 5) when a report is available in the Annotations area of the Message Details.

Figure 5 Message Browser



To View Automatic Action Reports

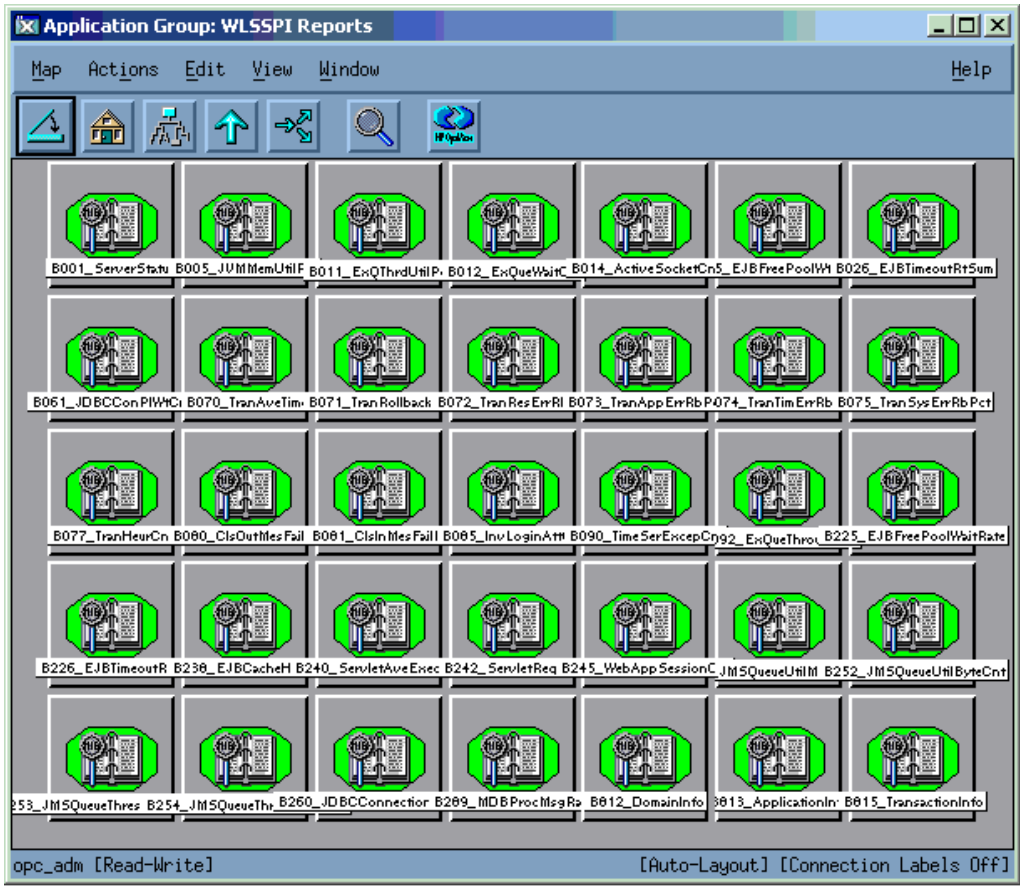
You can view Automatic Action reports in the Annotations window. Do one of the following:

- Select the message for which a report is and click **Annotations.** The Annotations window opens.
- Right-click a message and select Annotations. The Annotations window opens.

Automatic Action reports show data values on a single server. Column descriptions in the window provide more information.

Application Bank Reports

You can use Application Bank Reports to manually generate a report similar to an Automatic Action report. Application Bank reports run for all WebLogic Server instances configured on the managed node, in contrast to Automatic Action Reports, which are generated for a single WebLogic Server instance. The reports generated from the Application Bank reflect the current state of WebLogic Server on the managed node.



To Manually Generate a Report

Follow these steps:

1. At the HPOM console, double-click HPOM Node Bank. The HPOM Node Bank window opens.
2. From the Window menu, select **Application Bank**. The HPOM Application Bank window opens.
3. Double-click **WLSSPI.** The Application Group: WebLogic SPI window opens.
4. Double-click **WebLogic SPI Reports.** The Application Group: WebLogic SPI Reports window opens. All the WebLogic SPI Reports appear in this window.
5. Drag the managed node from the Node Bank window to the desired report in the Application Bank window.

Sample Reports

Two samples, one each of Automatic Action report and manually generated report (Application Bank report) are given below.

Automatic Action Report

Figure 6 shows the format of an automatically generated WebLogic SPI report.

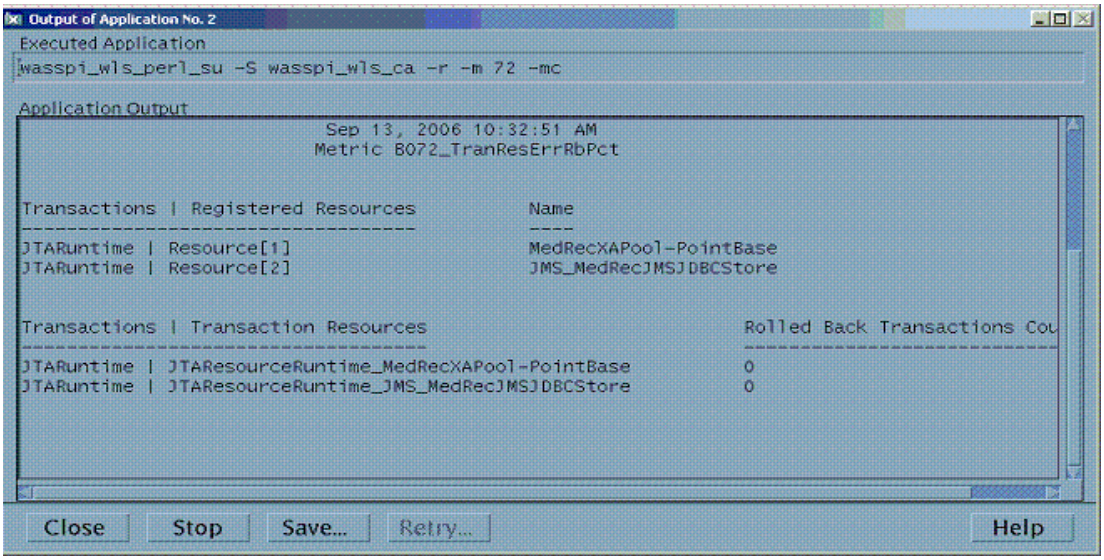
Figure 6 Report on metric B011

```
                        Report for Application Server_01
                            Oct 16, 2001 3:22:20 PM
                          Metric B011_ExQThrdUtilPct

Execute Queues                    Idle Threads    Waiting Requests
--------------                    ------------    ----------------
_weblogic_admin_html_queue         2              0
_default                          11              0
_weblogic_admin_rmi_queue         10              0


Execute Queues                     Longest Waiting Request
--------------                     -----------------------
_weblogic_admin_html_queue        Oct 16, 2001 3:22:20 PM
_default                          Oct 16, 2001 3:22:20 PM
_weblogic_admin_rmi_queue         Oct 16, 2001 3:22:20 PM

Execute Queues | Threads                          Current Request
-----------------------                           ---------------
__weblogic_admin_html_queue | ExecuteThread[1]    null
__weblogic_admin_html_queue | ExecuteThread[2]    null

Execute Queues | Threads                           Current Request
-----------------------                            --------------
default | ExecuteThread[1]                          null
default | ExecuteThread[2]                          null
default | ExecuteThread[3]                          null
default | ExecuteThread[4]                          null
default | ExecuteThread[5]                          null
default | ExecuteThread[6]                          null
default | ExecuteThread[7]                          null
default | ExecuteThread[8]                          null
default | ExecuteThread[9]                          null
default | ExecuteThread[10]                         null
default | ExecuteThread[11]              weblogic.rmi.internal.BasicExecuteRequest@f0c95
default | ExecuteThread[12]              Socket Reader Request
default | ExecuteThread[13]              Socket Reader Request
default | ExecuteThread[14]              Read Multicast Msg Fragment
```

Manually generated Report

Figure 7 shows the format of a manually generated WebLogic SPI report.

Figure 7 Manually Generated WebLogic SPI Report



Monitoring WebLogic on Unsupported Platforms

The WebLogic SPI supports monitoring WebLogic Servers installed on systems running HP-UX, Linux (Red Hat), Solaris, and Windows 2000. However, it is possible to configure the WebLogic SPI to monitor a WebLogic Server installed on systems running on unsupported platforms—systems referred 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 your environment meets the criteria described below, this section offers an example to get you started.

Requirements for Monitoring Remote Nodes (Running on Platforms Not Supported by the WebLogic SPI)

For a WebLogic Server installation on a system running on a platform other than HP-UX, Linux (Red Hat), Solaris, or Windows 2000, you can use the WebLogic 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 WebLogic SPI runs on at least one managed node on a supported platform: HP-UX, Solaris, or Windows 2000.
- (Optional, for logfile monitoring) The remote system runs on a platform supported by the HP Operations agent software.

Overview

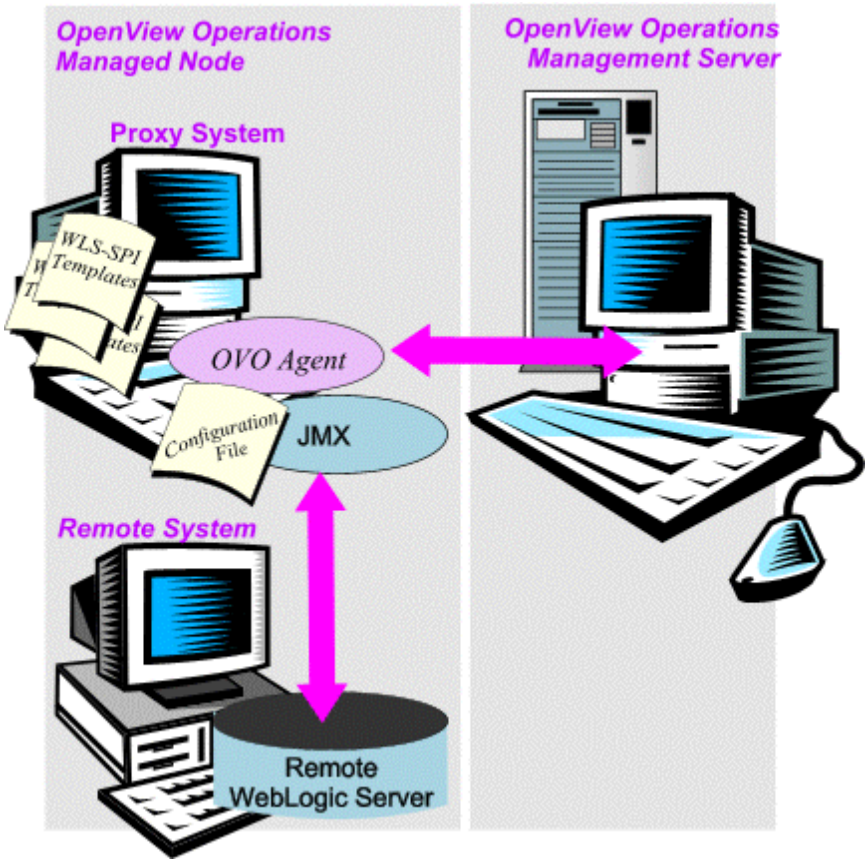
This section provides an overview of remote monitoring and shows how it is implemented. It also explains how to set up the WebLogic SPI to access WebLogic Server metrics and logfiles on unsupported platforms by using both the WebLogic SPI and HP Operations agent software.

Remote Monitoring

In a standard configuration, the WebLogic SPI programs and 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 and interpretation relies on the local, managed node to act as the proxy on which data collection is configured (see Figure 8).

Figure 8 Remote System Data Collection



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 the example on page 78, that shows how the remote entry appears (with system IP address).

Template deployment requirement: Templates must be deployed on the local node. If you need a separate template group, you can copy and rename the existing templates and specify the WebLogic Server name on the command line using the -i or -e options. For details on using these command line parameters, see Using the WebLogic Server Command Parameters on page 63.

HP Operations agent deployment requirement (optional logfile monitoring): To access remote WebLogic log files, ensure that the HP Operations agent software is installed on the remote system. Using standard HPOM processes, you can modify the standard logfile templates included with the WebLogic SPI to specify the correct logfile names, and deploy them to the remote system.

Monitoring remote systems using logfile versioning is not supported.

Configure Remote System Monitoring

To monitor WebLogic Servers remotely on systems other than those running on HP-UX, Linux (Red Hat), Solaris, or Windows 2000 platforms, complete these tasks:

Task 1: Configure the Remote WebLogic Server

Use Configure WebLogic SPI application in the WebLogic Application Bank, to configure each local managed node that communicates with a remote WebLogic Server. In the configuration add entries for remote WebLogic Servers.

1 Select the WebLogic managed node from which you want to monitor the remote WebLogic Server.

2 In the configuration, include an entry for each remote WebLogic Server: `SERVER<n>_ADDRESS=<DNS server name or IP address>`.

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

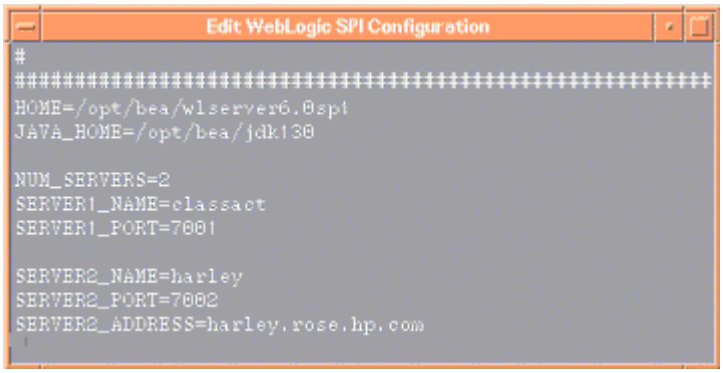
The illustration below shows how local and remote WebLogic Servers are configured in the same file. Notice, however, that for the remote servers the `SERVER<n>_ADDRESS=<IP_address>` line is added:

```
SERVER2_ADDRESS=15.75.27.109
```

or

```
SERVER2_ADDRESS=hardey.hp.com
```

If you are configuring one local (`SERVER1`) and one remote (`SERVER2`) WebLogic Server, your configuration might look like the following:



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

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

`wasspi_wls_perl -S wasspi_wls_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 HP Performance Agent (Optional)

The HP Performance 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 HP Performance Agent integration is enabled on the local managed node.

Task 3: Assign Local Node to WebLogic node group

Assign the local managed node to the WebLogic node group. Make sure you are deploying the configuration on the same WebLogic Server version node as the remote system.

Configuring Remote Monitoring for Logfiles (Optional)

Monitoring remote system logfiles is supported, if the following critera are met

1. The remote system that has an HP Operations agent running on it.
2. The system does not re-version logfiles when they roll.

To set up logfile monitoring, at the HPOM console, copy the WLS-SPI logfile template and then configure, assign, and deploy the copied logfile template to the remote system.

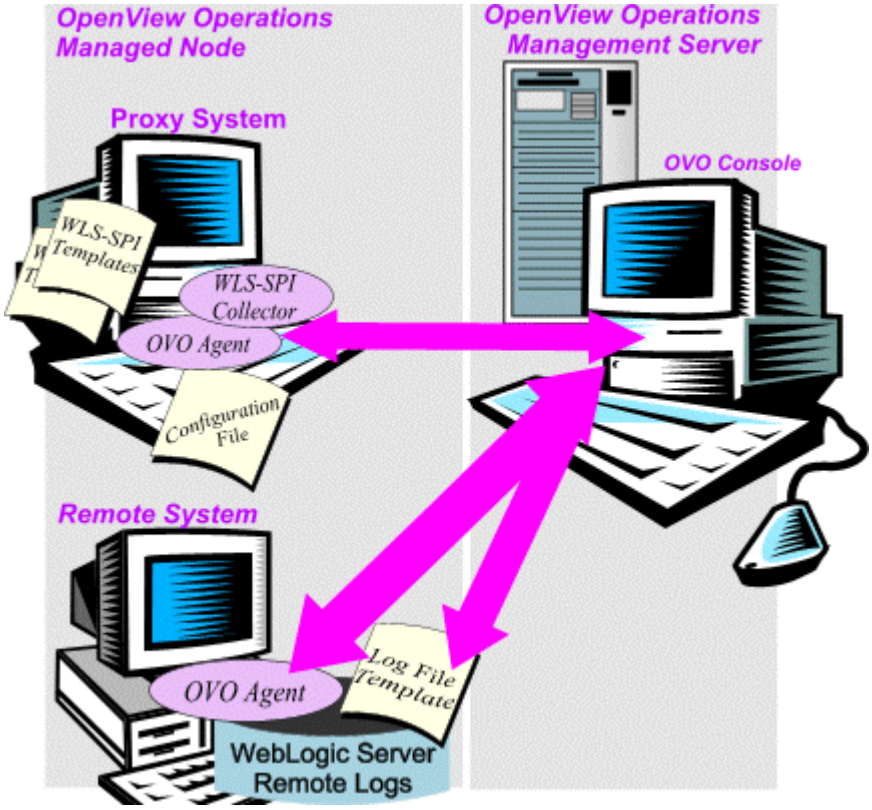
Configure the Logfile Template for Remote Logfiles

To configure the Logfile templates for remote monitoring, follow these steps:

1. Open a copy of the WebLogic Log Template located under the WebLogic version Group.

   For example, **SPI for WebLogic Server → WLSSPI-Logfiles**
2. In the Logfile text box, enter the location of the logfile on the remote system: */<path>/<filename>*.
3. Assign and deploy the logfile template to the remote HPOM managed node.

The Log File Template and the HP Operations Agent, both present on the remote system, make WebLogic Server logfile monitoring possible.



Remote Monitoring Limitations

Remote monitoring has the following limitations:

- The WebLogic SPI and the HP Operations agent do not support access to logfiles that are re-versioned each time the logs are rolled.
- When no HP Operations agent is present on the remote system, monitoring of WebLogic logfiles on the remote system cannot occur.
- In the HPOM Application Bank, the WebLogic SPI applications cannot be executed on remote systems.

Check the WebLogic SPI Nodes for License Count

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

To run the report, follow these steps:

1. At the HPOM 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 **WLSSPI License Check**.
4. Select an output destination and click **OK**.

5 Integrating HP Reporting and Graphing Products with the WebLogic SPI

The WebLogic SPI can be integrated with the following HP reporting and graphing products (these products must be purchased separately):

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

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

  For more information on how to integrate the WebLogic SPI with Reporter, see Integrating with HP Reporter on page 82. After you integrate the WebLogic SPI with Reporter, Reporter generates reports, every night, that show the performance and availability of a WebLogic Application Server on configured managed nodes.

- **HP Performance Agent**: HP Performance Agent 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. See the *HP Performance Agent for UNIX User's Manual* for more information about HP Performance Agent.

  If you are using HP Performance Agent, the WebLogic SPI automatically uses it. If you want to use the HP Operations subagent, CODA, that is included with HPOM (does not support HP Performance Agent), you must configure your managed nodes to do so. See Integrating with CODA on page 82 for more information.

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

- **HP Performance Manager**: HP Performance Manager provides graphing capability of the WebLogic SPI metrics. This is not the version of HP Performance Manager that is included with HPOM.

  For more information on how to integrate the WebLogic SPI with HP Performance Manager, see Integrating with HP Performance Manager on page 87. After integrating the WebLogic SPI with HP Performance Manager, graphs are available the following day.

Integrating with CODA

The WebLogic SPI can detect if you are using HP Performance Agent. If you are using HP Performance Agent, the WebLogic SPI installation automatically uses it.

If you want to use the HP Operations subagent, CODA, included with OVO 7.x and later, you must configure the managed nodes to do so. This configuration does not support HP Performance Agent.

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	`/var/opt/OV/conf/dsi2ddf/`
Windows	`\usr\ov\conf\dsi2ddf\`

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

2 Save the empty file.

Integrating with HP Reporter

You must configure the WebLogic SPI (see Chapter 3, Configuring the WebLogic SPI) before it can be integrated with Reporter.

If you are upgrading the WebLogic SPI report package, you must remove the old version before installing the new version. See Task 13: Install the New Report Package (Optional) on page 34 for information on how to remove the WebLogic SPI report package.

You must install the WebLogic SPI report package on a Windows system running Reporter. To install the report package, follow these steps:

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, double-click:

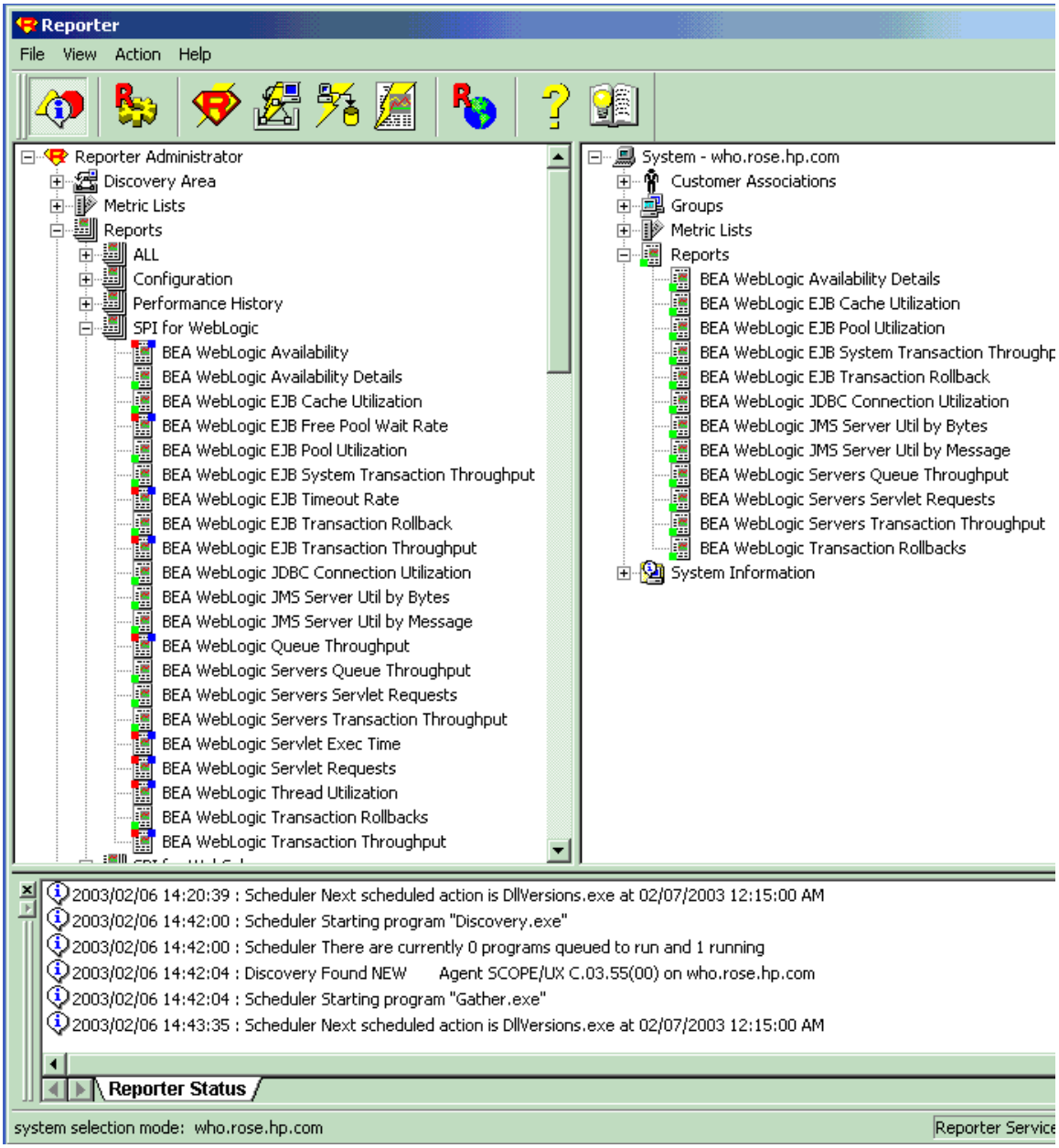
\OV_REPORTER\WebLogic_SPI_06.00.000\WLSSPI-Reporter.msi

2 Follow the instructions as they appear.

3 Check the Reporter status pane (see the illustration that follows) to note changes to the Reporter configuration.

For Windows 2000 managed nodes, during the installation an error message might 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 status pane (at the bottom of the Reporter window) shows you information on the programs running and any errors occurring. You can check the status pane to see that Reporter has been updated with the WebLogic SPI reports.



You can find instructions in the Reporter Help for assigning the WebLogic 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 and 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 WebLogic SPI reports require that you identify systems by their full name. For example, `abc.xyz.com` is acceptable while `abc` is not.

The WebLogic SPI Reporter Reports

The reports available through the integration of HP Reporter and the WebLogic SPI show consolidated data on server performance and availability on WebLogic Server systems. In addition, other reports show data for single systems. These reports are available the day following your installation of the WebLogic SPI report package on the Reporter Windows system. (See Integrating with HP Reporter on page 82, if you have not yet completed the report package installation.)

The tables that follow show all pre-defined reports.

Table 4 Performance

Report Title	Description	WebLogic Version	Metric
TOP 20 Queue Throughput	Shows the average throughput for the top 20 execute queues of all servers.	7.0, 8.1, 9.x, 10.0	10
TOP 20 Servlet Average Execution Times	Shows the average execution time for the top 20 requested servlets for all servers. Along with the servlet name the associated application name is also displayed.	7.0, 8.1, 9.x, 10.0	240
TOP 20 Servlet Request Rates	Shows the total servlet request rate being received by the top 20 servers Along with the servlet name, the associated application name is also displayed.	7.0, 8.1, 9.x, 10.0	242
Execute Queue Thread Utilization	Shows the execute queue`s thread utilization as a percent for the top 20 execute queues of all servers.	7.0, 8.1, 9.x, 10.0	11
TOP 20 Average Transaction Throughput	Shows the average transaction throughput for the top 20 servers.	7.0, 8.1, 9.x, 10.0	76
TOP 20 EJB Free Pool Wait Rate	Shows the number of times per minute that a request had to wait for an EJB to become available for the top 20 servers.	7.0, 8.1, 9.x, 10.0	25
TOP 20 EJB Timeout Rate	Shows the number of times per minute that a request timed out while waiting for an EJB to become available for the top 20 servers.	7.0, 8.1, 9.x, 10.0	26
TOP 20 EJB Transaction Throughput	Shows the average EJB transaction throughput for the top 20 servers.	7.0, 8.1, 9.x, 10.0	35

Table 5 Availability

Report Title	Description	WebLogic Version	Metric
Server Availability	Contains a daily histogram showing the percentages of uptime, downtime for all servers.	7.0, 8.1, 9.x, 10.0	2

.

Table 6 Single System Reports

Report Title	Description	WebLogic Version	Metric
Server Availability Details	Contains spectrum graphs showing minutes of uptime by day and hour for each WebLogic Server.	7.0, 8.1, 9.x, 10.0	2
JDBC Throughput And Connection Utilization	Charts the throughput against the utilization for the JDBC connection pools for each WebLogic Server. Shows the JDBC data source and the associated application name (if any).	7.0, 8.1, 9.x, 10.0	260, 262
Throughput And Utilization Of JMS Server By Byte Count	Charts the throughput against the queue utilization by byte count for destinations on the JMS servers for each WebLogic Server.	7.0, 8.1, 9.x, 10.0	252, 256
Throughput And Utilization Of JMS Server By Message Count	Charts the throughput against queue utilization by message count on the JMS servers for each WebLogic Server.	7.0, 8.1, 9.x, 10.0	251, 255
Queue Utilization versus Throughput On Server	Shows the throughput against the thread utilization for each WebLogic Server.	7.0, 8.1, 9.x, 10.0	10,11
TOP 20 Servlet Request Rate On Server	Shows a stacked area chart with the request rate (requests per second) for the top 20 servlets for each day and a table with data of the top 100 servlets for each WebLogic Server.	7.0, 8.1, 9.x, 10.0	242
Transaction Throughput On Server	Shows the average transaction throughput for each WebLogic Server by day.	7.0, 8.1, 9.x, 10.0	76
Transaction Rollback Types	Shows the transaction rollbacks by error type for each WebLogic Server.	7.0, 8.1, 9.x, 10.0	72-75
TOP 20 Stateful and Entity EJB Cache Utilization	Shows the EJB cache utilization percent for the top 20 EJBs for each WebLogic Server. Along with the EJB instance, the associated application name also will be displayed	7.0, 8.1, 9.x, 10.0	238

HP Performance Insight Reports for the WebLogic SPI

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

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, 76
EJB Pool Utilization	The percentage of EJB pool utilization.	235
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.	260, 262
Near Real Time Server Availability	The server status for the last six hours.	2, 76
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.	240, 242
EJB Cache Utilization	The percentage of EJBs in the cache in use.	238
EJB Transaction Reports	The EJB Free Pool Wait Rate measures the number of times per minute that no stateless session beans were available from the free pool. The EJB Load Timeout Rate measures the number of times a client timed out waiting for an EJB. The EJB Transaction Throughput measures the number of EJB transactions per second.	25, 26, 35
Execute Queue Throughput—Utilization	The Execute Queue Throughput rate measures the number of requests serviced by an execute queue per second. The Queue Utilization chart shows the percentage of threads used for a server's execute queue.	10, 11
JMS Throughput—Utilization	The JMS Throughput report indicates the number of messages/bytes that have passed through the JMS per second. The JMS Utilization report indicates what percentage of a JMS queue is filled based on the number of messages or bytes.	251, 252, 255, 256
Near Real TIme Execute Queue Throughput—Utilization	The throughput or utilization trend of execute queues for the last six hours.	10, 11
Server Transaction Rollback	The percentage of transactions that are rolled back due to resource, application, timeout, or system error.	72 - 75

Integrating with HP Performance Manager

To integrate the WebLogic SPI with HP Performance Manager, follow these steps:

1 Install and configure the WebLogic SPI. Verify that you have completed Task 1: Configure the Management Server to Launch Your Web Browser on page 37. Also, verify that you have set the GRAPH_URL property. For more information about the GRAPH_URL property, see Property Definitions on page 167.

2 If you are upgrading the WebLogic SPI graph package, you must remove the old version before installing the new version. For information on removing the WebLogic SPI graph package, see Task 14: Install the New Graph Package (Optional) on page 34.

3 Install the graph package.

If HP Performance Manager is running on a Windows system, follow these steps:

a Insert the Smart Plug-ins DVD-ROM (that contains the reporting packages) into the DVD-ROM drive, and in Windows Explorer, double-click:

\OV_PM\WebLogic_SPI_06.00.000\WINDOWS\HPOvSpiWlsGc-06.00.000.msi

b Follow the instructions as they appear.

If HP Performance Manager is running on a HP-UX system that is not the HPOM management server, follow these steps (if HP Performance Manager is installed on the HPOM management server, the files are installed automatically when you install the SPI software):

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

```
swinstall -s <mount_point>/OV_PM/WebLogic_SPI_06.00.000/HPUX/
HPOvSpiWlsGc-06.00.000.depot WLSSPI-GRAPHS
```

If HP Performance Manager is running on a Solaris system that is not the HPOM management server, follow these steps (if HP Performance Manager is installed on the HPOM management server, the files are automatically installed when you install the SPI software):

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

```
/usr/sbin/pkgadd -d <mount_point>/OV_PM/WebLogic_SPI_06.00.000/
SOLARIS/HPOvSpiWlsGc-06.00.000.sparc all
```

4 To graph any WebLogic Server metric, use the data source name `WLSSPI_METRICS`.

For information on how to view the graphs, see the HP Performance Manager documentation. You can view the graphs one day after the integration.

To uninstall the Graph package, follow the steps given in Task 8: Remove the Graph Package (Optional) on page 28

Viewing Graphs that Show Alarm Conditions

For graphing purposes, the WebLogic SPI organizes metrics according to type. When a message is generated for any metric appearing in a table in the section that follows, you can view a chart of its and other metric values.

To view a graph associated with an alarm condition (Operator-initiated action has been defined with the WebLogic SPI monitor template), complete these steps:

1. In the HPOM message browser, double-click the message. The Message Details window opens.
2. Click **Perform Action**.

The WebLogic SPI graph for the metric appears. The value of this metric is charted along with the values of other metrics in the same group.

Viewing Graphs that Show Past or Current Conditions

You can manually generate any of the four available graphs using the View Graphs application. Follow these steps:

1. At the HPOM console, double-click HPOM Node Bank. The HPOM Node Bank window opens.
2. From the Window menu, select **Application Bank**. The HPOM Application Bank opens in a new window.
3. Double-click **WLSSPI.** The Application Group: WebLogic SPI window opens.
4. Double-click **WLSSPI Admin.** The Application Group: WLSSPI Admin window opens. All the WLSSPI Admin applications appear in this window.
5. Select a node in the Node Bank window and double-click **View Graphs** to view the graphs.

The WebLogic SPI Metrics Available for Graphs

The tables that follow show the graphs available for mapping collected metric values. You can use the View Graphs application to view graphs of any of the metrics listed in the tables below. The graph will appear in your Web browser.

Table 7 JVM

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

Table 8 Server Performance

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

Table 9 Enterprise Java Beans (EJB)

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

Table 10 JDBC

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

Table 11 Connector Service

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

Table 12 Transaction

Metric Number and Name	Metric Description
B070_TranAveTime	Average commit time for transactions.
B071_TranRollbackPct	Percentage of transactions rolled back, based on the total.
B072_TranResErrRbPct	Percentage of the transactions rolled back due to resource error.
B073_TranAppErrRbPct	Percentage of transactions rolled back due to application error.
B074_TranTimErrRbPct	Percentage of transactions rolled back due to a timeout error.
B075_TranSysErrRbPct	Percentage of the transactions rolled back due to system error.
B076_TranThruRate	Number of transactions processed per second.
B077_TranHeurCnt	Percentage of transactions returning a heuristic decision.
B079_TranCapUtil	Percentage utilization of transaction capacity.

Table 13 Cluster

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

Table 14 Security

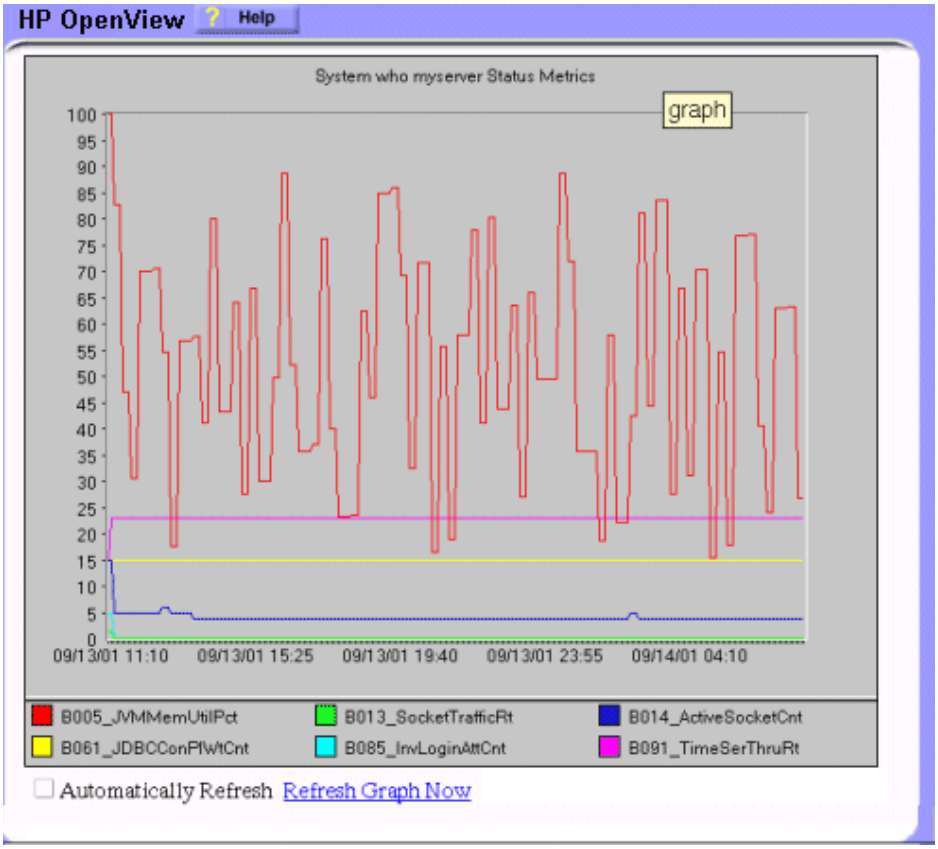
Metric Number and Name	Metric Description
B085_InvLoginAttCnt	Number of invalid login attempts.

Table 15 WebLogic Time Service

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

Launching the Web Page Display with an Operator Action that Generates Graphs

Performance Manager graphs can be generated from most WebLogic SPI alarm messages by clicking **Perform Action** from the message details, Properties, or the message browser. The operator action launches your Web browser, which displays a graph of the metric that generated the message, as well as other related metrics.



Specifying a Date Range

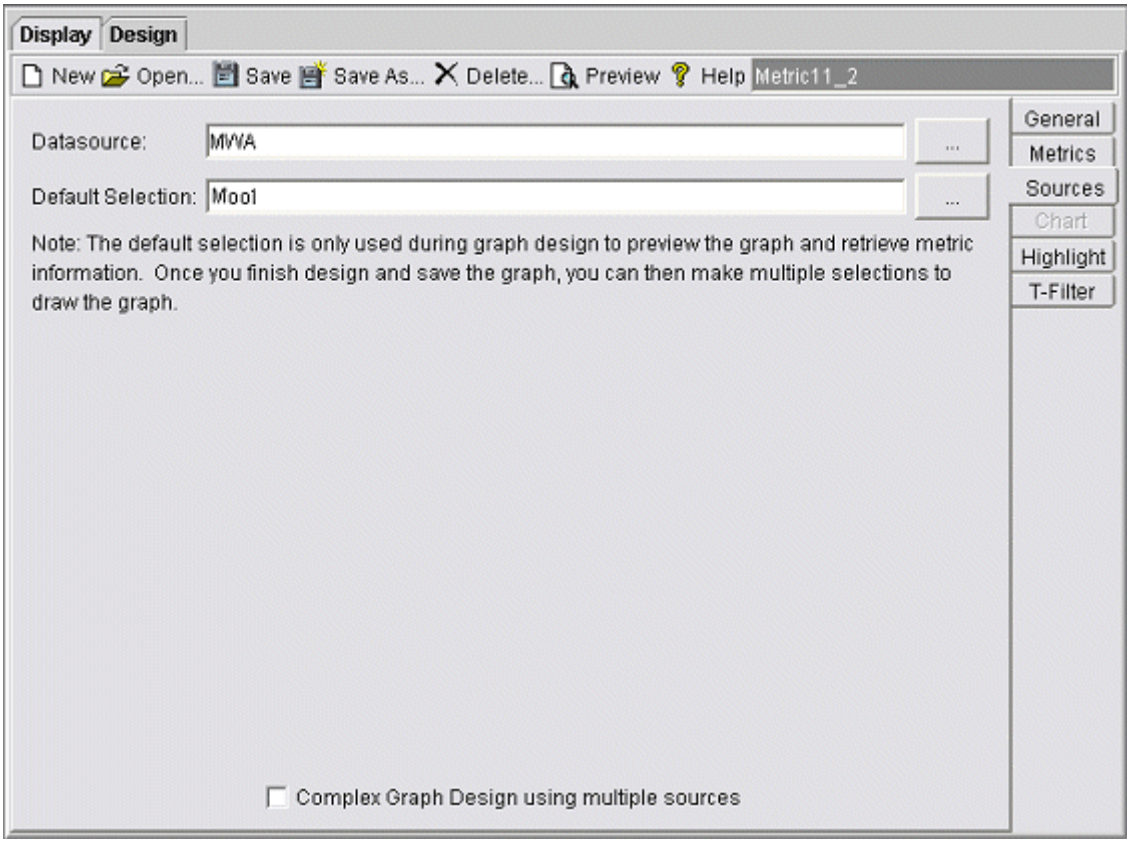
Within the web page display, you can specify a date range of one day, one week, one month, or one year. See the online help for instructions on changing display settings.

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 HP Performance Manager.

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



2 From the Performance Manager Java Interface window,

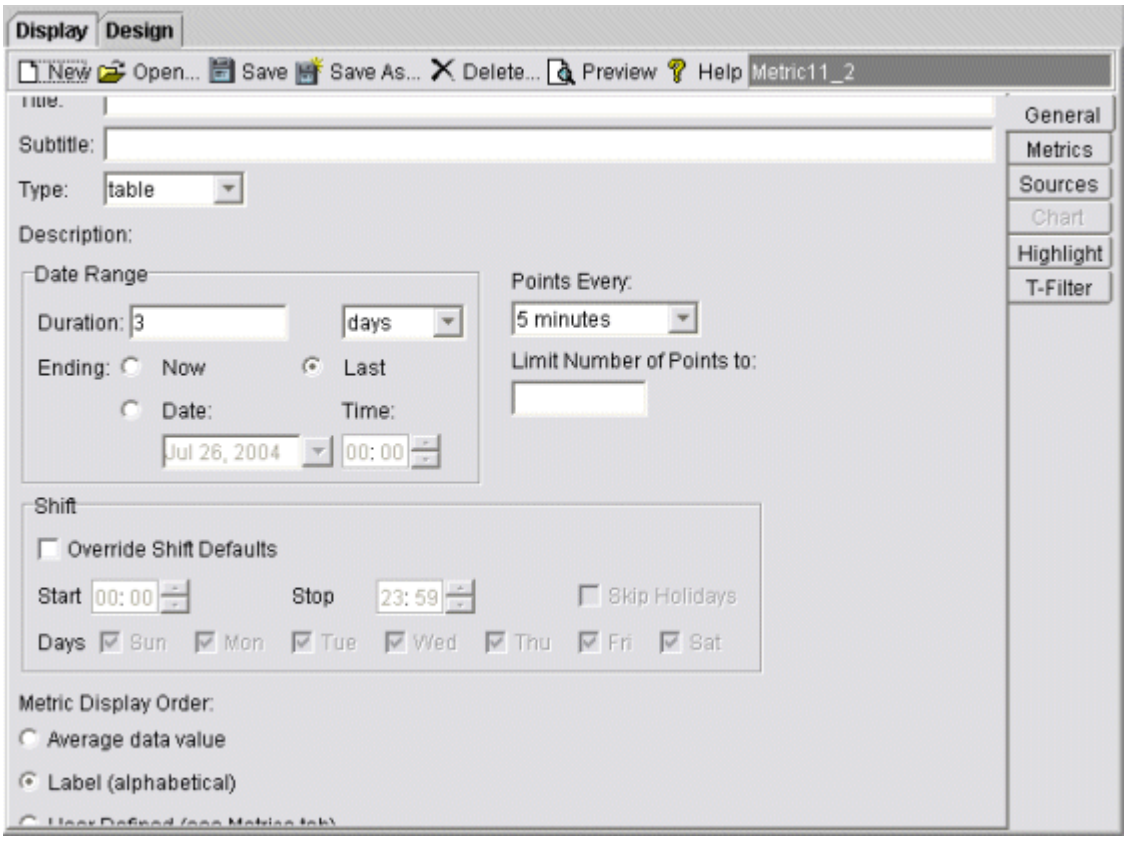
   a Click the **Display** tab at the top of the window.

   b In the Display pane click the **Sources** tab.

   c Click ... button next to the Datasource box and select a data source.

   d Click ... button next to the Default Selection box and select the node on which the data source resides.

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



4 From the General pane,

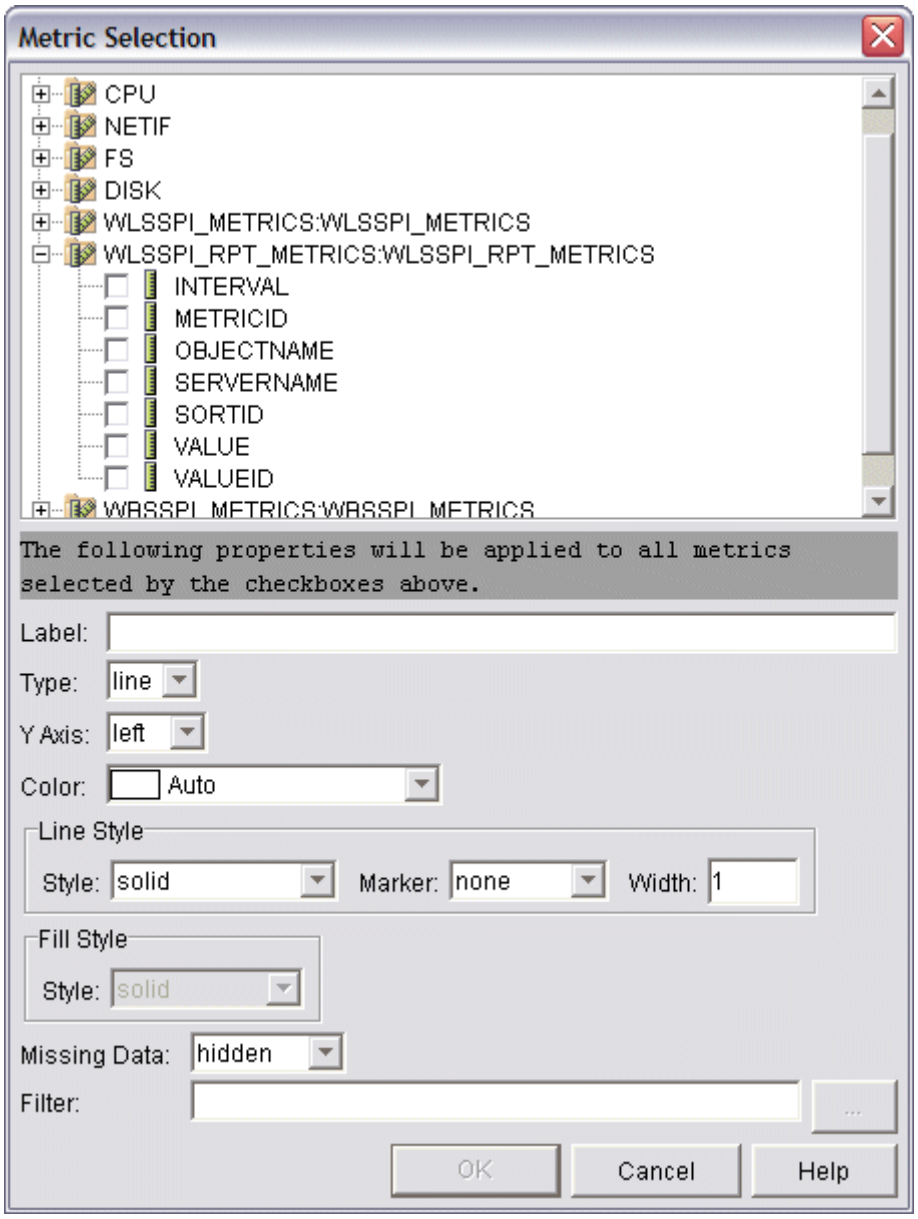
a Select **line** from the Type drop-down list. This generates a line graph.

b Enter a Date Range.

c Enter an interval using the Points Every drop-down list.

d Select **Label (alphabetical)** option for the Metric Display Order, 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.



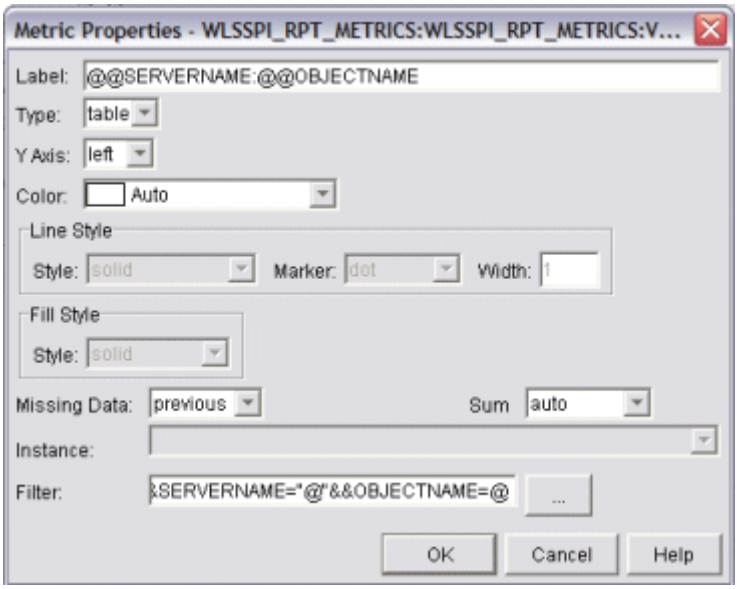
6 From the Metric Selection window,

a Click **+** to expand the `WLSSPI_RPT_METRICS` data source options tree.

b Select the VALUE checkbox.

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 box, enter:

— **@@SERVERNAME:@@OBJECTNAME** if you are creating one graph with all SERVERNAMEs

— **@@OBJECTNAME** if you are creating one graph with one SERVERNAME

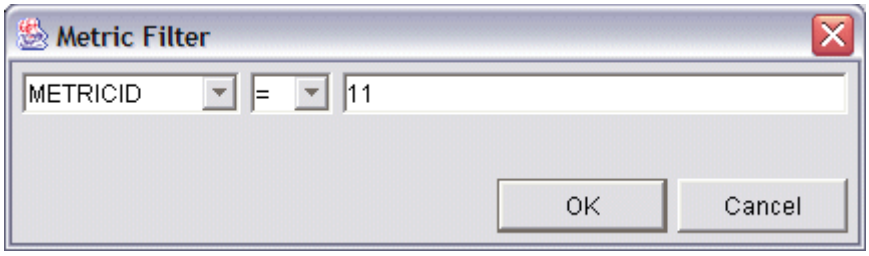
b In the Marker drop-down list, select any marker other than none.

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 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 box.

d Click **OK**.

10 From the Metric Properties window,

a In the Filter box, append the following:

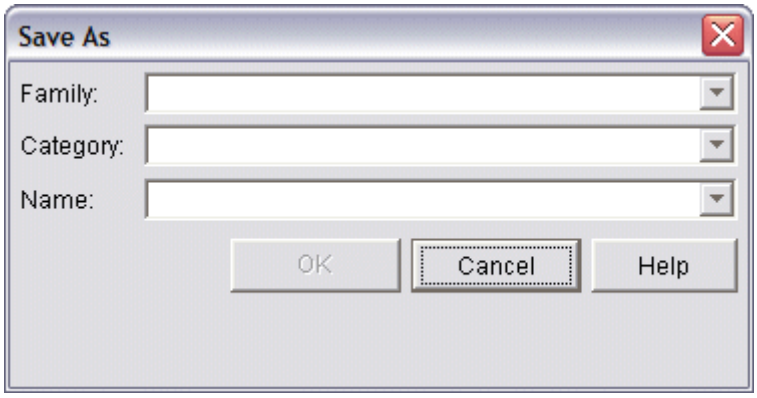
— **`&&SERVERNAME=@&&OBJECTNAME=@@`** if you want one graph to display all SERVERNAME/OBJECTNAME combinations.

— **`&&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 box, you can edit this item in the graph template file. See 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, **`WLSSPI_Graphs`**) in the Family box. The family name serves as a group to organize the graphs.

b Enter a name (for example, **`metric_11`**) in the Name box to uniquely identify the graph.

c Entering text into the Category box is optional.

d Click **OK**. The information is saved in a graph template file named `VPI_GraphsUser<family>.txt (for example, VPI_GraphsUserWLSSPI_Graphs.txt).`

For more information about this window, see the online help.

13 Edit the graph template file. The file is located in the HPOM data directory on the system of the HP Performance Manager instance on which you are working. The graph file might look similar to the following:

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

CLASS: WLSSPI_RPT_METRICS:WLSSPI_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
POINTSERVERY: raw
DATASOURCE: mwa
SYSTEMNAME: moo1

CLASS: WLSSPI_RPT_METRICS:WLSSPI_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.

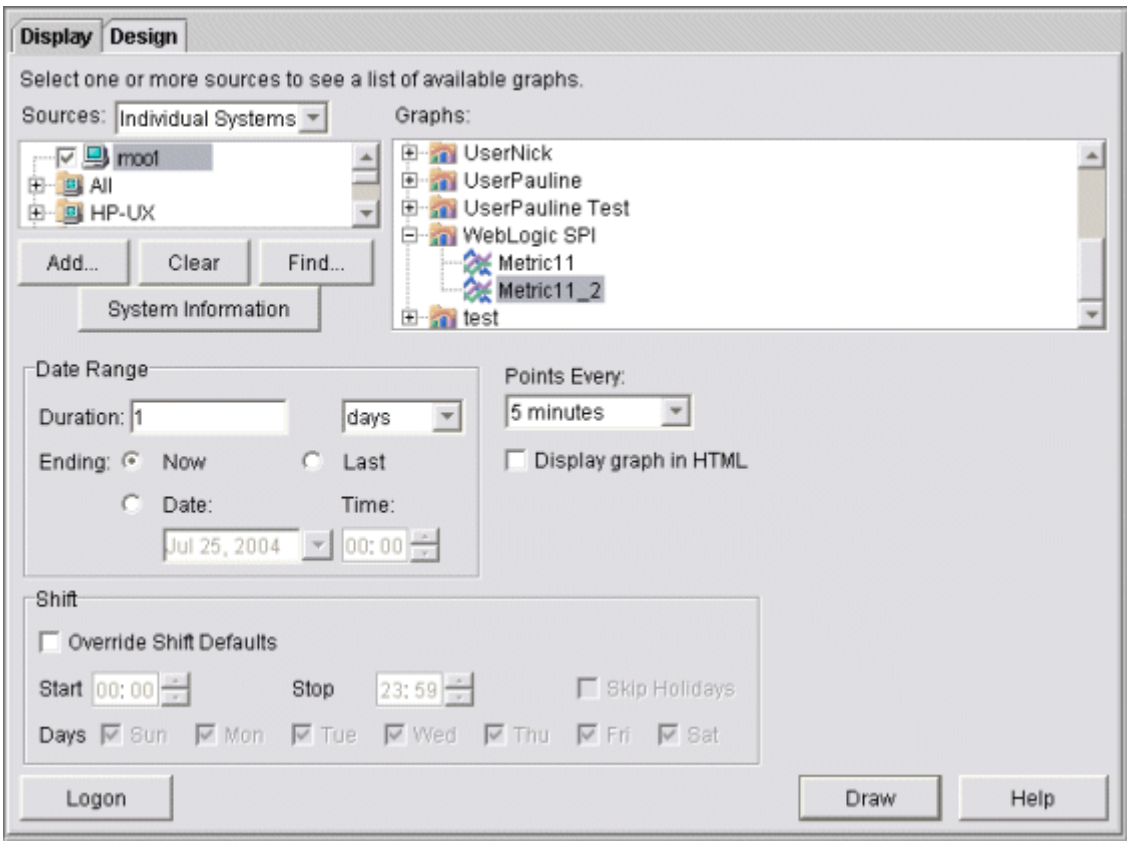
a Add **SUMFROMRAW:** at the end of the first section of each graph (in the example above, add **SUMFROMRAW:** after `SYSTEMNAME: moo1`). This allows HP Performance Manager to summarized data from the data source and cannot be added using the GUI.

b If you were unable to edit the Filter box in the Metrics Properties window in , 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] moo1
#*******************************************
FAMILY: WLSSPI_Graphs
GRAPH: Metric11
GRAPHBACKGROUND: None
DATERANGE: 1 day
GRAPHMULTIPLEGRAPHS: Yes
POINTSEVERY: raw
DATASOURCE: mwa
SYSTEMNAME: moo1
SUMFROMRAW:

CLASS: WLSSPI_RPT_METRICS:WLSSPI_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
POINTSERVERY: raw
DATASOURCE: mwa
SYSTEMNAME: moo1
SUMFROMRAW:

CLASS: WLSSPI_RPT_METRICS:WLSSPI_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 the Display tab window,

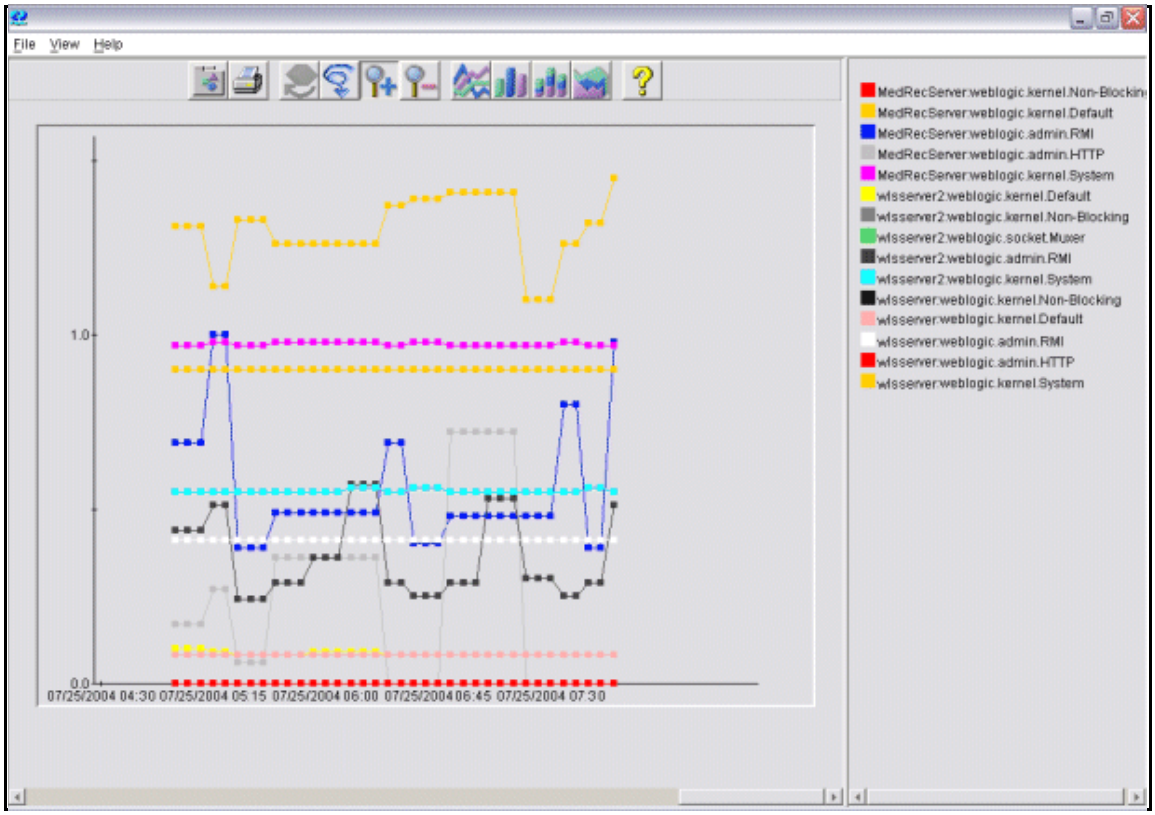
a Navigate to the server on which the data source resides (It is mentioned in the box below the Sources box).

b In the Graphs box, navigate to the family of graphs and select the graph you created.

c Enter information into the Date Range dialog box and Points Every box.

d Click **Draw**. The graph opens. See Figure 9.

Figure 9 Graph



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 Follow these steps:

a From the HPOM console, open the Node Bank window and select a node or groups of nodes on which you want to enable graphing.

b From the Window menu, select Application Bank. The Application Bank window opens.

c Select **WLSSPI → WLSSPI Admin**.

d Double-click **UDM Graph Enable**.

6 Basic Troubleshooting and Error Messages

Using the Self-Healing Info Application

The Self-Healing Info application gathers SPI troubleshooting data and stores it in a file that you can submit to HP support for assistance. For more information about using this application, see Self-Healing Info on page 187.

The file created by the Self-Healing Info application might 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**.

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	/<*%OvInstallDir%*>/log/wlsspi <managed_node>_disc_server.log
Description	Records the updates done by the WLSSPI 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	/<*OvAgentDir*>/log/javaagent.log
Description	HPOM discovery agent log file containing the status of the HPOM discovery agent. By default, logging to this file is enabled at LOG_LEVEL 3. Set the LOG_LEVEL variable in <*OvAgentDir*>/conf/svcDisc/OvJavaAgent.cfg 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	/<*OvAgentDir*>/log/wlsspi/config.log
Description	Records output from the WebLogic SPI configuration scripts.

File Type	Log
Directory	/<*OvAgentDir*>/log/wlsspi/errorlog
Description	Records the WebLogic SPI error messages. This log file is monitored by the WebLogic SPI policies.

File Type	Log
Directory	/<*OvAgentDir*>/log/wlsspi/wasspi_wls_discovery.log
Description	Records output from the WebLogic SPI discovery process.

File Type	Trace
Filename	/<*OvAgentDir*>/log/wlsspi/wasspi_wls_discovery.trc (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_wls_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_wls_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*>/log/wlsspi/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*>/log/wlsspi/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 `\<OvAgentDir>\log\javaagent.log`

Description HPOM discovery agent log file containing the status of the HPOM discovery agent. By default, logging to this file is enabled at `LOG_LEVEL` 3. Set the `LOG_LEVEL` variable in <*OvInstallDir*>`\conf\svcDisc\OvJavaAgent.cfg` 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 `\<OvAgentDir> \wasspi\wls\log\config.log`

Description Records output from configuration scripts.

File Type Log

Directory `\<OvAgentDir> \wasspi\wls\log\errorlog`

Description Records the WebLogic SPI error messages. This log file is monitored by the WebLogic SPI policies.

File Type Log

Directory `\<OvAgentDir> \wasspi\wls\log\wasspi_wls_discovery.log`

Description Records output from the WebLogic SPI discovery process.

File Type Trace

Filename `\<OvAgentDir>\wasspi\wls\log\wasspi_wls_discovery.trc` (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 `\<%OvInstallDir%>\bin\instrumentation\wasspi_wls_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_wls_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\wls\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\wls\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

Problem: The WLSSPI Discovery template does not automatically discover and update the WebLogic SPI configuration.

Solutions:

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 WebLogic 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 WebLogic SPI.
3. Verify the WebLogic application server status. The application server must be running. See Task 1: Verify the Application Server Status on page 41 for more information.
4. Verify that the LOGIN and PASSWORD properties are set and that the WebLogic user configured has the correct permissions. See Chapter 3, Configuring the WebLogic SPI for more information.
5. On a Windows managed node, if the `HKEY_LOCAL_MACHINE\\Software\\BEA Systems\\BEAHOMELIST` registry key does not exist, configure it, create the file*%SystemDrive%*`\BEA\beahomelist`, or set the BEA_HOME_LIST property for that managed node.
6. Verify the Java home directory (see Verifying the Java Home Directory on page 107).
7. If you are running WebLogic Server 7.0 or WebLogic Server 7.0 SP1 and did not save the domain configuration file (for example, `config.xml`) in the default directory (<*BEA_Home_Dir*>`/user_projects/`<*WebLogic_Domain_X*>`/`, where <*BEA_Home_Dir*> is the directory that contains the `registry.xml` file), do *one* of the following:
   - Manually set the server using the Configure WLSSPI application.
   - Manually configure ADMIN_PORTS, the port number(s) of the WebLogic Admin server(s) listed in the domain configuration file, using the Configure WLSSPI application. The global LOGIN and PASSWORD must be set for the node on which these WebLogic Admin servers are running.
8. If you are running WebLogic Server 7.0 SP2 or higher and did not save the domain configuration file (for example, `config.xml`) in the default directory (<*BEA_Home_Dir*>`/user_projects/domains/`<*WebLogic_Domain_X*>`/`, where <*BEA_Home_Dir*> is the directory that contains the `registry.xml` file), do *one* of the following:
   - Manually set the server using the Configure WLSSPI application; or
   - Manually set ADMIN_PORTS, the port number(s) of the WebLogic Admin server(s) listed in the domain configuration file, using the Configure WLSSPI application. The global LOGIN and PASSWORD must be set for the node on which these WebLogic Admin servers are running.
9. If you are running multiple versions of WebLogic Server on the same system, set the HOME property.
10. On a UNIX managed node, verify that BEA_HOME_LIST and HOME_LIST directory path names do not include spaces. The discovery process currently does not support spaces in directory names.

11 Verify that the Configure WLSSPI application is not running. Only one process can access the configuration at a time. If Configure WLSSPI is running, other processes that must access the configuration (like the discovery process) hang until the configuration becomes available.

12 Check if the HPOM management server is suppressing duplicate messages:

   a From the HPOM 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 selected, clear it.

13 Restart the HPOM management server:

   a Stop all HPOM GUIs that are running by selecting **File → Exit**.

   b Stop the HPOM management server processes. Enter: **`/opt/OV/bin/ovstop opc ovoacomm`**

   c Delete all HPOM 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 HPOM management server process. Enter: **`/opt/OV/bin/OpC/opcsv -start/opt/OV/bin/OpC/opcsv -status`**

   e Restart the HPOM GUI. Enter: **`opc`**

- **Problem**: The WLSSPI Discover template is adding inaccurate information to the configuration.

  Solutions:

  a Verify LOGIN and PASSWORD are correct. See Task 2: Configure a WebLogic Server User on page 41 for more information.

  b Verify the Java home directory. See Verifying the Java Home Directory on page 107 for more information.

  c Update the configuration and clear the AUTO_DISCOVER check box in the configuration editor to prevent the WLSSPI-Discover template from overwriting the configuration information.

Verifying the Java Home Directory

To successfully use the WLSSPI-Discover template, the Java home directory (on both a Windows and UNIX managed node) must be configured correctly.

Although the WLSSPI-Discover template searches for this information, if they cannot find this information or the information is not accurate, the WLSSPI-Discover template does not function completely.

On each managed node on which you want to run the WLSSPI-Discover template, verify *one* of the following (listed in the order of precedence used by the WLSSPI-Discover template):

- JAVA_HOME is correctly defined in the configuration. To edit or view the configuration, launch the Configure WLSSPI application (for steps see Configure WLSSPI on page 184):

  a In the configuration editor, set the JAVA_HOME property. See The Configuration Editor on page 157 for more information about using the configuration editor.

b Click **Save** to save the changes made to the configuration. Once you save your changes, you cannot automatically undo them.

c 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** in the Confirm Operation window, the changes made to the configuration 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, launch the Discovery application, click **Next** in the configuration editor, and then click **OK** in the Confirm Operation window.

d Launch the Discover WebLogic application on the managed nodes on which the JAVA_HOME property was added or edited. Running the Discover WebLogic application updates the service map.

- Java is installed in each of the BEA home directories (each directory listed in the file `beahomelist`).
- The JAVA_HOME system variable is correctly defined.

  On a Windows managed node, follow these steps:

  a From the Start menu, select **Settings** → **Control Panel**.

  b Double-click **System**.

  c Select the **Advanced** tab.

  d Select **Environment Variables...**

  e Scroll through the System variables list. Verify the JAVA_HOME value. If JAVA_HOME does not exist, it is not defined.

  On a UNIX managed node, follow these steps:

  a Type **`echo $JAVA_HOME`**

  b Verify the output. If no output is returned, JAVA_HOME is not defined.

Troubleshooting the Configuration

- **Problem**: The WebLogic SPI configuration does not have complete or accurate information for a WebLogic managed server.

  Solution: Verify LOGIN and PASSWORD are correct. See Task 2: Configure a WebLogic Server User on page 41 for more information. This is the most common reason for incorrect information for a WebLogic managed server running on a remote node (not running on a HPOM managed node).

- **Problem**: The WLSSPI-Discover template overwrites the configuration with inaccurate information.

  Solution: Update the configuration and clear the AUTO_DISCOVER check box in the configuration editor to prevent the WLSSPI discover template from overwriting the configuration information.

- **Problem**: The `Server status is unknown (down)` message appears in the message browser, but the server is running.

  Solution: Check that you correctly set the PORT, PROTOCOL, and PASSPHRASE (if required) properties:

  — Verify that PROTOCOL is set to one of two values: t3 (for non-SSL) or t3s (for SSL).

  — If the application server is using SSL, verify that the PORT is set to a valid SSL port number and that PROTOCOL is set to t3s.

  — If the application server is not using SSL, verify that the PORT is set to a valid non-SSL port number and that PROTOCOL is set to t3.

  — If the keystore has a password defined, re-set the PASSPHRASE in case it has been typed wrong.

Troubleshooting the Applications

- **Problem**: Configuration variable `SERVER<n>_START_CMD` missing for server "Default Server"

  Solution: Before you can successfully launch the Start WebLogic application, you must set the START_CMD and USER properties. Set these properties using the Configure WLSSPI application. See Configure WLSSPI on page 184 for more information about this application.

- **Problem**: Configuration variable `SERVER<n>_STOP_CMD` missing for server "Default Server"

  Solution: Before you can successfully launch the Stop WebLogic application, you must set the STOP_CMD and USER properties. Set these properties using the Configure WLSSPI application. See Configure WLSSPI on page 184 for more information about this application.

- **Problem**: When launched, the Verify application gives improper output.

  Solution: Before you launch the Verify application ensure that you installed the latest version of Self-Healing Service (SHS) component (version 2.20) from the SPI DVD. If you upgrade the WebLogic SPI without the SPI DVD, 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 installed the latest version of Self-Healing Service (SHS) component (version 2.20) from the SPI DVD. If you upgraded the WebLogic SPI without the SPI DVD, you must upgrade the SHS component also. You can download the SHS component from **http://support.openview.hp.com/self_healing_downloads.jsp**.

- **Problem**: Check WebLogic 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 WebLogic application returns the server status as NOT_RUNNING (or does not give any output), turn ON the monitoring for that particular server by using the Start Monitoring application.

- **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**: View WebLogic Log application lists duplicate (redundant) log file names.

  Solution: This problem occurs if there are duplicate entries in the `SiteConfig` file. Relaunch the Configure WLSSPI application to remove the duplicate entries.

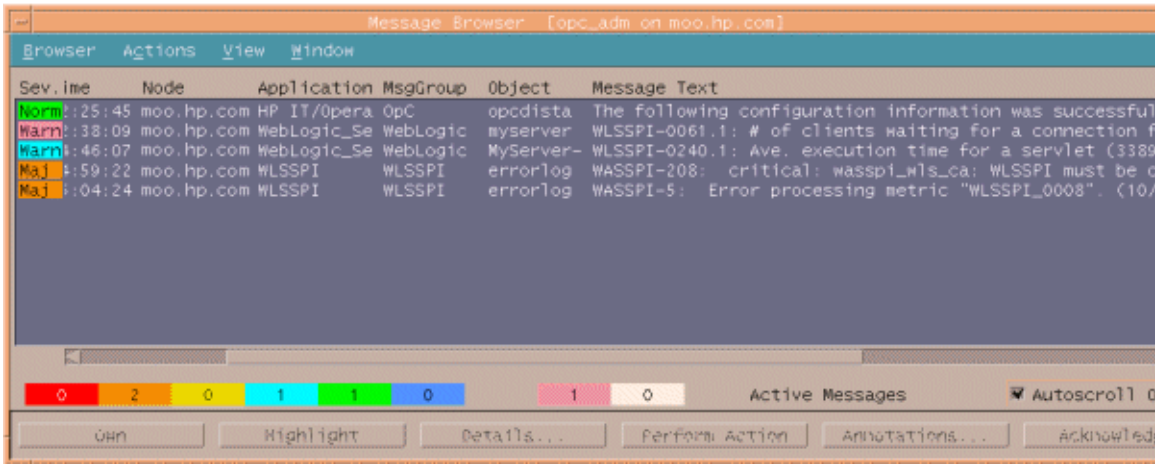
- **Problem**: Datasource not getting created on RHEL 4.0 platform.

  Solution: Ensure that you installed the latest version of DSI2DDF component (02.22.000) from the SPI DVD. If you upgraded the WebLogic SPI without the SPI DVD, you must upgrade the DSI2DDF component also. To get the latest DSI2DDF component contact HP Software Support.

Error Messages

This section provides detailed information on error messages resulting from conditions detected in the operation of the Smart Plug-in for BEA WebLogic Server (WebLogic SPI) and not the WebLogic Server. These error messages belong to the WLSSPI Message Group.

In the following figure, the last two messages are a result of errors in the operation of the WebLogic SPI. These errors are identified as belonging to the WLSSPI Message Group (see the MsgGroup column in the illustration below).



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	**Probable Cause** Temporary lock files are used to avoid collisions when multiple WebLogic SPI data collector processes attempt to access the same data file. This error occurs when the lock file could not be created after several attempts because it already exists. **Suggested Action** If a file by the same name already exists, it might not have been deleted by a previous run of the WebLogic SPI data collector. You should delete this file manually.

WASSPI-2

Description	Cannot access the SPI configuration.
Severity	Critical
Help Text	**Probable Cause** A WebLogic SPI configuration file could not be located or accessed. Either they do not exist or there was a problem reading the files. **Suggested Action** 1 Verify that the schedule template that runs the WebLogic SPI data collector specifies the correct directory on the command line. The option `-Dwasspi.config.dir=`<*configDirectory*> must be specified on command line invocation of the data collector. <*configDirectory*> must be `/var/opt/OV/conf/wlsspi` on Unix platforms or `\usr\OV\wasspi\wls\conf` on Windows platforms. 2 Verify that the WebLogic SPI was configured correctly by running the Verify utility from the Application Bank. If the configuration is not correct, run the WebLogic SPI configuration utility from the Application Bank to reinstall the files. 3 See the text following the error message in the WebLogic SPI error log to help identify the underlying cause of the problem, for example 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	**Probable Cause** The WebLogic SPI data collector command line is incorrectly specified in a schedule template. **Suggested Action** 1 See the text following the error message in the WebLogic 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 WebLogic SPI, reinstall the SPI and run the WebLogic SPI configuration utility from the Application Bank. 3 If the error occurred in a schedule template not shipped with the WebLogic SPI, correct the schedule template that contains the incorrect command line. See the *HP Operations Smart Plug-in for BEA WebLogic Server Configuration Guide* for more information on the WebLogic SPI data collector command line.

WASSPI-4

Description	Error getting the metric definitions.
Severity	Critical
Help Text	**Probable Cause** The WebLogic 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. **Suggested Action** 1 See the text following the error message in the WebLogic 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 WebLogic 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 WebLogic SPI, reinstall the WebLogic 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 WebLogic SPI, verify that this XML file adheres to the MetricDefinitions.dtd specification. See the WebLogic 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. 5 If the underlying error is `ClassNotFound`, this is an internal error. Report this to HP support.

WASSPI-5

Description	Error processing metric <*metric_number*>.
Severity	Major
Help Text	**Probable Cause** An error occurred while trying to collect data or perform calculations for the specified metric. **Suggested Action** See the text following the error message in the WebLogic SPI error log to help identify the underlying cause of the problem. The error messages previous to this one might 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.

WASSPI-6

Description	Required property <*property_name*> is missing from the WebLogic SPI configuration.
Severity	Major
Help Text	**Probable Cause** The specified required property is missing from the WebLogic SPI configuration file. **Suggested Action** 1 Run the WebLogic SPI configuration utility from the Application Bank. Verify that you specified the correct server information for the WebLogic Servers on this managed node. 2 Verify the property is specified correctly in the WebLogic SPI configuration file `/var/opt/OV/wasspi/conf/wlsspi/SiteConfig` on Unix platforms or `\usr\OV/wasspi\wls\conf\SiteConfig` on Windows platforms on the managed node in question.

WASSPI-7

Description	Unable to contact server <*server_name*> at url=<*URL*>, port=<*port*>.
Severity	Critical
Help Text	**Probable Cause** The specified server is not running at the specified port. **Suggested Action** 1 Run the WebLogic SPI configuration utility from the Application Bank. Verify that you specified the correct server name and port information for the WebLogic Servers on this managed node. 2 Verify that the properties, SERVERx_NAME and SERVERx_PORT, are specified correctly in the WebLogic SPI configuration file (`/var/opt/OV/conf/wlsspi/SiteConfig` on Unix platforms or `\usr\OV\wasspi\wls\conf\SiteConfig` on Windows platforms) on the managed node in question. 3 Verify that the WebLogic Server is running on the managed node.

WASSPI-8

Description	Error saving graphing or reporting data to file <*file_name*>.
Severity	Critical
Help Text	**Probable Cause** If the error message specifies the reporting data file, the agent on the managed node might be in an inconsistent state. **Suggested Action** Restart the agent on the managed node. **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. **Suggested Action** 1 See the text following the error message in the WebLogic 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. See the *HP Operations Smart Plug-in for BEA WebLogic Server Configuration 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 <*property_name*>.
Severity	Critical
Help Text	**Probable Cause** A required property is missing from one of the WebLogic SPI configuration files. **Suggested Action** 1 See the text following the error message in the WebLogic SPI error log to help identify the missing property. 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 WebLogic SPI configuration utility from the Application Bank. Verify that you specified the correct information for the WebLogic Servers on the managed node in question. 3 Verify that the missing property is now specified in the WebLogic SPI configuration file (`/var/opt/OV/conf/wlsspi/SiteConfig` on Unix platforms or `\usr\OV\wasspi\wls\conf\SiteConfig` on Windows platforms) on the managed node in question.

WASSPI-10

Description	Encountered problem accessing file *<filename>*.
Severity	Critical
Help Text	**Probable Cause** The specified file could not be found, created, or accessed. This file could be a temporary file. **Suggested Action** 1 See the text following the error message in the WebLogic SPI error log to help identify the file in question and 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 WebLogic SPI configuration file.
Severity	Major
Help Text	**Probable Cause** The number of WebLogic Servers specified in the WebLogic SPI configuration for the managed node in question is 0. **Suggested Action** 1 Run the WebLogic SPI configuration utility from the Application Bank. Verify that you specified the correct server name and port information for the WebLogic Servers on this managed node. 2 Verify that the property, NUM_SERVERS, in the WebLogic SPI configuration file (`/var/opt/OV/conf/wlsspi/SiteConfig` on Unix platforms or `\usr\OV\wasspi\wls\conf\SiteConfig` on Windows platforms) is set to the number of WebLogic Servers on this managed node.

WASSPI-12

Description	Command <*command*> returned error exit code <*exit code*>.
Severity	Critical
Help Text	**Probable Cause** A command started by the WebLogic SPI collector has returned an error (non-zero) exit code. **Suggested Action** 1 Identify the steps to reproduce the problem. 2 Turn on tracing and reproduce the problem. See the *HP Operations Smart Plug-in for BEA WebLogic Server Configuration 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 `opcmon` process.
Severity	Critical
Help Text	**Probable Cause** The WebLogic SPI data collector attempted to run a process to execute an `opcmon` call. Either the process could not be created or was interrupted. **Suggested Action** For UNIX systems, make sure the kernel configurable parameters NPROC and MAXUPRC are set high enough to allow process creation.

WASSPI-14

Description	Unable to find file <*filename*>.
Severity	Critical
Help Text	**Probable Cause** A file required by the WebLogic SPI data collector could not be found. **Suggested Action** 1 See the text following the error message in the WebLogic SPI error log to help identify the file in question and 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 WebLogic SPI on the managed node. 3 Run the WebLogic SPI configuration utility from the Application Bank.

WASSPI-15

Description	Error parsing XML document <*filename*>.
Severity	Critical
Help Text	**Probable Cause** An error occurred while parsing the specified XML document. **Suggested Action** 1 See the text following the error message in the WebLogic 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. See the *HP Operations Smart Plug-in for BEA WebLogic Server Configuration 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 WebLogic SPI, run the SPI configuration utility from the Application Bank to reinstall the WebLogic SPI configuration files.

WASSPI-16

Description	A bad filter was specified for metric <*metric_number*>.
Severity	Major
Help Text	**Probable Cause** A metric filter is incorrectly specified in the metric definitions XML document. **Suggested Action** 1 If the metric is specified in an XML document that was provided by the user, correct the document. See the *HP Operations Smart Plug-in for BEA WebLogic Server Configuration 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 WebLogic SPI, run the SPI configuration utility from the Application Bank to reinstall the WebLogic SPI configuration files.

WASSPI-17

Description	Could not access MBean server on server <*server_name*> at url=<*URL*>, port=<*port_number*>.
Severity	Critical
Help Text	**Probable Cause** A problem occurred while the WebLogic SPI data collector was requesting access to the JMX MBean server on the WebLogic Server. This could be caused by: 1 The JNDI lookup to find the JMX MBean server in the application server failed. 2 The login name specified in the WebLogic SPI configuration does not have the correct permissions in the application server. 3 The password specified in the WebLogic SPI configuration file is incorrect. **Suggested Action** 1 See the text following the error message in the WebLogic 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 WebLogic SPI configuration utility from the Application Bank. Verify that the login name and password are correct for the server in question. 3 In the WebLogic Administration Console, verify that the user is a valid WebLogic user and has the correct permissions. To set the correct permissions, see the *HP Operations Smart Plug-in for BEA WebLogic Server Configuration Guide*. 4 In the WebLogic Administration Console, verify that the MBean server (`weblogic.management.home.`<*server_name*>) is in the JNDI tree of the server in question. Right-click the server in the left pane to view the JNDI tree. If it is not there, restart the WebLogic Server.

WASSPI-18

Description	Error logging to datasource <*datasource_class_name*>. Logging process returned exit code <*exit_code*>.
Severity	Warning
Help Text	**Probable Cause** The agent on the managed node might be in an inconsistent state. **Suggested Action** Restart the agent on the managed node. **Probable Cause** The ddflog process started by the WebLogic SPI data collector returned a non-zero error code. **Suggested Action** 1 Identify the steps to reproduce the problem. 2 Turn on tracing and reproduce the problem. See the *HP Operations Smart Plug-in for BEA WebLogic Server Configuration Guide* Tracing 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-19

Description	Encountered problem instantiating XSLT transformer with <*filename*>.
Severity	Major
Help Text	**Probable Cause** The XSL document that specifies the auto action report output contains errors. **Suggested Action** 1 Reinstall the WebLogic SPI. 2 Run the WebLogic SPI configuration utility from the Application Bank.

WASSPI-20

Description	Encountered problem creating report for metric <*metric_number*>.
Severity	Major
Help Text	**Probable Cause** An error occurred while producing a text report for the specified metric. **Suggested Action** 1 Reinstall the WebLogic SPI. 2 Run the WebLogic SPI configuration utility from the Application Bank.

WASSPI-21

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

WASSPI-23

Description	Error initializing collector analyzer for server <*server_name*>.
Severity	Critical
Help Text	**Probable Cause** An exception was encountered while preparing to monitor server <*server_name*> **Suggested Action** 1 See the text following the error message in the WebLogic 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. See the *HP Operations Smart Plug-in for BEA WebLogic Server Configuration 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	**Probable Cause** A security exception occurred while logging in to server <*server_name*>. **Suggested Action** 1 Run the WebLogic SPI configuration utility from the Application Bank. 2 Verify that you specified the correct login and password on the managed node on which the error occurred. 3 Verify the login has appropriate permissions.

WASSPI-26

Description	The data logging process for <*server_name*> timed-out.
Severity	Major
Help Text	**Probable Cause** Depending on your configuration, either HP Performance Agent or CODA failed to exit before the time-out. **Suggested Action** 1 Restart CODA using the command **`opcagt -start`**. 2 Restart HP Performance Agent using the command **`mwa restart`**.

WASSPI-27

Description	RMI collector unable to process <*command*>.
Severity	Warning
Help Text	**Probable Cause** An exception was encountered while performing an rmid related operation. **Suggested Action** 1 See the text following the error message in the WebLogic 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. See the *HP Operations Smart Plug-in for BEA WebLogic Server Configuration 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 <*rmid_path*> on port <*port*>.
Severity	Critical
Help Text	**Probable Cause** The specified path is already in use. **Suggested Action** Run the WebLogic SPI configuration utility from the Application Bank. Set the RMID_PORT property to a port number which is not currently in use.

WASSPI-31

Description	Lost connection to RMI collector while processing <*command*>.
Severity	Warning
Help Text	N/A

WASSPI-32

Description	Unable to retrieve metadata for mbean <*JMX-ObjectName*>.
Severity	Warning
Help Text	N/A

WASSPI-33

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

WASSPI-34

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

WASSPI-35

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

WASSPI-36

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

WASSPI-37

Description	MBean <*JMX objectname*> on server **<server name>**, does not expose attribute <*attribute name*> 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 <*JMX objectname*> on server <*server name*>, does not expose attribute <*attribute name*>.
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 <*operation name*> on MBean <*JMX objectname*>.
Severity	Major
Help Text	**Probable Cause** An unexpected error occurred while invoking an operation on the specified MBean. The managed resource might 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 <*attribute name*> on MBean <*JMX objectname*>.
Severity	Major
Help Text	**Probable Cause** An unexpected error occurred while setting an attribute on the specified MBean. The managed resource might 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-41

Description	Error getting attribute <*attribute name*> from MBean <*JMX objectname*>.
Severity	Major
Help Text	**Probable Cause** An unexpected error occurred while getting an attribute from the specified MBean. The managed resource might 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-42

Description	Error running command <*command*>.
Severity	Critical
Help Text	**Probable Cause** A command started by the WebLogic SPI collector reported an error. **Suggested Action** 1 Identify the steps to reproduce the problem. 2 Turn on tracing and reproduce the problem. See the *HP Operations Smart Plug-in for BEA WebLogic Server Configuration 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 <*event-type*>.
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 errorlog to determine the root cause which is logged following the error message.

WASSPI-201

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

WASSPI-202

Description	Cannot read file <*filename*>.
Severity	Critical
Help Text	**Probable Cause** 1 A file could not be opened or it could not be found. 2 Permissions might be incorrect or a directory might be corrupt. **Suggested Action** 1 Run the WebLogic SPI configuration utility from the Application Bank. Verify that the correct information has been specified for the WebLogic 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 <*filename*>.
Severity	Critical
Help Text	**Probable Cause** Permissions might be incorrect, or a file or directory might be corrupt. **Suggested Action** 1 Run the WebLogic SPI configuration utility from the Application Bank. Verify that the correct information has been specified for the WebLogic 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 `opcmsg` <*message*>.
Severity	Critical
Help Text	**Probable Cause** There was a problem running `opcmsg`. `opcmsg` might be missing or not have permissions to execute (ITO installation errors) or the system process table might be full. **Suggested Action** 1 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.

WASSPI-205

Description	Error sending `opcmon` <*command*>.
Severity	Critical
Help Text	**Probable Cause** There was a problem running `opcmon`. `opcmon` might be missing or not have permissions to execute (ITO installation errors) or the system process table might be full. **Suggested Action** 1 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.

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** 1 Insufficient permissions. 2 Insufficient disk space. 3 File table problems. **Suggested Action** 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 WebLogic SPI configuration utility from the Application Bank.

WASSPI-208

Description	WebLogic SPI must be configured before it can be used.
Severity	Critical
Help Text	**Probable Cause** The WebLogic SPI has not been configured on this node. **Suggested Action** 1 Run the WebLogic SPI configuration utility from the Application Bank. Verify that you specified the correct information for the WebLogic 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 WebLogic Server.
Severity	Critical
Help Text	**Probable Cause** 1 The server could be down or not responding. 2 The WebLogic SPI might be configured incorrectly. **Suggested Action** 1 Verify that the WebLogic Server is up and running properly. 2 Run the WebLogic SPI configuration utility from the Application Bank. Verify that you specified the correct information for the WebLogic ServerWebLogic Servers on the managed node on which the error occurred.

WASSPI-210

Description	Cannot configure the SPI.
Severity	Critical
Help Text	**Probable Cause** The SPI configuration process failed. **Suggested Action** 1 See the text following the error message in the WebLogic 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 WebLogic SPI and run the WebLogic SPI configuration utility from the Application Bank.

WASSPI-211

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

WASSPI-212

Description	WLS-5 monitor running on this node but no WLS-5 servers configured
Severity	Critical
Help Text	**Probable Cause** The ITO template for WebLogic 5 is assigned to a node but the SPI configuration does not indicate that any WebLogic 5 servers are located on this node. **Suggested Action** 1 If there are no WebLogic 5 server located on this node, unassign the WebLogic 5 templates from this node and redeploy ITO to the managed node. 2 If there is a WebLogic 5 server located on this node, run the WebLogic SPI configuration utility from the Application Bank and specify the correct information in the configuration.

WASSPI-213

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

WASSPI-214

Description	Cannot run program <*program_name*>.
Severity	Critical
Help Text	**Probable Cause** The program failed to run. It might be missing, permissions might be incorrect, or the process table might be full. **Suggested Action** 1 Verify that the file exists. If it is a SPI program and the file is missing, reinstall the WebLogic SPI and run the WebLogic SPI configuration utility from the Application Bank. 2 Verify that the permissions are correct for the ITO user.

WASSPI-215

Description	A WebLogic Server was not found in <*directory*>.
Severity	Critical
Help Text	**Probable Cause** The directory specified as WL_HOME in the WebLogic SPI configuration does not exist on the managed node. **Suggested Action** 1 Verify that a WebLogic Server is installed on the managed node. 2 Run the WebLogic SPI configuration utility from the Application Bank. Verify that the correct information has been specified for WL_HOME on the managed node on which the error occurred.

WASSPI-216

Description	Configuration variable <*name*> missing for server <*server_name*>.
Severity	Critical
Help Text	**Probable Cause** A required SPI configuration property was not found. **Suggested Action** 1 Run the WebLogic 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	WebLogic monitoring has been turned OFF for <*server_name*>.
Severity	Warning
Help Text	**Probable Cause** Collection has been turned off for the specified server. **Suggested Action** If desired, collection can be turned on by setting **`COLLECT = ON`** in the `SiteConfig` file in the WebLogic SPI configuration directory on the managed node. The configuration directory is `/var/opt/OV/conf/wlsspi/` or `/var/opt/OV/conf/wls/` on UNIX platforms or `\usr\OV\wasspi\wls\conf\` on Windows platforms.

WASSPI-219

Description	WebLogic monitoring has been turned ON for <*server_name*>.
Severity	Warning
Help Text	**Probable Cause** Collection has been turned on for the specified server. **Suggested Action** If desired, collection can be turned off by setting **`COLLECT = OFF`** in the `SiteConfig` file in the WebLogic SPI configuration directory on the managed node. The configuration directory is `/var/opt/OV/conf/wlsspi` or `/var/opt/OV/conf/wls/` on UNIX platforms or `\usr\OV\wasspi\wls\conf\` on Windows platforms.

WASSPI-220

Description	This feature only applies to WebLogic 5.1.
Severity	Warning
Help Text	**Probable Cause** User attempted to perform a function on a WebLogic 6 server that only applies to WebLogic 5 servers. **Suggested Action** This function can only be performed on a WebLogic Server version 6.0 and above.

WASSPI-221

Description	<*filename*> does not exist.
Severity	Critical
Help Text	**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, it has not been configured. **Suggested Action** • Log files– If there have never been any entries written to the file, no action is necessary. Otherwise, run the WebLogic SPI configuration utility from the Application Bank. • Property files– Run the WebLogic SPI configuration utility from the Application Bank.

WASSPI-222

Description	<*filename*> is empty.
Severity	Critical
Help Text	**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, it is not properly configured. **Suggested Action** If the file is a configuration file, run the WebLogic SPI configuration utility from the Application Bank.

WASSPI-223

Description	Cannot read <*filename*>.
Severity	Critical
Help Text	**Probable Cause** 1 A file could not be opened or it could not be found. 2 Permissions might be incorrect or a directory might be corrupt. **Suggested Action** 1 Run the WebLogic SPI configuration utility from the Application Bank. Verify that you specified the correct information for the WebLogic 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	Warning
Help Text	**Probable Cause** `ddfcomp` returned an error. This could be because neither MeasureWare nor CODA is installed on the system or because an error occurred while configuring the performance agent. **Suggested Action** 1 If the performance agent is not installed, this error can be ignored. 2 Otherwise, identify the steps to reproduce the problem. 3 Turn on tracing and reproduce the problem. See the *HP Operations Smart Plug-in for BEA WebLogic Server Configuration 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 Configure WLSSPI?
Severity	Critical
Help Text	**Probable Cause** The logfile list is empty. **Suggested Action** Reinstall the SPI and run the WebLogic SPI configuration utility from the Application Bank.

WASSPI-226

Description	Cannot read file <*filename*>.
Severity	Critical
Help Text	**Probable Cause** 1 A file could not be opened or it could not be found. 2 Permissions might be incorrect or a directory might be corrupt. **Suggested Action** 1 Run the WebLogic SPI configuration utility from the Application Bank. 2 Verify that you specified the correct information for the WebLogic 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 performance agent is installed. Data source will not be configured.
Severity	Warning
Help Text	**Probable Cause** If a performance product is available, the SPI will integrate with it. This warning indicates that none is available. **Suggested Action** If you must 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	**Probable Cause** The agent on the managed node might be in an inconsistent state. **Suggested Action** Restart the agent on the managed node. **Probable Cause** `ddflog` returned an error. This could be because the SPI was not properly configured to support logging performance data. **Suggested Action** 1 Try reconfiguring WebLogic SPI 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. See the *HP Operations Smart Plug-in for BEA WebLogic Server Configuration 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	**Probable Cause** The directory does not exist or the user, the agent is running under, does not have appropriate permissions to the directory. **Suggested Action** 1 Run the WebLogic SPI configuration utility from the Application Bank. 2 Reinstall the SPI and run the WebLogic SPI configuration.

WASSPI-230

Description	Cannot get lock <*filename*> after <*time-interval*>
Severity	Critical
Help Text	**Probable Cause** The lock file <*file*> was not cleared in the <*time*> 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. **Suggested Action** Make sure no SPI processes are running. Manually remove the lock file.

WASSPI-231

Description	Error starting JRE <*JVM_file*>: <*message*>
Severity	Critical
Help Text	**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. **Suggested Action** Check your JAVA_HOME or HOME variables in the SPI configuration file. Check for other errors generated at the same time. They might indicate the real cause.

WASSPI-232

Description	Server <*name*> specified on command line, but not in configuration.
Severity	Critical
Help Text	**Probable Cause** There was a `-i` or `-e` specified on the collector command line which specified a server name that was not listed in the SPI configuration file. The collector only knows about servers listed in the configuration file. **Suggested Action** 1 Specify a correct server name on the command line. 2 Run the WebLogic SPI configuration utility from the Application Bank. Verify the WebLogic Server names are correctly listed and spelled in the SPI configuration file.

WASSPI-233

Description	Cannot get advanced monitoring for WLS 5.x server <*name*>
Severity	Critical
Help Text	**Probable Cause** An attempt was made to get metrics from a WebLogic Server version 5 instance. Metrics and advanced monitoring are not supported with WLS version 5. **Suggested Action** 1 Do not specify a WLS version 5 server on the command line of `wasspi_wls_ca`. 2 Run the WebLogic SPI configuration utility from the Application Bank. Verify that you specified the correct server versions. 3 Upgrade WebLogic Server to version 6.0 or greater.

WASSPI-234

Description	Error running program <*file*>, return value: <*n*>
Severity	Critical
Help Text	**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 <*file*> and the return code from attempting to run it is shown as <*n*>. **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.

WASSPI-235

Description	Restart of MeasureWare agent failed
Severity	Warning
Help Text	**Probable Cause** The SPI attempted to automatically restart the MeasureWare agents and the automatic attempt failed. **Suggested Action** Restart the MeasureWare agents manually with the **`mwa restart server`** command.

WASSPI-236

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

WASSPI-237

Description	Setting up Data Source <*datasource*>
Severity	Normal
Help Text	This is an informational message that indicates that a HP Performance Manager or HP Performance Agent datasource was set up.

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-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 might 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-244

Description	Configuration for node <*node*> is invalid
Severity	Critical
Help Text	**Probable Cause** The configuration for the node is not in the expected format. **Suggested Action** Launch the WLSSPI Discover Application from the HP Operations Manager console and select the node from the list. Verify that the properties configured for the node is valid. Re-initiate the Discovery process by selecting the **OK** button on the Confirm Operation window.

WASSPI-245

Description	Unrecognized variable <*var*> is configured for node <*node*>
Severity	Critical
Help Text	**Probable Cause** An unexpected variable was configured for the node. **Suggested Action** Launch the Discover WebLogic Application from the HP Operations Manager console and select the node from the list. Look for the variable <*var*> included in the message and make sure that it is valid. Re-initiate the Discovery process by selecting the **OK** button on the 'Confirm Operation' window.

WASSPI-247

Description	Failed to update the <*product*> configuration for node <*node*> in HPOM server.
Severity	Critical
Help Text	**Probable Cause** The configuration for the node is not in the expected format. **Suggested Action** Launch the Discover WebLogic Application from the HP Operations Manager console and select the node from the list. Verify that the properties configured for the node is valid. Re-initiate the Discovery process by selecting the **OK** button on the Confirm Operation window. If the problem still persists, call HP Support and provide the support representative with the following: 1 The steps and other information on reproducing the problem. 2 The trace files which are located in `%OvInstallDir%\install\WASSPI\WLSSPI\English\Discovery\log` directory

WASSPI-248

Description	Cannot deploy <*policy*> policy group to <*node*>
Severity	Warning
Help Text	**Suggested Action** Please see the section Deployment Troubleshooting in the HP Operations Manager for Windows online help. If the problem still persists, call HP Support.

WASSPI-249

Description	Cannot get the agent installation directory for <*node*>
Severity	Critical
Help Text	**Suggested Action** Redeploy the WLSSPI discovery policy on the managed node. Make sure to uncheck the Deploy policy only if version is newer checkbox if selected. If the problem still persists, call HP Support and provide the support representative with the following: 1 The steps and other information on reproducing the problem 2 The trace files which are located in `%OvInstallDir%\install\WASSPI\WLSSPI\English\Discovery\log` directory

WASSPI-254

Description	Java exited with an error
Severity	Critical
Help Text	**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. **Suggested Action** Check for other errors generated at the same time, they might indicate the real cause. Review the SPI's error log, it might give some other clues.

WASSPI-302

Description	Updating WebLogic SPI configuration in HPOM server
Help Text	This is a normal operation performed by the WebLogic discovery process. If the operation is successful, the entry in the "A" (Action) column for this message should change from R (running) to S (success). However, if the entry in this column changes to F (fail), the operation was not completed successfully. Select this node and launch the Discover WebLogic application again. If problem persists, see the *HP Operations Smart Plug-in for BEA WebLogic Server Configuration Guide.* The chapter called Configuring the WebLogic SPI provides instructions on how to to manually configure the WebLogic SPI.

WASSPI-303

Description	Updated WebLogic SPI configuration in HPOM server
Help Text	WebLogic discovery has discovered some WebLogic Servers on the managed node. It has updated the WebLogic SPI configuration in the HPOM server.

WASSPI-304

Description	No WebLogic Servers were found
Help Text	**Probable Cause**: WebLogic Server was not installed on the node. **Suggested Action**: Verify that WebLogic Server is not installed on the node.
	Probable Cause: There are no WebLogic Servers running in this node. **Suggested Action**: Make sure that all the WebLogic Servers you want this SPI to monitor are up and running before the Discover WebLogic application is run on this node. Only those servers that are running when the Discover WebLogic runs will be automatically configured. You can verify that a WebLogic Server is running by checking its status from its WebLogic administrator console. After starting the WebLogic Servers, launch the Discover WebLogic application again. Make sure to select this node before the application is launched.
	Probable Cause: Discovery needs some more information to find all the WebLogic Servers running on this node. **Suggested Action**: Configure the following properties for this node using the Configure WLSSPI application. Make sure to select this node before launching the application. • JAVA_HOME– The java installation directory used by the WebLogic Servers running on this node. If there are more than one WebLogic installation, select one java installation. For example, `JAVA_HOME=/opt/bea/jdk1.3.1` • HOME_LIST– A list seperated by semicolon, containing the installation directories of all the WebLogic Servers in this node. For example, `HOME_LIST=/opt/weblogic6.1;/opt/weblogic7` Verify you enter the correct values. For example, if `HOME_LIST=<home_dir1>;<home_dir2>` and <*home_dir1*> is a WebLogic 7 or 8 home, verify that the file `<home_dir1>/server/lib/weblogic.jar` exists. • ADMIN_PORTS– A list, seperated by semicolons, containing the ports where the WebLogic Admin servers are listening. If the WebLogic Server is listening on a virtual IP address, the address should also be specified as shown below. For example : `ADMIN_PORTS=15.8.155.197:7001;7045` where 15.8.155.197 is the virtual IP address on w hich the server is listening. • LOGIN=`<weblogic_user_id>` and `PASSWORD=<weblogic_user_password>`– In this instance, <*weblogic_user_id*> is the WebLogic user you want this SPI to use for monitoring the server and <*weblogic_user_password*> is the password for that user. **Note**: If there is more than one WebLogic admin server on this node and if they do not share the same login and password, set the LOGIN and PASSWORD to the most commonly used WebLogic login and password in the Set Access Info for Default Properties window. Select Customize to start the configuration editor and set the LOGIN, PASSWORD, NAME and PORT properties at the server-specific level, where NAME is the name of the WebLogic admin server and PORT is where this admin server is listening. Select the node and launch the Discover WebLogic application.

Help Text (cont.)	**Probable Cause**: An incorrect value was entered for LOGIN, PASSWORD, NAME, HOME_LIST or ADMIN_PORTS. **Suggested Action**: From the HPOM console, select the node and launch the Configure WLSSPI application. Verify that the login and password are correct. Verify that the values assigned to HOME_LIST is correct. For example, if <*home_dir1*> is a WebLogic 7 or 8 home, verify that the file `<home_dir1>/server/lib/weblogic.jar` exists. Verify that the ports given in the ADMIN_PORTS property are those of WebLogic admin server's and they are running. Select the node and launch the Discover WebLogic application.
	If problem persists, refer the *HP Operations Smart Plug-in for BEA WebLogic Server Configuration Guide.* The chapter called "Configuring the WebLogic SPI" provides instructions on how to manually configure the WebLogic SPI. If manual configuration fails, follow these steps: 1 Select the node and launch the Gather Info Info application from the WLSSPI Admin application group 2 Contact your HP representative for assistance.

WASSPI-321

Description	Invalid BEA home directory: <*directory*>
Help Text	**Probable Cause** The BEA_HOME_LIST property was set for the node and the directory (which appears in the message) is not a valid BEA home directory. **Suggested Action** Select the node and launch the Configure WLSSPI application. Verify that BEA_HOME_LIST is set for the node and it contains the directory which was found to be invalid by discovery. On the managed node, verify that the directory exists and it contains the `flicense.bea` and `registry.xml` files. If the directory does not exist or does not contain the mentioned files, find the correct BEA home directories in the managed node and use the Configure WLSSPI application to correct the value set for the BEA_HOME_LIST property. Select the managed node and launch the Discover WebLogic application.

WASSPI-322

Description	Could not find BEA home directory: <*directory*>
Help Text	**Probable Cause** The BEA_HOME_LIST property was set for the node and the directory (which appears in the message) does not exist. **Suggested Action** Select the node and launch the Configure WLSSPI application. Verify that BEA_HOME_LIST is set for the node and it contains the directory which was found to be invalid by discovery. On the managed node, verify that the directory exists and it contains the `flicense.bea` and `registry.xml` files. If the directory does not exist or does not contain the mentioned files, find the correct BEA home directories in the managed node and use the Configure WLSSPI application to correct the value set for the BEA_HOME_LIST property. Select the managed node and launch the Discover WebLogic application.

WASSPI-323

Description	Could not find BEA home directories
Help Text	**Probable Cause** The list of BEA home directories was not found. WebLogic Server was not installed on the node. **Suggested Action** Verify that WebLogic Server is not installed on the node.
	Probable Cause The WebLogic discovery script did not find the BEA home directories on the node. **Suggested Action** Configure the following properties for this node using the Configure WLSSPI application. Make sure to select the node before launching the application. • JAVA_HOME– The java installation directory used by the WebLogic Servers running on this node. If there are more than one WebLogic installation, select one java installation. For example, `JAVA_HOME=/opt/bea/jdk1.3.1` • HOME_LIST– A list seperated by semicolon, containing the installation directories of all the WebLogic Servers in this node. For example, `HOME_LIST=/opt/weblogic7;/opt/weblogic7` Verify you enter the correct values. For example, if <*home_dir1*> is a WebLogic 7 or 8 home, verify that the file `<home_dir1>/server/lib/weblogic.jar` exists. • ADMIN_PORTS– A list, seperated by semicolons, containing the ports where the WebLogic Admin servers are listening. If the WebLogic Server is listening on a virtual IP address, the address should also be specified as shown below. For example : `ADMIN_PORTS=15.8.155.197:7001;7045` where 15.8.155.197 is the virtual IP address on w hich the server is listening. • `LOGIN=<weblogic_user_id>` and `PASSWORD=<weblogic_user_password>`– In this instance, <*weblogic_user_id*> is the WebLogic user you want this SPI to use for monitoring the server and <*weblogic_user_password*> is the password for that user. **Note**: If there is more than one WebLogic admin server on this node and if they do not share the same login and password, set the LOGIN and PASSWORD to the most commonly used WebLogic login and password in the Set Access Info for Default Properties window. Select Customize to start the configuration editor and set the LOGIN, PASSWORD, NAME and PORT properties at the server-specific level, where NAME is the name of the WebLogic admin server and PORT is where this admin server is listening. Select the node and launch the Discover WebLogic application.

WASSPI-324

Description	Could not read WebLogic registry file <*filename*>
Help Text	**Probable Cause** The WebLogic registry file does not exist. **Suggested Actions** On the node, check if the file exists. If the file does not exist, the file was manually deleted. The `registry.xml` file is created by the WebLogic installation in the BEA home directory and should not be deleted. See the WebLogic installation document for more information about this file.
	Probable Cause The directory which contains the file is one of the values assigned to the BEA_HOME_LIST property for the node and is not a BEA home directory. **Suggested Action** Select the node and launch the Configure WLSSPI application. Verify that the BEA_HOME_LIST is configured for the node and its value includes the directory containing the registry file. Verify that the directory exists in the node and it contains the `license.bea` and `registry.xml` files. If the directory does not exist or does not contain the files, find the correct BEA home directories in the node. Use the Configure WLSSPI application to correct the value specified for the BEA_HOME_LIST property. Select the node and launch the Discover WebLogic application.

WASSPI-325

Description	Security access failure. The LOGIN property is missing for WebLogic Server <*server*> on port <*port_number*>
Help Text	**Probable Cause** The LOGIN property was not set for a WebLogic Server **Suggested Action** 1 If a WebLogic user is not already configured for this server, using the WebLogic administrator console, create a user that you want this SPI to use for monitoring this server. 2 Select the node and launch the Configure WLSSPI application. Set the correct LOGIN/PASSWORD properties for this server (overwrite the existing encrypted data). 3 Select the node and launch the Discover WebLogic application.

WASSPI-326

Description	Security access failure. The `PASSWORD` property is missing for WebLogic Server <*server*> on port <*port_number*>
Help Text	**Probable Cause** The PASSWORD property was not set for the WebLogic Server. **Suggested Action** 1 If a WebLogic user is not already configured for this server, using the WebLogic administrator console, create a user that you want this SPI to use for monitoring this server. 2 Select the node and launch the Configure WLSSPI application. Set the correct LOGIN/PASSWORD properties for this server (overwrite the existing encrypted data). 3 Select the node and launch the Discover WebLogic application.

WASSPI-327

Description	Security access failure. The LOGIN and PASSWORD properties are missing for WebLogic Server <*server*> on port <*port_number*>
Help Text	**Probable Cause** The LOGIN and PASSWORD properties were not set for a WebLogic Server. **Suggested Action** 1 If a WebLogic user is not already configured for this server, using the WebLogic administrator console, create a user that you want this SPI to use for monitoring this server. 2 Select the node and launch the Configure WLSSPI application. Set the correct LOGIN/PASSWORD properties for this server (overwrite the existing encrypted data). 3 Select the node and launch the Discover WebLogic application.

WASSPI-328

Description	Security access failure. Invalid LOGIN and/or PASSWORD for WebLogic Server <*server*> on port <*port_number*>
Help Text	**Probable Cause** An invalid LOGIN and/or PASSWORD was set for a WebLogic Server. **Suggested Action** 1 If a WebLogic user is not already configured for this server, using the WebLogic administrator console, create a user that you want this SPI to use for monitoring this server. 2 Select the node and launch the Configure WLSSPI application. Set the correct LOGIN/PASSWORD properties for this server (overwrite the existing encrypted data). 3 Select the node and launch the Discover WebLogic application.

WASSPI-329

Description	A global login and password is required when ADMIN_PORTS property is configured
Help Text	**Probable Cause** The ADMIN_PORTS property was set but a global LOGIN and/or PASSWORD property was not set for a managed node. **Suggested Action** 1 From the HPOM console, use the Configure WLSSPI application to view the value assigned to the ADMIN_PORTS property. 2 From the WebLogic administrator console, create a WebLogic user (if it does not already exist) that you want the WebLogic SPI to use for monitoring the server. 3 From the HPOM console, use the Configure WLSSPI application to set the LOGIN and PASSWORD properties for the node. **Note**: If the ADMIN_PORTS property contains the ports of more than one WebLogic administrator server, verify that the same user ID is configured for those WebLogic administrator servers. If this is not possible, you must manually set the NAME, PORT, LOGIN, and PASSWORD properties for the administrator server. 4 Select the node and launch the Discover WebLogic application.

WASSPI-330

Description	A global login and/or passwod is not configured
Help Text	**Probable Cause** The global LOGIN and PASSWORD property was not set. A global login and password is not required if the login and password for individual WebLogic admin servers was configured. But if all the WebLogic admin servers share the same login and password, you might set the global LOGIN and PASSWORD properties as follows: **Suggested Action** 1 From the HPOM console, use the Configure WLSSPI application to add the LOGIN and PASSWORD properties for the node if it does not already exist. 2 Select the node and launch the Discover WebLogic application.

WASSPI-381

Description	Could not find WebLogic SPI instrumentation
Help Text	**Probable Cause** WebLogic Discovery could not find some files that it needs to function correctly. **Suggested Action** Distribute actions, commands and monitors to the node.

WASSPI-402

Description	Could not get local host
Help Text	**Probable Cause** Could not find the host name of the managed node because the IP address for the host could not be found or there was a security violation. **Suggested Action** Contact your system administrator.

WASSPI-403

Description	Could not find WebLogic java installation
Help Text	**Probable Cause** The Java installation directory was manually deleted from each of the BEA home directories in the managed node or it was never installed by the WebLogic installation script. **Suggested Action** 1 Find the Java installation used by the WebLogic Server running on the node. 2 Select the node and launch the Configure WLSSPI application. Add the JAVA_HOME property for that node. 3 Select the node and launch the Discover WebLogic application.

WASSPI-404

Description	Could not find `weblogic.jar` file
Help Text	**Probable Cause** WebLogic Server was not installed on the node. **Suggested Action** Verify that WebLogic Server is installed on the managed node.
	Probable Cause Discovery could not find the installation directory foWebLogic Server. **Suggested Action** 1 From the HPOM console, select the node and launch the Configure WLSSPI application. Set the HOME_LIST property for this node. 2 Select the node and launch the Discover WebLogic application.

WASSPI-405

Description	An error occured while reading `SiteConfig` file
Help Text	**Probable Cause** Permissions might be incorrect or a file or directory might be corrupt. **Suggested Action** 1 Verify that the permissions are correct for the HP Operations agent user to write to the file `%OvAgentDir%/conf/wlsspi/SiteConfig`. Contact your system administrator to correct this. 2 Select the node and launch the Discover WebLogic application. 3 If the problem still persists, launch the Gather Info application and call HP Support. Provide the support representative with the following: — The steps and other information on reproducing the problem. — The file generated by the Gather Info application.

WASSPI-406

Description	Retrieve WLSSPI configuratin for node timed out
Help Text	**Probable Cause** Communication failed between the management server and managed node. **Suggested Action** Select the node and launch the Discover WebLogic application. If it fails, contact your system administrator.
	Probable Cause It took more than 2 minutes for the WLSSPI configuration to reach the managed node from the management server. **Suggested Action** Select the node and launch the Discover WebLogic application.
	Probable Cause The Configure WLSSPI application was being executed when WebLogic discovery was run on the node. **Suggested Action** Make sure that the Configure WLSSPI application is not running on the management server. Select the node and launch the Discover WebLogic Discovery application.
	Probable Cause The discovery script in the management server failed. **Suggested Action** On the management server, open the trace file: `%OvInstallDir%/install/WASSPI/WLSSPI/English/Discovery/log`. The trace file is <*node_name*>`_disc_server.log` where <*node_name*> is the primary node name of the managed node. If any error messages are reported in the trace file, follow these steps: 1 Select the node and launch the Gather Info application from the WLSSPI Admin application group. 2 Call HP Support and provide the support representative with the following: — The steps and other information on reproducing the problem — The file generated by the Gather Info application.

All Other Errors

Description	An unknown error appears in the WebLogic SPI error log.
Severity	Warning
Help Text	**Suggested Action** 1 See the text following the error message in the WebLogic 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. See the *HP Operations Smart Plug-in for BEA WebLogic Server Configuration Guide* for instructions on how to turn on tracing. 4 Run the Self-Healing Info application. 5 Contact HP support with the information gathered in the previous steps.

A File Locations

You can find the WebLogic SPI configuration files and error logs in specific directories.

HPOM Management Server File Locations

Operating System	File	File Location
HP-UX	Configuration	`/opt/OV/conf/wlsspi`
Solaris	Configuration	`/opt/OV/conf/wlsspi`

Managed Node File Locations

On Windows or UNIX managed nodes that were already running the WebLogic SPI and are being switched to a non-root HTTPS agent environment (UNIX only. If these directories do not exist, see the next table for file locations):

Operating System	File	File Location
HP-UX, Solaris, Linux	Configuration	`/var/opt/OV/conf/wlsspi`
HP-UX, Solaris, Linux	Error Logs	`/var/opt/OV/log/wlsspi`
AIX	Configuration	`/usr/lpp/OV/conf/wlsspi`
AIX	Error Logs	`/usr/lpp/OV/log/wlsspi`
Windows (HTTPS)	Configuration	`\Documents and Settings\All Users\Application Data\HP\HP BTO Software\wasspi\wls\conf`
Windows (HTTPS)	Error Logs	`\Documents and Settings\All Users\Application Data\HP\HP BTO Software\wasspi\wls\log`

On newly configured WebLogic 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/wlsspi`
HP-UX, Solaris, Linux	Error Logs	`/var/opt/OV/log/wlsspi`
AIX	Configuration	`/var/opt/OV/conf/wlsspi`
AIX	Error Logs	`/var/opt/OV/log/wlsspi`

B The Configuration

This appendix explains the configuration structure and how to use the configuration editor, describes of the configuration properties, and provides samples of the configuration.

Structure

See Sample Configurations on page 178 for examples of the configuration. The basic structure of the configuration is given below. 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. The 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> ...
}
```

You can use GROUP blocks to group together nodes having common properties. <group_name> denotes a group of nodes with common properties. If you repeat a GROUP block <group_name> within the configuration file, then the last definition takes precedence.

<nodename> lists the nodes in the group and is the primary node name configured in HPOM.

You can set the common properties using the NODE block.

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

To view, set, or edit GROUP block properties, in the configuration editor, select the Default Properties item under 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 <nodename> (to set properties for a single node).

To set properties for a group, enter the <group_name> defined by the GROUP block and define the common properties.

To set properties for a single node, enter the <nodename> and define the properties.

<nodename> is the primary node name configured in HPOM.

If you repeat a property definition within the NODE block, the last definition takes precedence.

To view, set, or edit NODE block properties, in the configuration editor, select the Default Properties item under the <Node_Name> folder.

Server-Specific Properties

Apart from the high level properties, you can also view, set, or edit properties specific to a server. Each property specified as SERVER<*n*>_config_property refers to a specific WebLogic Server instance. When more than one WebLogic Servers are running on a given managed node, the number <*n*> differentiates the servers. Numbering begins at 1 and each WebLogic 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. Global <*property*>

The Configuration Editor

You can use the configuration editor to view and edit the configuration. You must update the configuration using the configuration editor only.

The main components of the configuration editor are:

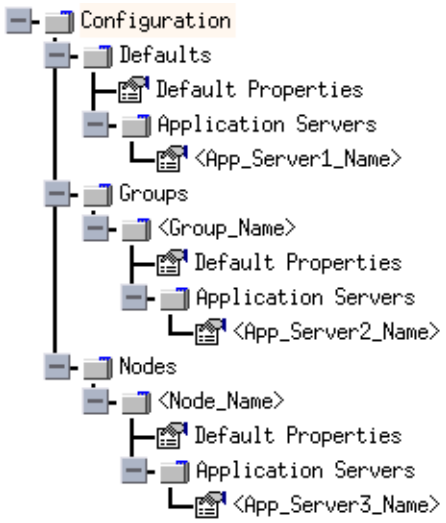
- Tree
- Buttons
- Actions

Configure WLSSPI– Tree

The Configure WLSSPI tree that appears in the left pane of the WLSSPI Configure Tool: Configuration Editor window, shows the WebLogic 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 do not appear. If you launch the Configure WLSSPI application for the first time without selecting any node, the Nodes folder does not appear in the tree.



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	Contains a list of all the application servers. This folder can appear under Defaults (global properties), Group_Name (GROUP block), or Node_Name (NODE block).
<*Application_Server_Name*>	The server name as defined in the WebLogic Server.
Configuration	Contains all the WebLogic SPI configuration information for the WebLogic environment.
Default Properties	Lists the configuration properties that have been set. This item appears under Defaults (global properties), Group_Name (GROUP block), or Node_Name (NODE block).
Defaults	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 Group_Name and Node_Name folders (for more information see Property Precedence on page 156).
Groups	Represents the GROUP block.
<*Group_Name*>	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 (for more information see Property Precedence on page 156).
Nodes	Represents the NODE block.
<*Node_Name*>	Represents a single node whose name matches the value returned by the HPOM variable $OPC_NODES. This value is the primary node name configured in HPOM. Default properties set at this level apply to the specified node only (for more information see Property Precedence on page 156).

Configure WLSSPI– Buttons

You can use the buttons available in the WebLogic SPI configuration editor to perform several functions. The following table lists the buttons and their description:

Button	Description
Cancel	Exit the configuration editor. If you click **Cancel** (without saving the changes) after adding or removing an application server, node, or group or modifying a configuration property, the Confirm Cancel window opens. Click **Save and Exit** to save the changes before exiting, click **Exit without Save** to exit without saving the changes, or click **Return to Editing** to continue editing the configuration (changes are not saved).
Next	Exit the configuration editor. When you click **Next** the Confirm Operation window opens. This window contains a list of the nodes you selected before launching Configure WLSSPI. The selected managed nodes' configurations are updated with your changes. Changes made to the non-selected node (not displayed in the Confirm Operation window) are saved to the HPOM management server's configuration. To save changes on those managed node's configuration, you must select those managed nodes from the node bank, re-launch Configure WLSSPI, and then exit.
Finish	Exit the configuration editor. This button appears instead of the **Next** button if you launch Configure WLSSPI without selecting any nodes.
Save	Save changes to the HPOM management server's configuration and continue editing the configuration. You can also click **File** → **Save** to save your changes.

Configure WLSSPI– Actions

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

Action	Description	Selected Tree Item
Add Application Server	To add an application server. For more information, see Add Application Server on page 160.	Application Servers Defaults <*Group_Name*> <*Node_Name*>
Add Group	To create a group to which you can assign nodes that have common properties. For more information, see Add Group on page 161.	Any item in the tree Any item in the tree
Add Node	To add a managed node to the Nodes folder. For more information, see Add Node on page 161.	Any item in the tree Any item in the tree

Action	Description	Selected Tree Item
Exit	To exit the configuration editor. This action is available from the File menu. If any changes have not been saved, the Confirm Cancel window opens.	Any item in the tree Any item in the tree
Remove Application Server/Remove ALL App Servers	To remove one or all application servers listed. For more information, see Remove Application Server/ Remove ALL App Servers on page 162.	Application Servers <*Application_Server_Name*>
Remove Group/ Remove ALL Groups	To remove one or all the WebLogic SPI groups listed. For more information, see Remove Group/ Remove ALL Groups on page 162.	Groups <*Group_Name*>
Remove Node/ Remove ALL Nodes	To remove one or all managed nodes listed. For more information, see Remove Node/Remove ALL Nodes on page 163.	Nodes <*Node_Name*>
Save	To save changes to the configuration. This action is available from the File menu only if you make changes to the configuration.	Any item in the tree Any item in the tree
Set Configuration Properties	You can click Set Configuration Properties tab to set the WebLogic SPI configuration properties. For more information, see Set Configuration Properties Tab on page 163.	<*Application_Server_Name*> Default Properties
View Current Configuration	You can click View Configuration Settings tab to view the WebLogic SPI configuration properties. For more information, see Set Configuration Properties Tab on page 163.	Any item in the tree Any item in the tree

Add Application Server

You can add a WebLogic Server instance at the global properties, GROUP, or NODE level in the WebLogic 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). For more information about the ALIAS property, see Property Definitions on page 167.

To add an application server, follow these steps:

1 In the WLSSPI Configure Tool: Configuration Editor window, 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 WLSSPI Configure Tool: Configuration Editor: Add App Server window opens.

2 Enter the server name in the Application Server Name box. This is the name of the application server as defined in WebLogic Server and is case-sensitive. The WebLogic administration console displays the server names of all configured application servers in a domain. Use these names for the Application Server Name.

3 Enter the port name in the Application Server Port box. This is the port the WebLogic Server listens on. The WebLogic administration console displays the port numbers of all configured application servers in a domain. Use these for the Application Server Port.

4 Click **OK**.

The NAME and PORT properties are set.

The application server is added and you can view its properties. You might also set additional configuration properties for this server. For more information, see Set Configuration Properties Tab on page 163.

5 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

You can assign nodes with common properties to a group in the WebLogic SPI configuration.

To add a group, follow these steps:

1 In the WLSSPI Configure Tool: Configuration Editor window, right-click any item in the tree and select **Add Group**.

The WLSSPI Configure Tool: Configuration Editor: Add Group window opens.

2 Enter the group name in the Group Name box. 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 active.

4 Click **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** dropdown list. For more information, see Set Configuration Properties Tab on page 163.

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 select **Save**.

Add Node

To add a managed node to the WebLogic SPI configuration, follow these steps:

1 In the WLSSPI Configure Tool: Configuration Editor window, right-click any item in the tree and select **Add Node**. The WLSSPI Configure Tool: Configuration Editor: Add Node window opens.

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 dropdown list, select a node to add.

3 Click **OK**.

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

4 Set the configuration properties for this node using the Select a Property to Set... dropdown list. For more information, see Set Configuration Properties Tab on page 163.

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 select **Save**.

Remove Application Server/Remove ALL App Servers

To remove one WebLogic Servers listed from the WebLogic SPI configuration, follow these steps:

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 from the configuration.

Click **Cancel** to cancel the removal of the application server (the application server name appears the next time you launch Configure WLSSPI). In the Confirm Cancel window, click **Exit without Save**.

To remove ALL application servers, follow these steps:

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.

Select **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 launch Configure WLSSPI). In the Confirm Cancel window, click **Exit without Save**.

Remove Group/Remove ALL Groups

To remove one or all the WebLogic SPI groups listed from the WebLogic SPI configuration, follow these steps:

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 launch Configure WLSSPI). In the Confirm Cancel window, click **Exit without Save**.

Remove Node/Remove ALL Nodes

To remove one managed node listed from the WebLogic SPI configuration, follow these steps:

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.

   Select **Cancel** to cancel the removal of the node (the node name appears the next time you launch Configure WLSSPI). In the Confirm Cancel window, click **Exit without Save**.

To remove ALL nodes, follow these steps:

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 launch Configure WLSSPI). In the Confirm Cancel window, click **Exit without Save**.

Set Configuration Properties Tab

You can use this tab to set the WebLogic 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, in the configuration editor select the item and click the **Set Configuration Properties** tab in the right pane.

Setting a Property

To set a property in the configuration, follow these steps:

1. In the configuration editor, select a property from the Select a Property to Set... dropdown list.
2. Click **Set Property**. The property and an empty value filed 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 click **Set Property**, a separate window opens. Enter the login and password values in this window.

For more information about individual properties, see Configuration Properties on page 166.

Modifying a Property

To modify a property (except LOGIN) in the configuration, follow these steps:

1. In the configuration editor, select the property you want to modify.
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). For more information about the ALIAS property, see Property Definitions on page 167.
4. Repeat steps 1 - 3 for each property to modify.
5. Click **Save**.

To modify the LOGIN property in the configuration, follow these steps:

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

For more information about individual properties, see Configuration Properties on page 166.

Removing a Property

To remove a property from the configuration, follow these steps:

1. In the configuration editor, select the property you want to remove.
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 set this property only by selecting or clearing the check box.

Selecting the check box (default) causes the discovery templates (if distributed) to automatically update the WebLogic 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 Current Configuration Tab

You can use this tab to view all the WebLogic SPI configuration properties set in the configuration on the HPOM management server or the WebLogic SPI configuration properties for the selected application servers, groups, or nodes.

To view the configuration properties of an item, in the configuration editor 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 HPOM 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. If you select 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 "<*>" that appears after the property.

If you clear the View Inherited Properties 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 a 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

The WebLogic SPI maintains a configuration that consists of property values that are discovered by the discovery process or are user defined.

Table 16 lists the following properties by WebLogic SPI requirements:

Property	Name of the property.
Requirements	Property requirements for specific components are the following: **R** - Required: The property must be set. *C* - Conditional: The property might 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.
WebLogic SPI	The configuration requirements for the WebLogic SPI to work.
Discovery Process	The requirements for the discover process to work.
Auto-Discovered	The property is automatically set by the discover 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.

For a description of the property, see Table 17.

Property Definitions

Table 16 Properties Listed by WebLogic SPI Requirements

Property	Requirements		Auto-Discovered	Level of Configuration	
	WebLogic SPI	Discovery Process		Default Properties	Application Server
HOME	**R**	O	✓	✓	✓
JAVA_HOME	**R**	C	✓	✓	✓
LOGIN	**R**	**R**		✓	✓
NAME	**R**		✓		✓
PASSWORD	**R**	**R**		✓	✓
PORT	**R**		✓		✓
ADDRESS	*C*	O	✓[a]		✓
ADMIN_HOST	*C*		✓		✓
ADMIN_PORTS	*C*		✓		✓
ADMIN_PORTS	C	C		✓	
ALIAS	C				✓
AUTO_DISCOVER	C			✓	✓
BEA_HOME_LIST	C	O	✓	✓	
COLLECT_METADATA	C	O		✓	✓
GRAPH_URL	C			✓	
HOME_LIST	C	C		✓	
JMB_JAVA_HOME	C			✓	✓
JMX_CLASSPATH	C			✓	✓
KEYSTORE	C			✓	✓
LOGFILE	C				✓
NODE_NAMES	C	C			✓
PASSPHRASE	C			✓	✓
PROTOCOL	C			✓	✓
RMID_PORT	C			✓	
RMID_START_TIME	C			✓	
START_CMD	C				✓
STOP_CMD	C				✓
USER	C			✓	✓
URL_PATH	C				✓
VERSION	C		✓		✓
EXCLUDE_SAMPLES	O			✓	✓

Table 16 Properties Listed by WebLogic SPI Requirements (cont'd)

Property	Requirements		Auto-Discovered	Level of Configuration	
	WebLogic SPI	Discovery Process		Default Properties	Application Server
MAX_ERROR_LOG_SIZE	O			✓	
TIMEOUT	O			✓	✓
TYPE	O			✓	✓
UDM_DEFINITIONS_SOURCE	O			✓	✓

a. If a WebLogic Admin server is managing a remote WebLogic Server that is listening on a virtual IP address, you must configure the managed node on which the remote WebLogic Server is running with an alias in HPOM, for ADDRESS to be automatically discovered. To configure the virtual IP address in HPOM, see the Description section of the ADDRESS property.

In Table 17, Application Server A is mentioned repeatedly. Application Server A represents the WebLogic Application Server for which you are setting the properties.

Table 17 Configuration Properties

Property	Applicable WebLogic Version	Required/ Conditional/ Optional	Description
ADDRESS	7.0, 8.1, 9.x, 10.0	**Conditional** Required if the server is running on a virtual IP address, is on a remote node, or is not using the primary IP address of that node.	The domain name or IP address where the server is listening. If ADDRESS is not set, the WebLogic SPI connects to the server using the node's primary address. **Example**: `SERVER1_ADDRESS = product.hp.com`
ADMIN_HOST	7.0, 8.1, 9.x, 10.0	**Conditional** Required if you want to start and stop the WebLogic console using the Start WebLogic Console application	Name of the node on which the WebLogic administration server, which is managing Application Server A is running. This property must be set to start the WebLogic Server Console application. **Example**: `SERVER1_ADMIN_HOST=localhost`
ADMIN_PORTS	7.0, 8.1, 9.x, 10.0	**Conditional** Required if you want to start and stop the WebLogic console using the Start WebLogic Console application	The port of the WebLogic administration server managing Application Server A. Must be set in order to start the WebLogic Server Console application. **Example**: `SERVER1_ADMIN_PORT=7005`

Table 17 Configuration Properties (cont'd)

Property	Applicable WebLogic Version	Required/ Conditional/ Optional	Description
ADMIN_PORTS	7.0, 8.1, 9.x, 10.0	**Conditional** Required if the domain configuration file of the WebLogic Admin servers is not located in the default directory.	The port numbers of WebLogic Admin servers whose domain configuration file, `config.xml`, is not located in the default directory listed below: • For WebLogic 7 or 8 *<BEA_Home_Dir>*/`user_projects/`*<WebLogic_Domain>*/ • For WebLogic 9.x, 10.0 *<BEA_Home_Dir>*/`user_projects/domains/`*<domain_name>* where, *<WebLogic_Install_Dir>* is the directory where the WebLogic Server is installed, *<BEA_Home_Dir>* is the directory that contains the `registry.xml` file, and *<WebLogic_Domain>* is the WebLogic domain name. If the WebLogic Admin server is listening on a virtual IP address, include this virtual IP address before the port number, separated by a colon. For example, *<virtual_ip_address>*: *<port_number>*. The LOGIN and PASSWORD for the WebLogic Admin servers must be set at the NODE block level. The LOGIN and PASSWORD must be the same for all WebLogic Admin servers running on the same node. The port numbers set by this property are the ports used by the WebLogic Admin servers.

Table 17 Configuration Properties (cont'd)

Property	Applicable WebLogic Version	Required/ Conditional/ Optional	Description

ALIAS	7.0, 8.1, 9.x, 10.0	**Conditional**
		Required if more than one application server on a system share the same server name.
			Unique name assigned to an application server on a managed node if more than one application server on a node share the same server name. The alias, if set, is the name used in messages, reports, and graphs (otherwise, NAME is used).
			If you modify the ALIAS, the data for the old alias is saved, but is not mapped to the new alias.
			Example:
			`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`
			`}`

AUTO_DISCOVER	7.0, 8.1, 9.x, 10.0	**Conditional** Required if you do *not* want the discovery policy to automatically overwrite the configuration information.	Select the AUTO_DISCOVER check box in the configuration editor to automatically update the WebLogic Server configuration information in the service map and configuration. Clear the AUTO_DISCOVER check box in the configuration editor if you want to manually configure the WebLogic Server configuration and do not want the discovery policy to automatically overwrite the configuration information.

Table 17 Configuration Properties (cont'd)

Property	Applicable WebLogic Version	Required/ Conditional/ Optional	Description
BEA_HOME_LIST	7.0, 8.1, 9.x, 10.0	**Conditional** Required if the WebLogic Server software registry does not exist on a managed node.	This is the software registry used by all WebLogic products. It contains information about all WebLogic products installed on the system. If you do not use BEA's installation scripts to install the WebLogic Server, the software registry is not created. On a UNIX managed node, the software registry is created in the file `$HOME/bea/beahomelist`, where `$HOME` is the home directory of the user who installed the WebLogic Server. On a Windows managed node, the software registry is created in the file `beahomelist` or is defined by the BEAHOMELIST registry. On a UNIX managed node, directory names with spaces are not supported. If the software registry does not exist and this property is not set, the Discovery templates generate an error message.
COLLECT_METADATA	7.0, 8.1, 9.x, 10.0	**Conditional** Required if you want to use the MBean Explorer in the JMX Metric Builder application.	Set the value of COLLECT_METADATA to **ON** to collect metadata (MBean information) displayed by the JMX Metric Builder application. This metadata is used to create UDMs (user defined metrics). Metadata for each MBean server is saved in the following file: `/var/opt/OV/wasspi/wls/metadata/`*<managed_node>*`/`*<NAME|ALIAS>*`.xml`, `/var/opt/OV/metadata/wls/`*<managed_node>*`/`*<NAME|ALIAS>*`.xml`, or `\<%OvAgentDir%>\wasspi\wls\metadata\`*<managed_node>*`\`*<NAME|ALIAS>*`.xml` where NAME and ALIAS are the properties set for the managed node and ALIAS is always used if it is set. **Default:** OFF.

Table 17 Configuration Properties (cont'd)

Property	Applicable WebLogic Version	Required/ Conditional/ Optional	Description
EXCLUDE_SAMPLES	7.0, 8.1, 9.x, 10.0	**Optional**	Set the value to **`true`** to *not* discover WebLogic Server sample programs. This reduces the time taken by the discovery process. Sample programs are located in the following directories: WebLogic 7, 8, 9.x, and 10.0 <*WL_Install_Dir*>`/samples/domains/medrec` **Default:** false. **Example**: **`EXCLUDE_SAMPLES = true`**
GRAPH_URL	7.0, 8.1, 9.x, 10.0	**Conditional** Required if you want to use the View Graphs application (HP Open View Performance Manager must be installed).	The URL used to launch HP Performance Manager. Set the GRAPH_URL property at the global level only. **Examples**: `GRAPH_URL =` http://<server_name>:<port_no>/OVPM (PM 8.10 on UNIX and Windows), the default port number is 8081.
HOME	7.0, 8.1, 9.x, 10.0	**Required**	The directory where the WebLogic Server is installed. **Example**: `HOME = /opt/bea/wlserver6.0sp1`
HOME_LIST	7.0, 8.1, 9.x, 10.0	**Conditional** Required if the BEA `registry.xml` file is not accurate or cannot be found. You can face this problem if you do not use BEA's installation scripts to install the WebLogic Server software and Service Packs.	List of directories where the WebLogic Server is installed. Each directory is separated by a semicolon. This list is used by discovery. On a UNIX managed node, directory names with spaces are not supported.
JAVA_HOME	7.0, 8.1, 9.x, 10.0	**Required** Required by the discovery process if there is more than one directory where Java is installed.	The directory where Java, that is used by the collector, is installed . The java engine is expected to be `$JAVA_HOME/bin/java`. **Example**: `JAVA_HOME = /opt/bea/jdk130`
JMB_JAVA_HOME	N/A	**Conditional** Required if you are using the JMX Metric Builder.	The directory where Java (JDK 1.4.1 or higher) is installed. This is the java that is used by the JMX Metric Builder on the HPOM management server. The JDK must be version 1.4.1 or higher.

Table 17 Configuration Properties (cont'd)

Property	Applicable WebLogic Version	Required/ Conditional/ Optional	Description
JMX_CLASSPATH	N/A	**Conditional** Required if you are using the JMX connector to monitor a non-WebLogic MBean server.	The location of the jar file(s) implementing JMX. **Example**: `JMX_CLASSPATH = /opt/JMX/Sun/lib/jmxri.jar`
KEYSTORE	8.1, 9.x, 10.0	**Conditional** Required if using SSL.	The fully-qualified path to the SSL trust keystore file. **Default**: WebLogic's demo keystore
LOGFILE	7.0, 8.1, 9.x, 10.0	**Conditional** Required only if the logfile names returned by WebLogic Server are not those desired to be monitored.	A comma-separated list of fully qualified file names of WebLogic Server log files. Setting this property overrides any logfiles that the SPI would otherwise be monitoring for this server. **Default**: `<home>/<NAME>/weblogic.log`
LOGIN	7.0, 8.1, 9.x, 10.0	**Required**	The WebLogic Server admin user configured at installation. **Example**: `SERVER1_LOGIN = johndoe`
MAX_ERROR_LOG_SIZE	7.0, 8.1, 9.x, 10.0	**Conditional** Required if you want an error log file larger than 2MB	The maximum size allowed for the error log file. When the error log file reaches the maximum size, 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. **Default**: 2MB **Example**: `MAX_ERROR_LOG_SIZE = 20`
NAME[a]	7.0, 8.1, 9.x, 10.0	**Required**	The server name as defined in the WebLogic Server. Use the WebLogic administration console to obtain this information. If a system shares the same server name (the value of NAME is the same within a NODE block), use ALIAS to uniquely identify each server. This name is used in messages, reports, and graphs unless `ALIAS` is set. **Example**: `SERVER1_NAME = exampleServer`

Table 17 Configuration Properties (cont'd)

Property	Applicable WebLogic Version	Required/ Conditional/ Optional	Description
NODE_NAMES	7.0, 8.1, 9.x, 10.0	**Conditional** Required if a remote WebLogic Server is running on a virtual IP address.	The virtual IP address where the server is listening. If NODE_NAME is not set for the remote WebLogic Server, it is not automatically discovered. **Example**: `SERVER1_NODE_NAMES = 15.19.20.21`
NUM_SERVERS	7.0, 8.1, 9.x, 10.0	**Optional**	The number of WebLogic Servers on the managed node. **Example**: `NUM_SERVERS = 3`
PASSPHRASE	8.1, 9.x, 10.0	**Conditional** Required if the configured keystore requires a passphrase for read operations.	The passphrase defined when the keystore was created on your WebLogic Server. If a keystore was not defined with a password, do not set this property. When you type in the PASSPHRASE, it displays as plain text in the GUI. When you save the properties or change the view in the GUI, the PASSPHRASE is encrypted. A PASSPHRASE must contain at least two characters.
PASSWORD	7.0, 8.1, 9.x, 10.0	**Required**	The password for the LOGIN. If LOGIN is configured, a password must be defined. **Example**: `SERVER1_PASSWORD = johndoe123`
PORT	7.0, 8.1, 9.x, 10.0	**Required**	The port the WebLogic Server listens on. Use the WebLogic administration console to get the port number. **Example**: `SERVER1_PORT = 7001`
PROTOCOL	8.1, 9.x, 10.0	**Conditional** Required if using SSL on the application server port.	Specifies if the application server port is using SSL or non-SSL. Valid values are: • t3 for non-SSL • t3s for SSL If PROTOCOL is not set, it takes the default, which is t3. If PROTOCOL is set and you click **Set Property**, the default value becomes t3s. If an invalid PROTOCOL is set or it does not match the application port, HPOM reports the application server as down.

Table 17 Configuration Properties (cont'd)

Property	Applicable WebLogic Version	Required/ Conditional/ Optional	Description
RMID_PORT	8.1, 9.x, 10.0	**Conditional** Required if the default port on which rmid listens is already in use.	The port on which rmid listens. By default, if an HPOM 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 WebLogic Server and an MBean server, the SPI uses ports 9240 and 9241 respectively. But, if RMID_PORT is set, the SPI uses this one port for all servers. For example, if you are monitoring a WebLogic Server and an MBean server and set RMID_PORT to 9250, the SPI uses port 9250 only for both the servers. You cannot set this property at the application server level. **Default**: WebLogic Server: 9240; JMX connector: 9241 **Examples**: `RMID_PORT = 9250`
RMID_START_TIME	8.1, 9.x, 10.0	**Conditional** Required if rmid takes longer than 30 seconds to start.	The amount of time, in seconds, to wait for rmid to start before timing out. **Default**: 30 (seconds) **Examples**: `RMID_START_TIME = 60`
START_CMD	7.0, 8.1, 9.x, 10.0	**Conditional** Required if you want to start the WebLogic Server from the HPOM console	This system command is run when the Start WebLogic application is used. This command is run by USER, which must be set for the Start WebLogic application to work. **Note:** This command must exit. That is, the WebLogic Server 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/weblogic start`
STOP_CMD	7.0, 8.1, 9.x, 10.0	**Conditional** Required if you want to stop the WebLogic Server from the HPOM console	This system command is run when the Stop WebLogic application is used. This command is run by USER, which must be set for the Start WebLogic application to work. **Example**: `SERVER1_STOP_CMD = /sbin/init.d/weblogic stop`

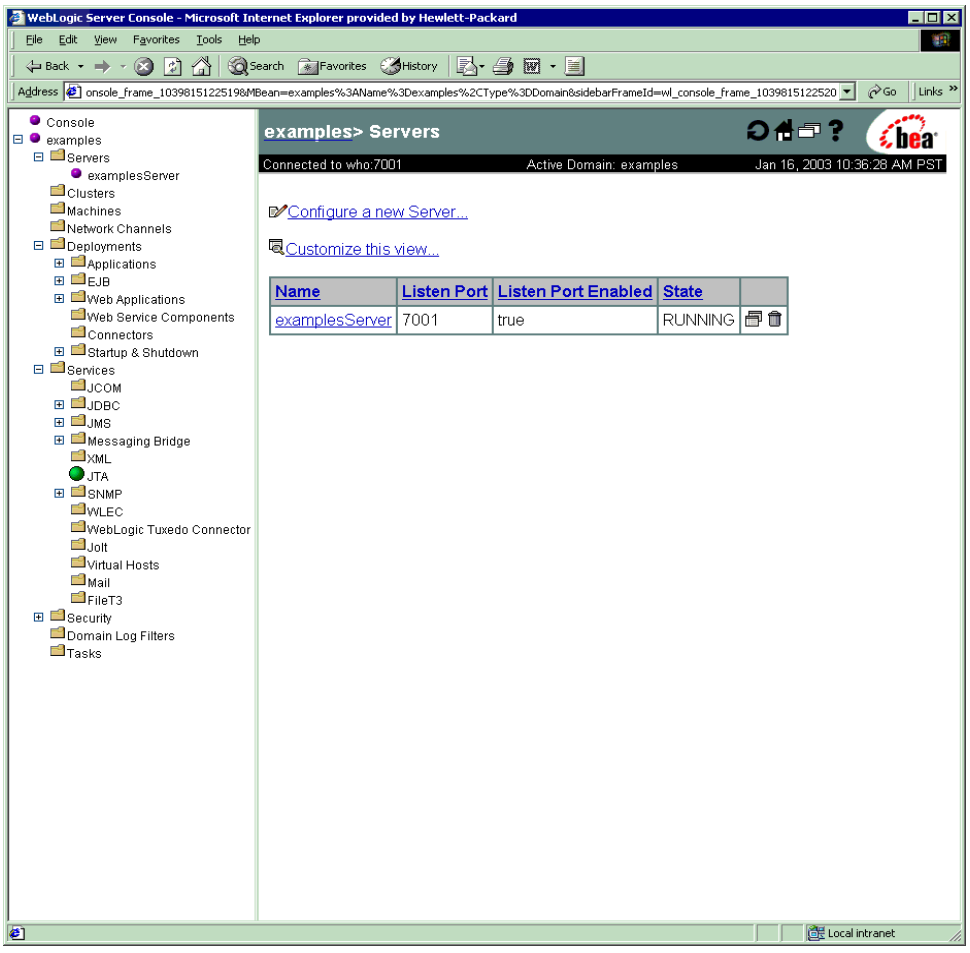
Table 17 Configuration Properties (cont'd)

Property	Applicable WebLogic Version	Required/ Conditional/ Optional	Description
TIMEOUT	7.0, 8.1, 9.x, 10.0	**Optional**	The maximum amount of time (in seconds) that the WebLogic SPI can take to connect to the WebLogic Server. When the specified time is exceeded, the WebLogic SPI sends an alarm to the message browser indicating that the WebLogic Server is unavailable. If metric B002_ServerStatusRep is being collected, the unavailability of the server is logged. If you do not want a time limit, set this property to -1. **Default**: 120 (seconds).
TYPE	7.0, 8.1, 9.x, 10.0	**Optional** Required if you are configuring a JMX connector	The type of JMX connector. Set TYPE to `ovrmi` if you are configuring a JMX connector. Do not change the default value of TYPE if you are using WebLogic's MBean server. **Default**: weblogic. **Example**: `SERVER1_TYPE=weblogic`
UDM_DEFINITIONS_SOURCE	7.0, 8.1, 9.x, 10.0	**Optional**	The path name to or file name of the metric definitions XML file on the HPOM management server. If a path name is set, the `wasspi_wls_udmDefinitions.xml` file is the assumed file name of the UDM file. **Default**: `/opt/OV/conf/wlsspi/wasspi_wls_udmDefinitions.xml`. **Example**: `SERVER1_UDM_DEFINITIONS_SOURCE = /opt/OV/conf/wlsspi/udm.xml`
URL_PATH	9.x, 10.0	**Conditional**	The path part of the JSR-160 connector server URL. **Example:** `SERVER1_URL_PATH=jndi/weblogic.management.mbeanservers.domainruntime`
USER	7.0, 8.1, 9.x, 10.0	**Conditional** Required if you want to start and/or stop the WebLogic Server from the HPOM console	The system username for starting and stopping the WebLogic Server from the HPOM Console. **Default:** the username under which the HP Operations agent runs. **Example**: `USER = weblogic`

Table 17 Configuration Properties (cont'd)

Property	Applicable WebLogic Version	Required/ Conditional/ Optional	Description
VERSION	7.0, 8.1, 9.x, 10.0	**Conditional** Required for WebLogic Versions 7 and 8	The version number of the WebLogic Server in the format *Major#* [*Minor#*] where: *Major#* - The primary version number (for example, 7.0) *Minor#* - The service pack installed (for example, 1 for SP1). If *Minor#* is not specified, the default value 0 is taken (no service pack installed).

a. The WebLogic administration console displays the server names and port numbers of all configured application servers in a domain. Use these names and numbers when defining NAME and PORT.



Sample Configurations

The following examples illustrate various features and utilization methods.

Example 1: Single Node/Two Servers

The following example is of two servers, an administration server and a managed server, running on a single node. The properties HOME and JAVA_HOME are global defaults that apply to all servers and nodes. When the configuration is saved, passwords are encrypted.

```
HOME = /opt/bea/wlserver_10
JAVA_HOME=/opt/bea/jdk131
NODE main.rose.hp.com
{
  SERVER1_NAME= adminserver
  SERVER1_PORT= 7001
  SERVER1_LOGIN= system
  SERVER1_PASSWORD = password
  SERVER2_NAME= managedserver
  SERVER2_PORT= 7005
  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, might have one or two properties that you need to set differently. You can address these kinds of situations in three 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. For more information, see Add Group on page 161.
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). For more information, see Add Node on page 161.

Properties set for a node take precedence over the same properties set for a group. For the complete order of property precedence, see Property Precedence on page 156.

In the example, the global default properties HOME and JAVA_HOME are overridden for node europa.rose.hp.com. Since the start command uses the system init command `–/sbin/init.d/weblogic start` which runs when the system starts and starts all of the WebLogic Servers, you must set USER to root. In this environment, this command takes care of starting the servers with the correct user, such as `weblogic`.

```
HOME    = /opt/bea/wlserver_10
JAVA_HOME = /opt/bea/jdk131
USER    = root
GROUP production
{
  mercury.rose.hp.com
  venus.rose.hp.com
  mars.rose.hp.com
  jupiter.rose.hp.com
}
NODE production
{
  SERVER1_NAME= partsserver
  SERVER1_PORT= 7001
  SERVER1_LOGIN= system
  SERVER1_PASSWORD= password
  SERVER1_ADMIN_HOST= earth.rose.hp.com
  SERVER1_ADMIN_PORT= 7001
  SERVER1_START_CMD /sbin/init.d/weblogic start
  SERVER2_NAME= orderserver
  SERVER2_PORT= 7010
  SERVER2_LOGIN= system
  SERVER2_PASSWORD= moresecret
  SERVER2_START_CMD /sbin/init.d/weblogic start
}
NODE jupiter.rose.hp.com
{
  SERVER1_PASSWORD= different1password
  SERVER2_PASSWORD= different2password
}
NODE europa.hp.com
{
  SERVER1_HOME = /opt/bea/wls
```

```
  SERVER1_JAVA_HOME = /opt/bea/jdk132
  SERVER1_NAME= testserver
  SERVER1_PORT= 7100
  SERVER1_LOGIN= system
  SERVER1_PASSWORD= mypssword
}
```

Example 3: Multiple WebLogic Server Versions

This example shows how to set up an environment with two different versions of WebLogic Server running on a single managed node. Note that SERVER1_HOME and SERVER2_HOME are set to different directories for the different versions of WebLogic Server.

```
NODE callisto.rose.hp.com
{
  SERVER1_HOME = /opt/bea/weblogic90
  SERVER1_JAVA_HOME = /opt/bea/jdk131
  SERVER1_NAME= prodserver
  SERVER1_PORT= 7001
  SERVER1_LOGIN= system
  SERVER1_PASSWORD= mypssword
  SERVER1_HOME = /opt/bea/wlserver_10
  SERVER1_JAVA_HOME = /opt/bea/jdk131
  SERVER1_NAME= testserver
  SERVER1_PORT= 7100
  SERVER1_LOGIN= system
  SERVER1_PASSWORD= mypssword
}
```

Example 4: WebLogic Servers with Virtual IP Addresses

This example shows how to configure WebLogic Servers that have virtual IP addresses. ADDRESS is set to the name or IP address where the server is listening.

```
NODE saturn.rose.hp.com
{
  SERVER1_HOME = /opt/bea/weblogic90
  SERVER1_JAVA_HOME = /opt/bea/jdk131
  SERVER1_NAME= partsserver
  SERVER1_PORT= 7001
  SERVER1_ADDRESS= juno.rose.hp.com
  SERVER1_LOGIN= system
  SERVER1_PASSWORD= mypssword
  SERVER2_HOME = /opt/bea/wlserver_10
  SERVER2_JAVA_HOME = /opt/bea/jdk131
  SERVER2_NAME= orderserver
  SERVER2_PORT= 7001
  SERVER2_ADDRESS= 15.15.1.1
  SERVER2_LOGIN= system
  SERVER2_PASSWORD= mypssword
}
```

Example 5: Non-default WebLogic Server Startup Location

This example addresses the case where the command that starts WebLogic Server does not cd to the HOME directory before it starts. The WebLogic SPI might not be able to locate the WebLogic Server log files in order to monitor them. To ensure that the WebLogic SPI can monitor the log files, either set LAUNCH_DIR to the directory the server was run from as on neptune (in the example), or set LOGFILES as on pluto (in the example).

```
NODE neptune.rose.hp.com
{
  SERVER1_HOME = /opt/bea/wlserver_10
  SERVER1_JAVA_HOME = /opt/bea/jdk131
  SERVER1_NAME= exampleServer
  SERVER1_PORT= 7001
  SERVER1_LOGIN= system
  SERVER1_PASSWORD= mypssword
  SERVER1_LAUNCH_DIR = /home/weblogic
}
NODE pluto.rose.hp.com
{
  SERVER1_HOME = /opt/bea/wlserver_10
  SERVER1_JAVA_HOME = /opt/bea/jdk131
  SERVER1_NAME= exampleServer
  SERVER1_PORT= 7001
  SERVER1_LOGIN= system
  SERVER1_PASSWORD= mypssword
  SERVER1_LOGFILES =
/opt/bea/wlserver_10/config/mydomain/logs/weblogic.log,
/opt/bea/wlserver_10/config/mydomain/logs/wl-domain.log
}
```

The SERVER1_LOGFILES are set on a single long line separated by commas.

C Applications

The WebLogic SPI applications include configuration and troubleshooting utilities.

WLSSPI Admin group includes the following applications:

- Configure WLSSPI
- Discover WebLogic
- Init Non-Root
- Self-Healing Info
- Start/Stop Monitoring
- Start/Stop Tracing
- Verify
- View Error File
- View Graphs

WebLogic group includes the following applications:

- Check WebLogic
- Start WLS Console
- Start/Stop WebLogic
- View Deployed Apps
- View WebLogic Log
- View WebLogic Servers
- View Application Activation Status
- View Application Timeout

Additional WLSSPI Admin applications for user defined metrics (UDMs) are available with the SPIJMB software. See the *HP Operations Smart Plug-in User Defined Metrics User Guide* for more information about how to install the software and the additional applications.

The WLSSPI Admin Applications Group

The WLSSPI Admin application group contains the following applications. These applications require the “root” user permission, therefore it is recommended that this group is assigned to the HPOM administrator.

Configure WLSSPI

Configure the WebLogic SPI application launches the configuration editor. You can use the configuration editor to maintain the WebLogic SPI configuration by viewing, editing, or setting configuration properties.

If you are configuring the WebLogic SPI for the first time, use the Discover WebLogic application to automatically set basic configuration properties. For more information, see Chapter 3, Configuring the WebLogic SPI.

Function

Configure WLSSPI application performs the following functions:

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

Configuration information about all the WebLogic Servers running on all managed nodes is maintained on the management server. In addition, every managed node maintains information about WebLogic Servers running on that node.

When you make changes using the configuration editor, the changes are saved on the HPOM management server. However, when launching the Configure WLSSPI application if you select a node, the changes affecting the selected node are saved on that node itself.

To save any changes on a managed node, you must select that node before launching the Configure WLSSPI application otherwise the changes are saved on the management server by default.

To Launch the Configure WLSSPI Application

1. At the HPOM console, double-click **OVO Node Bank**. The OVO Node Bank window opens.
2. From the Window menu, select **Application Bank**. The OVO Application Bank window opens.
3. Double-click **WLSSPI**. The Application Group: WebLogic SPI window opens.
4. Double-click **WLSSPI Admin**. The Application Group: WLSSPI Admin window opens. All the WLSSPI Admin applications appear in this window.
5. Select a node from the OVO Node Bank window and double-click **Configure WLSSPI** (If the items do not appear as mentioned, select **Map** → **Reload**). The Introduction window opens.
6. Click **Next**. The configuration editor opens. For more information about using configuration editor, see The Configuration Editor on page 157.

7 Click **Save** to save any changes made to the configuration. After you save your changes, you cannot automatically undo them.

8 Select **Finish** or **Next** to save changes and exit the editor.

If you select **Next**, the Confirm Operation window opens. Click **OK** to save the changes.

If you click **Cancel** in the Confirm Operation window, the changes made by you are not saved to the selected managed nodes' configuration and 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, launch the Discovery application, click **Next** in the configuration editor, and then click **OK** in the Confirm Operation window.

9 During configuration, if you added an application server or added/edited the ADMIN_PORTS, HOME, HOME_LIST, or JAVA_HOME properties, you must launch the Discover WebLogic Application on the nodes on which the application server/properties were added or edited. Running the Discover application updates the service map.

Discover WebLogic

The Discover WebLogic application sets basic configuration properties needed for discovery. It also launches the configuration editor through which you can configure the WebLogic SPI by setting initial configuration properties.

Function

Discover WebLogic updates the configuration on the HPOM management server and selected managed nodes.

Configuration information about the all the WebLogic Servers running on all managed nodes is maintained on the management server. In addition, every managed node maintains information about WebLogic Servers running on that node.

When you make changes using the configuration editor, the changes are saved on the HPOM management server. However, when launching the Configure WLSSPI application if you select a node, the changes affecting the selected node are saved on that node itself.

To save any changes on a managed node, you must select that node before launching the Configure WebLogic SPI application otherwise the changes are saved on the management server by default.

To Launch the Discover WebLogic Application

1 From the HPOM console, double-click **OVO Node Bank**. The OVO Node Bank window opens.

2 From the Window menu, select **Application Bank**. The OVO Application Bank window opens.

3 Double-click **WLSSPI**. The Application Group: WebLogic SPI window opens.

4 Double-click **WLSSPI Admin**. The Application Group: WLSSPI Admin window opens. All the WLSSPI Admin applications appear in this window.

5 Select a node from the OVO Node Bank window and double-click **Discover WebLogic** (If the above does not appear as described, select **Map** → **Reload**.) The Introduction window opens. This window contains brief information about the Discovery application.

6 Click **Next**. A second Introduction window opens. This window displays information about which properties might be required for the discovery process to work.

7 Click **Next**. If you have not set the WebLogic SPI LOGIN and PASSWORD properties, the Set Access Info for Default Properties window opens.

> If you already configured the LOGIN and PASSWORD properties, the configuration editor appears. Skip this step and go to step 8.

Set the LOGIN and PASSWORD properties same as the WebLogic Server login and password configured in Task 2: Configure a WebLogic Server User on page 41.

> The LOGIN and PASSWORD properties set in this window are used as the default WebLogic Server login and password (they are set at the global properties level). If no NODE level or server-specific LOGIN and PASSWORD properties are set, WebLogic SPI uses this WebLogic login and password to access all WebLogic Servers. For more information about the configuration structure, see Structure on page 155.

If the WebLogic Server login and password are the same for all WebLogic Servers on all HPOM managed nodes, follow these steps:

a In the Set Access Info for Default Properties window, set the LOGIN and PASSWORD properties.

b Click **Next**.

c Go to step 9.

If the WebLogic Server login and password are different for different instances of WebLogic, you must customize the WebLogic SPI configuration by setting the LOGIN and PASSWORD properties at the NODE or server-specific level (for more information about the configuration structure, see Structure on page 155):

a In the Set Access Info for Default Properties window set the LOGIN and PASSWORD properties to the most commonly used WebLogic login and password.

b Select **Customize** to open the configuration editor.

8 In the configuration editor, set the configuration properties. For more information about using the configuration editor, see The Configuration Editor on page 157.

9 Click **Next** to save changes and exit the editor. The Confirm Operation window opens.

10 Click **OK**.

> If you click **Cancel** in the Confirm Operation window, the changes made by you are not saved to the selected managed nodes' configuration and 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, launch the Discovery application, click **Next** in the configuration editor, and then click **OK** in the Confirm Operation window

Init Non-Root

Init Non-Root application simplifies the configuration of a non-root HTTPS agent on a UNIX managed node (OVO 8.x only). For information about configuring a non-root HTTPS agent on a UNIX managed node, see Configuring a Non-Root HTTPS Agent on a UNIX Managed Node (OVO 8.x Only) on page 52.

Function

Init Non-Root performs the following functions on the selected managed nodes:

1. Runs the `wasspi_wls_perl -S wasspi_wls_makePlatdef -force` command to set the proper SPI path configuration and updates the `/var/opt/OV/bin/instrumentation/wasspi_wls_platdef.pm` and `wasspi_wls_platdef.prop` files.
2. Generates the `wasspi_wls_sudoers` configuration file.

To Launch the Init Non-Root Application

1. From the HPOM console, double-click **OVO Node Bank**. The OVO Node Bank window opens.
2. From the Window menu, select **Application Bank**. The OVO Application Bank window opens.
3. Double-click **WLSSPI.** The Application Group: WebLogic SPI window opens.
4. Double-click **WLSSPI Admin**. The Application Group: WLSSPI Admin window opens. All the WLSSPI Admin applications appear in this window.
5. Select a node from the OVO Node Bank window and double-click **Init Non-Root**.

Self-Healing Info

The Self-Healing Info Application collects data that you can send to your HP support representative.

Required Setup

If you are collecting data for a reproducible problem, follow these steps before running the Self-Healing Info application:

1. Run the Start Tracing application. For more information, see Start/Stop Tracing on page 189.
2. Reproduce the problem.

Function

Self-Healing Info application performs the following functions:

- Saves data in the following file:
  - on a UNIX managed node: `/tmp/wasspi_wls_support.tar`

— on a Windows managed node: `wasspi_wls_support.zip` in `%TEMP%` directory.

This file might 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**.

- Launches and saves data using the Verify application (for more information, see Verify on page 189).

To Launch the Self-Healing Info Application

1. From the HPOM console, select a node in the Node Bank window.
2. From the Window menu, select **Application Bank**.

In the Application Bank window select **WLSSPI → WLSSPI Admin → Self-Healing Info**. You can launch this application to collect data that you can send to the HP support representative.

Start/Stop Monitoring

You can launch this application to start/stop the WebLogic SPI from collecting metrics from an application server.

The WebLogic SPI collects metrics to get performance or availability related data. Metrics are also used to create reports (automatically or manually generated) and graphs. These reports and graphs are used to analyze trends in server usage, availability, and performance.

Typically, you 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.

Launch the Verify application to determine if monitoring is started or stopped. By default, monitoring is on.

Function

Start Monitoring application starts the collection of metrics for one or all application servers on a managed node.

Stop Monitoring application stops the collection of metrics for one or all application servers on a managed node.

To Launch the Start or Stop Monitoring Application

1. From the HPOM console, double-click **OVO Node Bank**. The OVO Node Bank window opens.
2. From the Window menu, select **Application Bank**. The OVO Application Bank window opens.
3. Double-click **WLSSPI**. The Application Group: WebLogic SPI window opens.
4. Double-click **WLSSPI Admin**. The Application Group: WLSSPI Admin window opens. All the WLSSPI Admin applications appear in this window.
5. Select a node in the Node Bank window and double-click **Start Monitoring** or **Stop Monitoring**.

Start/Stop Tracing

You can launch this application to starts/stop tracing the collection of metrics. You must launch this application only when instructed by your HP support representative.

Launch the Self-Healing Info application to collect the files created by Start Tracing. These files contain data that the HP support representative will use.

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 the Start or Stop Tracing Application

1. From the HPOM console, double-click **OVO Node Bank**. The OVO Node Bank window opens.
2. From the Window menu, select **Application Bank**. The OVO Application Bank window opens.
3. Double-click **WLSSPI**. The Application Group: WebLogic SPI window opens.
4. Double-click **WLSSPI Admin**. The Application Group: WLSSPI Admin window opens. All the WLSSPI Admin applications appear in this window.
5. Select a node in the Node Bank window and double-click **Start Tracing** or **Stop Tracing**.

Verify

You can launch this application to verify whether the WebLogic SPI is properly installed on the server and managed node.

Function

Verify application performs the following functions:

- For all managed nodes:
  - Checks that the following directories exist:
    - *<OV_AGT_DIR>*`/conf/wlsspi/`

- — <*OV_AGT_DIR*>/wasspi/wls/datalog/
- — <*OV_AGT_DIR*>/wasspi/wls/history/
- — <*OV_AGT_DIR*>/wasspi/wls/lib/
- — <*OV_AGT_DIR*>/log/wlsspi/
- — <*OV_AGT_DIR*>/wasspi/wls/tmp/
- Checks that the following files exist:
  - — <*OV_AGT_DIR*>/conf/wlsspi/MBeanReports.dtd
  - — <*OV_AGT_DIR*>/conf/wlsspi/MBeanReports.xsl
  - — <*OV_AGT_DIR*>/conf/wlsspi/MetricDefinitions.ser
  - — <*OV_AGT_DIR*>/conf/wlsspi/MetricDefinitions.dtd
  - — <*OV_AGT_DIR*>/conf/wlsspi/MetricMap
  - — <*OV_AGT_DIR*>/conf/wlsspi/OVTrace.sample
  - — <*OV_AGT_DIR*>/conf/wlsspi/ReportsHeader.xsl
  - — <*OV_AGT_DIR*>/conf/wlsspi/SiteConfig
  - — <*OV_AGT_DIR*>/conf/wlsspi/SPIConfig
  - — <*OV_AGT_DIR*>/conf/wlsspi/SPIConfigLogFiles
  - — <*OV_AGT_DIR*>/conf/wlsspi/SPIConfigCfgFiles
  - — <*OV_AGT_DIR*>/conf/wlsspi/trigger
  - — <*OV_AGT_DIR*>/conf/wlsspi/ReportsUtil.xsl
  - — <*OV_AGT_DIR*>/wasspi/wls/lib/GraphSP.xsl
  - — <*OV_AGT_DIR*>/wasspi/wls/lib/JspiCola.jar
  - — <*OV_AGT_DIR*>/wasspi/wls/lib/MetricMap.xsl
  - — <*OV_AGT_DIR*>/wasspi/wls/lib/xalan.jar
  - — <*OV_AGT_DIR*>/wasspi/wls/lib/xerces.jar
- For Windows managed nodes:
  - Checks that the following files exist:
    - — <*OV_AGT_DIR*>\bin\OpC\cmds\wasspi_wls_admin.exe
    - — <*OV_AGT_DIR*>\bin\OpC\cmds\wasspi_wls_debug.exe
    - — <*OV_AGT_DIR*>\bin\OpC\cmds\wasspi_wls_spiapps.exe
    - — <*OV_AGT_DIR*>\bin\OpC\cmds\wasspi_wls_udmgraphs.exe
    - — <*OV_AGT_DIR*>\bin\OpC\cmds\wasspi_wls_verify.exe
    - — <*OV_AGT_DIR*>\bin\OpC\monitor\wasspi_wls_ca.exe
    - — <*OV_AGT_DIR*>\bin\OpC\monitor\wasspi_wls_config.exe
    - — <*OV_AGT_DIR*>\bin\OpC\monitor\wasspi_wls_files.exe
    - — <*OV_AGT_DIR*>\bin\OpC\monitor\wasspi_wls_le.exe
    - — <*OV_AGT_DIR*>\bin\OpC\monitor\wasspi_wls_logdata.exe
    - — <*OV_AGT_DIR*>\bin\OpC\monitor\wasspi_wls_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

- For UNIX managed nodes:
  - Checks that the following files exist:
    - <*OV_AGT_DIR*>/bin/OpC/cmds/wasspi_wls_admin
    - <*OV_AGT_DIR*>/bin/OpC/cmds/wasspi_wls_debug
    - <*OV_AGT_DIR*>/bin/OpC/cmds/wasspi_wls_spiapps
    - <*OV_AGT_DIR*>/bin/OpC/cmds/wasspi_wls_udmgraphs
    - <*OV_AGT_DIR*>/bin/OpC/cmds/wasspi_wls_verify
    - <*OV_AGT_DIR*>/bin/OpC/monitor/wasspi_setpath
    - <*OV_AGT_DIR*>/bin/OpC/monitor/wasspi_wls_ca
    - <*OV_AGT_DIR*>/bin/OpC/monitor/wasspi_wls_config
    - <*OV_AGT_DIR*>/bin/OpC/monitor/wasspi_wls_config.pl
    - <*OV_AGT_DIR*>/bin/OpC/monitor/wasspi_wls_files
    - <*OV_AGT_DIR*>/bin/OpC/monitor/wasspi_wls_le
    - <*OV_AGT_DIR*>/bin/OpC/monitor/wasspi_wls_lib.pl
    - <*OV_AGT_DIR*>/bin/OpC/monitor/wasspi_wls_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

In this instance, <*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 the Verify Application

1. From the HPOM console, double-click **OVO Node Bank**. The OVO Node Bank window opens.
2. From the Window menu, select **Application Bank**. The OVO Application Bank window opens.
3. Double-click **WLSSPI**. The Application Group: WebLogic SPI window opens.
4. Double-click **WLSSPI Admin**. The Application Group: WLSSPI Admin window opens. All the WLSSPI Admin applications appear in this window.
5. Select a node in the Node Bank window and double-click **Verify**.

   If the application is successful the following message appears:

   ```
   Installation is clean
   ```

View Error File

You can launch the Verify Error File application to view the contents of the WebLogic SPI error log file.

Function

View Error File application displays the contents of the WebLogic SPI error log file <*OV_AGT_DIR*>`/log/wlsspi/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 Launch the View Error File Application

1. From the HPOM console, double-click **OVO Node Bank**. The OVO Node Bank window opens.
2. From the Window menu, select **Application Bank**. The OVO Application Bank window opens.
3. Double-click **WLSSPI**. The Application Group: WebLogic SPI window opens.
4. Double-click **WLSSPI Admin**. The Application Group: WLSSPI Admin window opens. All the WLSSPI Admin applications appear in this window.
5. Select a node in the Node Bank window and double-click **View Error File** to view the error logs.

View Graphs

You can launch View Graphs application to view HP Performance Manager graphs in a web browser.

Required Setup

Before running the View Graphs application:

1. Install HP Performance Manager
2. edit the `ovweb.conf` file (for more information see Task 1: Configure the Management Server to Launch Your Web Browser on page 37.)

Function

View Graphs application launches a web browser to display HP Performance Manager graphs generated by the WebLogic SPI metric data.

To Launch the View Graphs Application

1. From the HPOM console, double-click **OVO Node Bank**. The OVO Node Bank window opens.
2. From the Window menu, select **Application Bank**. The OVO Application Bank window opens.
3. Double-click **WLSSPI**. The Application Group: WebLogic SPI window opens.
4. Double-click **WLSSPI Admin**. The Application Group: WLSSPI Admin window opens. All the WLSSPI Admin applications appear in this window.
5. Select a node in the Node Bank window and double-click **View Graphs** to view the graphs.

The WebLogic Applications Group

The WLSSPI Admin application group contains the following applications:

Check WebLogic

You can use this application to check the status of each WebLogic Server running on a selected managed node.

Function

Check WebLogic displays the following information for each WLS server on the selected nodes:

Information	Description
Server Name	The server name as defined in the WebLogic Server.
State	The status of the WebLogic Server.
Listen Address	The name and IP address used to listen for incoming connections.
Health State	Numerical representation of the current state of the WebLogic Server.
Health State String	What the WebLogic Server is reporting using self-health monitoring.

If the WebLogic SPI is configured to not collect metrics for the WebLogic Server, the following message appears:

```
Collection is temporarily OFF for <server_name>
```

To Launch the Check WebLogic Application

1. From the HPOM console, double-click **OVO Node Bank**. The OVO Node Bank window opens.
2. From the Window menu, select **Application Bank**. The OVO Application Bank window opens.
3. Double-click **WLSSPI**. The Application Group: WebLogic SPI window opens.
4. Double-click **WebLogic Admin**. The Application Group: WebLogic window opens. All the WebLogic applications appear in this window.
5. Select a node in the Node Bank window and double-click **Check WebLogic** to check the status.

Start WLS Console

You can use Start WLS Console to launch the WebLogic Administration Server console from the HPOM console. You can bring up the console for one instance or more instances of application servers on the selected managed nodes.

Required Setup

The ADMIN_HOST and ADMIN_PORTS configuration properties *must* be set before this application can run successfully.

Function

Start WLS Console launches the WebLogic Administration Server console, in a web browser, for one or more instances of application servers on the selected nodes.

To Launch the Start WLS Console Application

1. From the HPOM console, double-click **OVO Node Bank**. The OVO Node Bank window opens.
2. From the Window menu, select **Application Bank**. The OVO Application Bank window opens.
3. Double-click **WLSSPI**. The Application Group:WebLogic SPI window opens.
4. Double-click **WebLogic Admin**. The Application Group: WebLogic window opens. All the WebLogic applications appear in this window.
5. Select a node in the Node Bank window and double-click **Start WLS Console** to launch the WebLogic Administration Server console.

Start/Stop WebLogic

You can use the Start WebLogic or Stop WebLogic application to start and stop WebLogic Servers from the HPOM console. You can start and stop one or more instances of application servers running on the selected managed nodes without logging on to each WebLogic Administration Server.

Required Setup

The START_CMD, STOP_CMD, and USER configuration properties must be set before launching this application.

Function

Start WebLogic application starts one or more instances of application servers on the selected managed nodes.

Stop WebLogic application stops one or more instances of application servers on the selected managed nodes.

To Launch the Start or Stop WebLogic Application

1. From the HPOM console, double-click **OVO Node Bank**. The OVO Node Bank window opens.
2. From the Window menu, select **Application Bank**. The OVO Application Bank window opens.
3. Double-click **WLSSPI**. The Application Group: WebLogic SPI window opens.
4. Double-click **WebLogic Admin**. The Application Group: WebLogic window opens. All the WebLogic applications appear in this window.
5. Select a node in the Node Bank window and double-click **Start WebLogic** or **Stop WebLogic**.

View Deployed Apps

You can use the View Deployed Apps application to view applications running on a WebLogic Server instance without logging on to the system on which the WebLogic Server is running.

Function

View Deployed Apps displays the following information for each WebLogic Server instance on the selected managed node (the WLS Version column denotes the information that is displayed based on the WebLogic Server version):

Information	WLS Version	Description
Application	7.0, 8.1, 9.x, 10.0	The application instance.
Name	7.0, 8.1, 9.x, 10.0	The name of the application.
Version	9.x, 10.0	The application version (if the application is not versioned, “null” is displayed).
Module Type	9.x, 10.0	The J2EE module type such as CAR, EAR, EJB, RAR, or WAR.

To Launch the View Deployed Apps Application

1. From the HPOM console, double-click **OVO Node Bank**. The OVO Node Bank window opens.
2. From the Window menu, select **Application Bank**. The OVO Application Bank window opens.
3. Double-click **WLSSPI**. The Application Group: WebLogic SPI window opens.
4. Double-click **WebLogic Admin**. The Application Group: WebLogic window opens. All the WebLogic applications appear in this window.
5. Select a node in the Node Bank window and double-click **View Deployed Apps**.

View WebLogic Log

You can use the View WebLogic Log application to view WebLogic Server log files without logging on to the system on which the WebLogic Server is running.

Function

View WebLogic Log application displays the following information:

- If you launch View WebLogic Log without a parameter: a numbered list of available log files for the managed node.
- If you launch View WebLogic Log with a non-valid parameter (a non-numeric value or a number not corresponding to the list of available log files): a numbered list of available log files for the managed node.
- If you launch View WebLogic Log with a valid parameter: the contents of the corresponding log file for the managed node.

You can enter only one numeric value in the parameter field. You will be able to view (for all selected managed nodes) the log file designated to this number. Each time you launch this application select one log file per managed node to view.

To Launch the View WebLogic Log Application

1. From the HPOM console, double-click **OVO Node Bank**. The OVO Node Bank window opens.
2. From the Window menu, select **Application Bank**. The OVO Application Bank window opens.
3. Double-click **WLSSPI**. The Application Group: WLSSPI window opens.
4. Double-click **WebLogic**. The Application Group: WebLogic window opens. All the WebLogic applications appear in this window.
5. Select a node in the Node Bank window and double-click View WebLogic Log. The WLS LOGS window opens.

   The WLS LOGS window contains the node name and a list of options. Enter the option of your choice and press **Enter**.

   Scroll through the WebLogic SPI window to view the log file data.
6. Enter **q** to exit the window.

View WebLogic Servers

You can use the View WebLogic Severs application to view the WebLogic domain configuration, cluster information, and physical machines without logging on to the system on which the WebLogic Server is running.

Function

View WebLogic Servers displays the following information for each WebLogic Server instance on the selected managed node (the WLS Version column denotes the information that is displayed based on the WebLogic Server version):

Information	WLS Version	Description
Domain	7.0, 8.1, 9.x, 10.0	The WebLogic domain instance.
Admin Server	9.x, 10.0	The name of the WebLogic administration server instance.
Version	9.x, 10.0	The release identifier for the configuration.
Server	7.0, 8.1, 9.x, 10.0	The WebLogic Server instance.
Name	7.0, 8.1, 9.x, 10.0	The name of the server instance. This is the name displayed in the Administration Console and is used to identify the server.
Listen Port	7.0, 8.1, 9.x, 10.0	The default TCP port that the WebLogic Server instance uses to listen for regular (non-SSL) incoming connections.
Listen Address	7.0, 8.1, 9.x, 10.0	The IP address or DNS name the WebLogic Server instance uses to listen for incoming connections.
Cluster	7.0, 8.1, 9.x, 10.0	The cluster instance.
Name	7.0, 8.1, 9.x, 10.0	The user-specified name of the cluster instance.
Type	9.x, 10.0	How clustered servers send data for optimization of cross-cluster replication such as man (metro area network), wan, or none.
Address	7.0, 8.1, 9.x, 10.0	The address used by clients to connect to the cluster and what is used for generating EJB handles and entity EJB failover addresses.
Multicast Address	7.0, 8.1, 9.x, 10.0	The address used by cluster members to communicate with each other.
Machine	7.0, 8.1, 9.x, 10.0	The machine instance.
Name	7.0, 8.1, 9.x, 10.0	The user-specified name of the machine instance.

To Launch the View WebLogic Severs Application

1. From the HPOM console, double-click **OVO Node Bank**. The OVO Node Bank window opens.
2. From the Window menu, select **Application Bank**. The OVO Application Bank window opens.
3. Double-click **WLSSPI**. The Application Group: WLSSPI window opens.
4. Double-click **WebLogic**. The Application Group: WebLogic window opens. All the WebLogic applications appear in this window.
5. Select a node in the Node Bank window and double-click **View WebLogic Servers**.

View Application Activation Status

You can use View Application Activation Status application to view the activation status of the applications, deployed and running on a WebLogic Server instance, without logging in to the system on which the WebLogic Server is running.

Required Setup

Before launching View Application Activation Status application, set the following value for the configuration property URL_PATH (for information on configuration properties see Configuration Properties on page 166):
`/jndi/weblogic.management.mbeanservers.domainruntime`

Function

View Application Activation Status application gives the following information for each WebLogic Server instance on the selected managed node. The information given in the Description column is dependent on the WebLogic Server version.

Table 18

Information	WLS Version	Description
AppRuntimeStateRuntime	9.x, 10.0	AppRuntimeStateRuntime MBean
Application ID	9.x, 10.0	Serial Number for the Application ID (generated by the SPI)
Application-ID	9.x, 10.0	The name of the application
Is Active?	9.x, 10.0	If `"true"` is displayed in this field, the application is active. If `"false"` is displayed, the application is inactive

To Launch the View Application Activation Status Application

1. From the HPOM console, double-click **OVO Node Bank**. The OVO Node Bank window opens.
2. From the Window menu, select **Application Bank**. The OVO Application Bank window opens.
3. Double-click **WLSSPI**. The Application Group: WLSSPI window opens.
4. Double-click **WebLogic**. The Application Group: WebLogic window opens. All the WebLogic applications appear in this window.
5. Select a node in the Node Bank window and double-click **View Application Activation Status**.

View Application Timeout

View Application Timeout application enables you to view the time left before retiring applications, deployed and running on a WebLogic Server instance, will timeout. You can view the time left without logging in to the system on which the WebLogic Server is running.

Required Setup

Before launching View Application Timeout application, set the following value for the configuration property URL_PATH (for information on configuration properties see Configuration Properties on page 166):
`/jndi/weblogic.management.mbeanservers.domainruntime`

Function

You can use the View Application Timeout application to get the following information for each WebLogic Server instance on the selected managed node. The information given in the Description column is dependent on the WebLogic Server version.

Table 19

Information	WLS Version	Description
AppRuntimeStateRuntime	9.x, 10.0	AppRuntimeStateRuntime MBean
Application ID	9.x, 10.0	Serial Number for the Application ID (generated by the SPI)
Application-ID	9.x, 10.0	The name of the application
Time Left to Retire	9.x, 10.0	The amount of time the application is given to retire (This returns the value `"-1"` if only one version of the application exists on the server and no timeout is set for the applications).

To Launch the View Application Timeout Application

1. From the HPOM console, double-click **OVO Node Bank**. The OVO Node Bank window opens.
2. From the Window menu, select **Application Bank**. The OVO Application Bank window opens.
3. Double-click **WLSSPI**. The Application Group: WLSSPI window opens.
4. Double-click **WebLogic**. The Application Group: WebLogic window opens. All the WebLogic applications appear in this window.
5. Select a node in the Node Bank window and double-click **View Application Timeout**.

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 Operations Manager

A family of network and system management products, and an architecture for those products. HP Operations Manager 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.

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

Index

A

B

C

D

E

F

G

H

I

J

K

L

M

N

O

P

R

S

T

U

V

W

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