HP Operations Smart Plug-in for Web Servers

for HP Operations Manager for UNIX®

Software Version: 5.40

User Guide

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Contents

1 Introduction

The HP Operations Smart Plug-in for Web Server SPI provides powerful, centralized tools to monitor and manage the operation of the most widely used Internet servers. It contains templates and applications specifically designed to integrate with HP Operations Manager. The components of Web Server SPI are:

- Templates that are designed to monitor important log files and vital processes of Internet servers. See Templates and Template Groups on page 14 for a detailed list of all available templates.
- Applications that let you query the status of Internet servers and start and stop their processes as required. See Applications and Application Groups on page 13 for a detailed list.

This manual describes the installation, configuration, and usage of the Web Server SPI on HP-UX and Sun Solaris management server platforms.

2 Installing the Web Server SPI

Prerequisites and Supported Platforms

The following sections list the hardware and software requirements.

Hardware and Software Requirements

The following section lists the requirements for the Web Server SPI. HP Operations Manager for UNIX (HPOM for UNIX) and the operating system must already be installed.

Table 1 HPOM for UNIX Management Server Requirements

Hardware	Operating System	HPOM for UNIX Version	Disk Space
HP 9000 Technical Workstations	HP-UX 11.11	7.1, 8.0, 8.1	20 MB
	HP-UX 11.23, 11.31	8.13	20 MB
HP 9000 Enterprise Servers	HP-UX 11.11	7.1, 8.0, 8.1	20 MB
	HP-UX 11.23, 11.31	8.13	20 MB
Sun SPARC Stations	Solaris 8, 9	7.1, 8.0, 8.1	20 MB
	Solaris 10	8.13	20 MB
Intel Itanium architecture (IA64)	HP-UX 11.23, 11.31	8.20	20 MB

Table 2 HPOM for UNIX Managed Node Requirements

Hardware	Operating System	HPOM for UNIX Version	Disk Space
HP 9000 Technical Workstations	HP-UX 11.11, 11.23, 11.31 PA, and 11.31 IA	7.1, 7.2, 8.0, 8.1, 8.20	5 MB
HP 9000 Enterprise Servers	HP-UX 11.11,11.23, 11.31 PA, and 11.31 IA	7.1, 7.2, 8.0, 8.1, 8.20	5 MB
Sun SPARC Stations	Solaris 8, 9	7.1, 7.2, 8.0, 8.1, 8.20	5 MB

Table 2 HPOM for UNIX Managed Node Requirements

Hardware	Operating System	HPOM for UNIX Version	Disk Space
Intel Architecture (Ix86)	Red Hat Linux 3.0, 4.0	8.1, 8.20	5 MB
Intel Architecture (Ix86)	SUSE Linux 7.1, 7.3, 8.0, 8.1	7.2, 8.20	5 MB
Intel Itanium architecture (IA64)s	HP-UX 11.23, 11.31	7.1, 7.2, 8.0, 8.1, 8.20	5 MB

Software Prerequisites on Management Server

You must make sure that the following components are installed on the management server prior to the installation of Web Server SPI:

- HP Performance SPI Integration Component (DSI2DDF)
- HP SPI Self-Healing Services (SPI-SHS-OVO)
- SPI Service Discovery Framework (SPI-SVCDISC-OVO)

See the *HP Operations Smart Plug-ins DVD Installation and Upgrade Guide* for additional information about the software prerequisites on the management server.

Supported Web Servers

Web Server SPI supports the internet services software listed in the following table.

Table 3 Supported Web Servers

Platform	Internet Services
HP-UX (PA-RISC)	Apache Web Server 1.3.26, 2.0.31, 2.0.39, 2.0.50, 2.0.54
	HP Apache 2.0.47, 2.0.48, 2.0.50, 2.0.54
	Sun ONE Web Server 6.0, 6.1
Linux (Red Hat) Linux (SUSE)	Apache Web Server 1.3.26, 2.0.39, 2.0.50, 2.0.54
Sun Solaris	Apache Web Server 1.3.26, 2.0.39, 2.0.50, 2.0.54
	Sun ONE Web Server 6.0, 6.1, 7.0
HPUX (IA-64)	Apache Web Server 1.3.26, 2.0.39, 2.0.50, 2.0.54
	HP Apache 2.0.47, 2.0.48, 2.0.50, 2.0.54, 2.0.58 and 2.2.4
RedHat Enterprise Linux Advanced Server (AS) 3.0, 4.0 on Intel x86	IBM HTTP 6.0 web server Apache Web Server 2.0.59 and 2.2.4

Prerequisite for CODA Data Logging

Make sure that the DS12DDF component is installed on the management server for the CODA data logging components to function effectively.

Prerequisite for Apache Software Foundation (ASF) Apache and HP Apache

The WebServer SPI uses the `mod_hpspi` module to collect performance metrics. To load this module into the Apache web server, you must enable the `mod_so` module before configuring the web server. See the *Apache Administration Guide* for additional information about instructions to enable the `mod_so` module.

Prerequisite for IBM HTTP Server

If you configure the WebServer SPI for IBM HTTP Server using the **SPI for Web Servers → WebSPI Apache → Configure Apache Node** application, the following lines are added in the `httpd.conf` file:

```
<Location /server-status>
SetHandler server-status
Allow from all
</Location>
```

These lines load the `mod_status` module and enable access to the `/server-status` Universal Resource Locator (URL) for the SPI. By default, the WebServer SPI provides access to `/server-status` to all hosts. If you want to restrict access to a host, replace the line `Allow from all` in the `httpd.conf` file with the following line:

```
Allow from <host name>
```

where, *<host name>* is the host from which communication must be restricted.

Make sure that the line `ExtendedStatus On` is present in the `httpd.conf` file. You must make sure that you do not enclose this line within any condition statements such as an `IfModule` condition statement.

Perl 5.8 installation is a prerequisite to configure WebServer SPI for IBM HTTP Server. You must verify that the Perl 5.8 executable file is present at `/usr/bin/perl`.

Prerequisite for non-root agent user support

Perform the following steps at the agent node for non-root agent user support:

1. Switch the agent user to non root using the `ovswitchuser` command.
2. Log in to the agent node as a root user
3. Run `wsspi_perl_wrapper.sh wsspi_root.pl` from the agent command directory for the HTTPS agent–`/var/opt/OV/bin/instrumentation`.

See the manual, *HP Operations HTTPS Agent Concepts and Configuration Guide*, for more information about non-root agent user.

Installing the Web Server SPI on the Management Server

The sections below explain how to install the Web Server SPI on the HP-UX platform and on the Sun Solaris platform.

Installing the Web Server SPI on an HP-UX Management Server

1. Login as **root**.
2. Type the following command to set the root user's umask:

   umask 027
3. Type the following command to create a directory to mount the DVD-ROM:

   mkdir /<mount_point>

   For example: **mkdir /cdrom**
4. Insert the HP Operations Smart Plug-ins DVD into the DVD-ROM drive and mount it by typing the following command:

   mount -r -F cdfs /dev/<cdrom_drive_name> /<mount_point>

   For example, on a local DVD-ROM, you may type:

   mount -r -F cdfs /dev/dsk/c0t2d0 /cdrom

   You can also run SAM and mount the DVD-ROM to a specific path in the Disks and File Systems window.
5. Install the product by entering the following command:

   swinstall -s /cdrom/OV_DEPOT/11.0HPUX.depot WSSPI

Installing the Web Server SPI on a Solaris Management Server

1. Insert the HP Operations Smart Plug-ins DVD into the DVD-ROM drive. The DVD is automatically mounted (and unmounted) on Sun Solaris systems.
2. Install the product by entering the following command:

   swinstall -s /cdrom/OV_DEPOT/SOLARIS.sparc WSSPI

Web Server SPI Components

The Web Server SPI installs the following components on the HPOM for UNIX management server:

- Message Groups
- Applications and Application Groups
- Templates and Template Groups

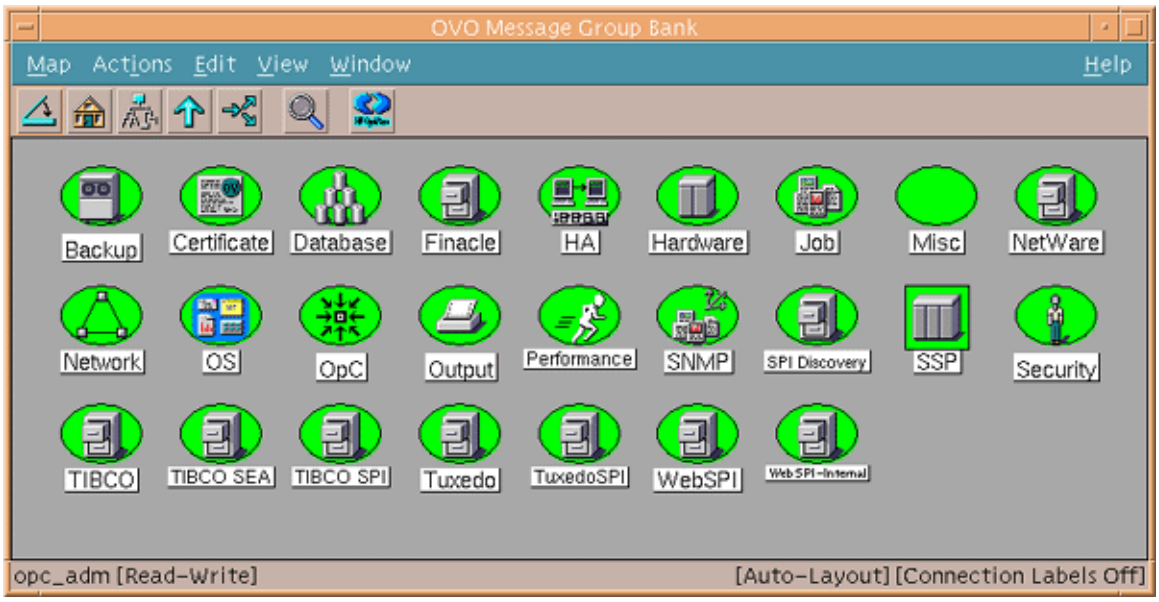
Message Groups

Installation of Web Server SPI creates two new message groups, which are as follows:

- WebSPI
- WebSPI-Internal

The Message Group Bank is shown in the following figure:

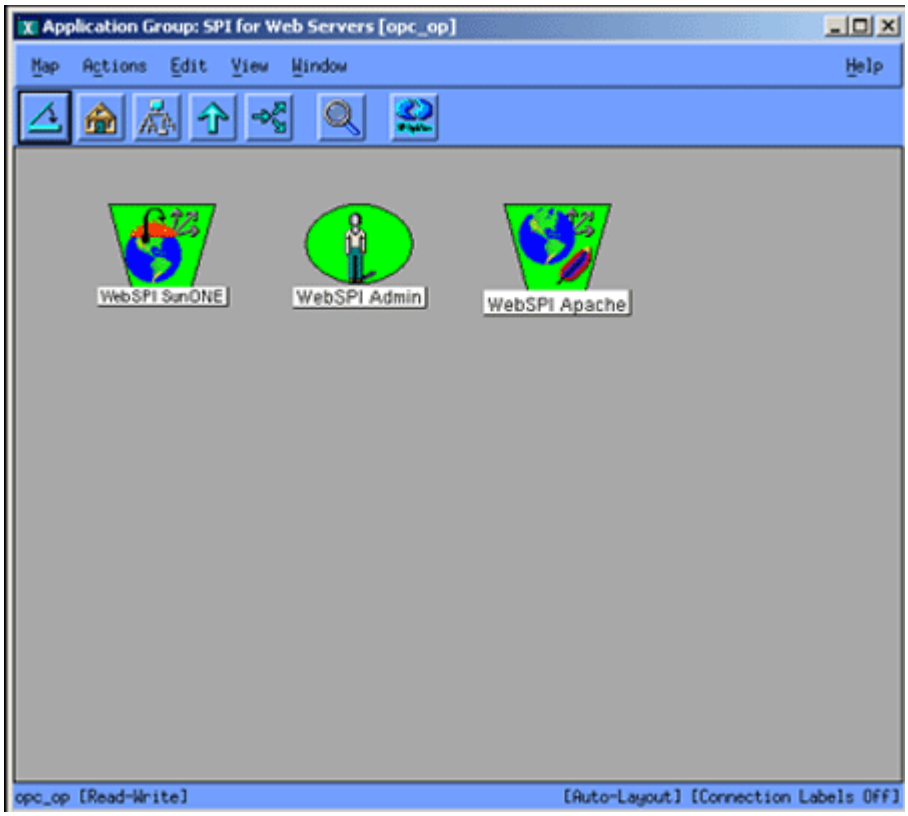
Figure 1 Web Server SPI Message Groups



Applications and Application Groups

Upon installation the Web Server SPI adds the application group to the Application Bank as illustrated in below:

Figure 2 Web Server SPI Application Groups



The application group called “SPI for Web Servers” contains application groups for managing Sun ONE and Apache web servers. For more information on applications, see the following sections:

- Web Server SPI Applications for Managing Apache Web Server on page 23
- Web Server SPI Applications for Managing Sun ONE Web Server on page 24

Before many applications can function properly, it is necessary to prepare the node for Web Server SPI management by running the appropriate Configure Node tool on the managed node.

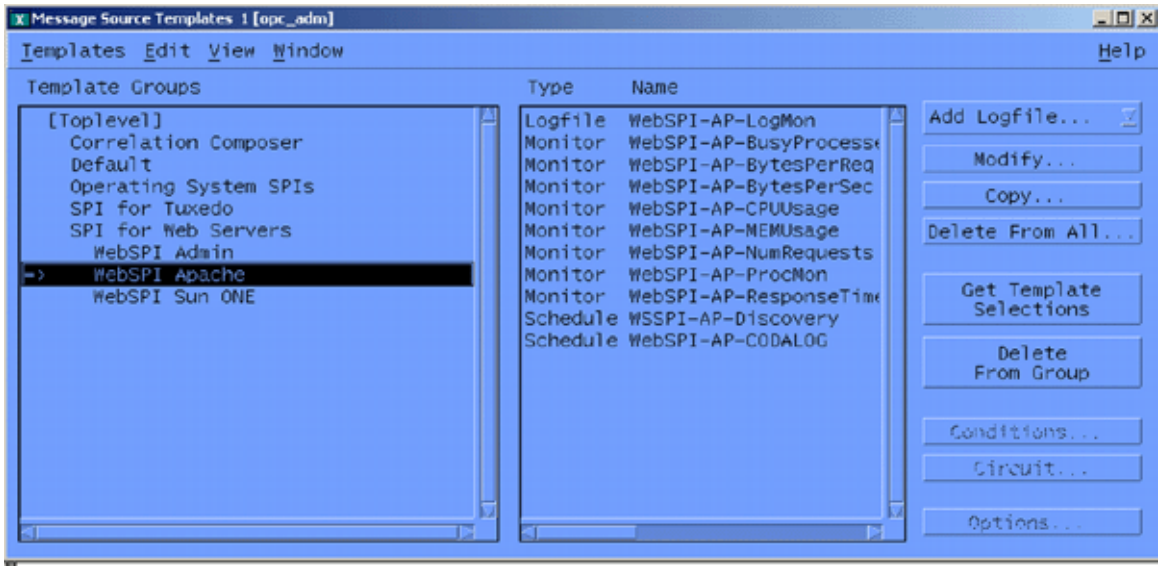
Templates and Template Groups

The Web Server SPI adds a template group called “SPI for Web Servers,” as shown in Figure 3 on page 15. This template group contains additional application groups for monitoring Web Servers. Each template group offers templates for log files and for process and performance metric monitoring.

The additional template group WebSPI_Admin contains a log file monitor for the internal error log of the Web Server SPI. For additional information on Web Server SPI templates and template groups, see the following sections:

- Web Server SPI Applications for Managing Apache Web Server on page 23
- Web Server SPI Applications for Managing Sun ONE Web Server on page 24

Figure 3 Web Server SPI Template Groups

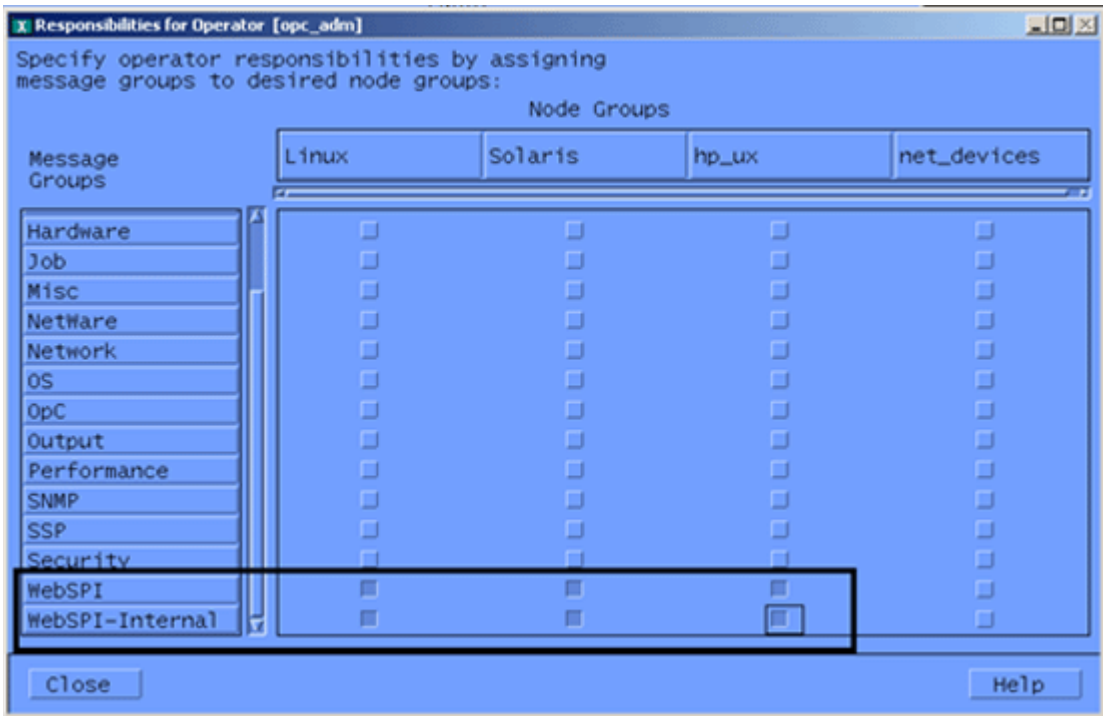


Before deploying Web Server SPI templates to a managed node, first prepare the node for management by running the Configure Node tool for the appropriate node and installed web server.

Web Server SPI Operator Responsibilities

Web Server SPI operators must be assigned responsibilities to receive messages fromWebSPI-Internal and WebSPI message groups, as illustrated in the following figure:

Figure 4 Web Server SPI Operator Responsibilities



Follow the instructions below to set or edit Web Server SPI Operator responsibilities:

1. Open the User Bank.
2. To change a User's responsibilty, right-click the user and select **Modify.**
3. Click **Responsibilities** and assign responsibilities to the user based to your requirements.

For additional information on user responsibilities, see *HP Operations for UNIX Concepts Guide*.

Uninstalling the Web Server SPI for HPOM for UNIX

To completely uninstall the Web Server SPI, you must uninstall it first from the HPOM managed nodes, and then from the HPOM management server. The uninstallation is semi-automatic, and some manual steps are required. Follow these steps to ensure complete removal.

Uninstalling Web Server SPI Components from the Managed Nodes

1. Select the Web Server SPI managed nodes in theWeb Servers Node Bank window from which you wish to uninstall the Web Server SPI.
2. Select **Actions: Agents** → **Assign Templates** and remove all Web Server SPI templates groups. Click on **[OK]**.
3. Select **Actions: Agents** → **Install/Update SW & Config** from the menu. In the Install/Update Web Servers Software and Configuration window, check the following checkboxes:
   - Templates
   - Actions
   - Monitors
   - Commands
4. Click **OK** to start the distribution. If the distribution was successful, you receive a message in the Web Server's message browser.
5. Select the managed node and launch the application by double-clicking or launching the application:

   WebSPI_Admin → Remove WebSPI

The executables and configurations are now removed from the Web Server SPI.

Deleting Web Server SPI Components from the HPOM Management Server

Web Server SPI components must be deleted manually:

- Delete the WebSPI-Internal and WebSPI-Web Servers message groups.
- Delete the SPI for Web Servers application group.
- Delete the SPI for Web Servers template group and all of its groups and templates.

To speed the process, use the **SHIFT**-click method to select multiple templates for deletion.

1. To delete the SPI for Web Servers templates and template groups, open the Message Source Templates window.

   Open each SPI for Web Servers template group. Then select each of the templates in the group. (Use **SHIFT**-click to select all templates.) Select **[Delete From All...]** to delete the templates.

   After deleting all the templates, select all SPI for Web Servers template groups and delete them.

2. To delete the WebSPI-Internal and WebSPI-WebServers message groups, open the HPOM for UNIX Application Bank, select the **Web Server SPI** message group, and select **Delete** from the right-click pop-up menu.

3. To delete the SPI for Web Servers application group and its contents, open the HPOM for UNIX Application Bank, select the **SPI for Web Servers** application group, and select **Delete** from the right-click popup menu.

4. To remove Web Server SPI default text, actions, monitors, and commands from `/var/opt/OV/share/databases/OpC/mgd_node/customer/...` on the management server, run the following commands according to the appropriate server platform:

   — for Apache servers:

   `/opt/OV/wsspi/bin/wsspi_apache_clean_acm.sh`

   — for Sun ONE servers:

   `/opt/OV/wsspi/bin/wsspi_sunone_clean_acm.sh`

After successfully deleting all Web Server SPI components, continue with Uninstalling the Web Server SPI Components from the HPOM for UNIX Management Server on page 17

Uninstalling the Web Server SPI Components from the HPOM for UNIX Management Server

On HP-UX:

1. Uninstall Web Server SPI interactively, using the `swremove(1M)` GUI. To start `swremove(1M)`, type the following command at the command line:

   `/usr/sbin/swremove`

   The DISPLAY environment variable should be set correctly to your system.

2. Select the WS**SPI** bundle, mark for removal, and proceed with the uninstallation. Or, you can run `swremove(1M)` from the command line by entering the following:

   `/usr/sbin/swremove WSSPI`

3. Check the following logfiles for problems that may occur during the de- installation:

   — `/var/adm/sw/swagent.log`

   — `/var/adm/sw/swremove.log`

On Sun Solaris:

1. Type the following command at the command line:

   `/usr/sbin/swremove WSSPI`

2. Check the following logfiles for problems occurring during the uninstallation:

```
/var/adm/sw/swagent.log
/var/adm/sw/swremove.log
```

3 Web Server SPI Templates and Applications

Introduction

After installation and distribution of Web Server SPI templates and instrumentation to a managed node, if any of the web servers are running on the node, the SPI discovers the web servers and configures them with the SPI. After this configuration, each web server can be monitored and managed.

You can also use the SPI to configure web servers manually by following the appropriate instructions in Manually Configuring Web Servers on page 20.

If you find that you need to adapt any of the default templates supplied with Web Server SPI, you can easily do so. See the *HP Operations Manager Concepts Guide* and the *HP Operations Manager Administrator's Reference* for general information.

After you successfully install, re-install, or uninstall the Web Server SPI from the managed node, as explained in Chapter 2, Installing the Web Server SPI it is necessary to distribute the Web Server SPI templates to the managed nodes.

You must deploy the default `opcmsg(1|3)` template for the appropriate platform on the node to receive Web Server SPI messages in the message browser of the management server.

If you recieve error messages from your message browser stating the applications are not working properly, ignore the messages until the managed nodes are configured properly.

Manually Configuring Web Servers

If the Web Server SPI is not able to detect a web server instance on a managed node, you can configure the web server manually. To configure web servers manually, follow the relevant procedures below.

Sun ONE Web Server

1. Select **SPI for Web Servers** → **WebSPI SunONE** → **Configure Sun ONE Node**.

   A message prompts for the `magnus.conf` path.

2. Enter the complete path to the `magnus.conf` file.

   The web server configuration utility accesses the file. If the file is readable and is a valid `magnus.conf` file, the SPI configures the web server.

Apache Web Server

Before proceeding to configure, make sure that the Apache web server is not running.

1. Select **SPI for Web Servers** → **WebSPI Apache** → **Configure Apache Node**.

   A message prompts for the `httpd.conf` path.

2. Enter the complete path to the `httpd.conf` file.

   If Perl is not installed, you must configure the Apache web server by adding the additional parameter named module to the configuration tool as follows: **`httpd.conf module`**. This method might not work with Apache versions later than 2.0.55. Specify the tag for the Server Name as follows: *<ServerName> <IPAddress>:<Port>*

   The web server configuration utility accesses the file. If the file is readable and is a valid `httpd.conf` file, the SPI configures the web server.

Web Server SPI Discovery Templates

A Web Server SPI discovery template is a schedule template that detects the web servers running on the managed nodes and constructs a service map, which is then displayed in the Service Navigator console. There is one discovery template for each supported web server:

- WebSPI-AP-Discovery — This template detects any new instances of the Apache web server.
- WebSPI-SO-Discovery — This template detects any new instances of the Sun ONE web server.

All discovery templates must be distributed to the management server after distributing instrumentation to the managed nodes. Before you deploy discovery templates, make sure that the HP Operations agent has been installed on the management server. The discovery template is scheduled to run once a day, but you can use the HPOM template administration window to change this interval.

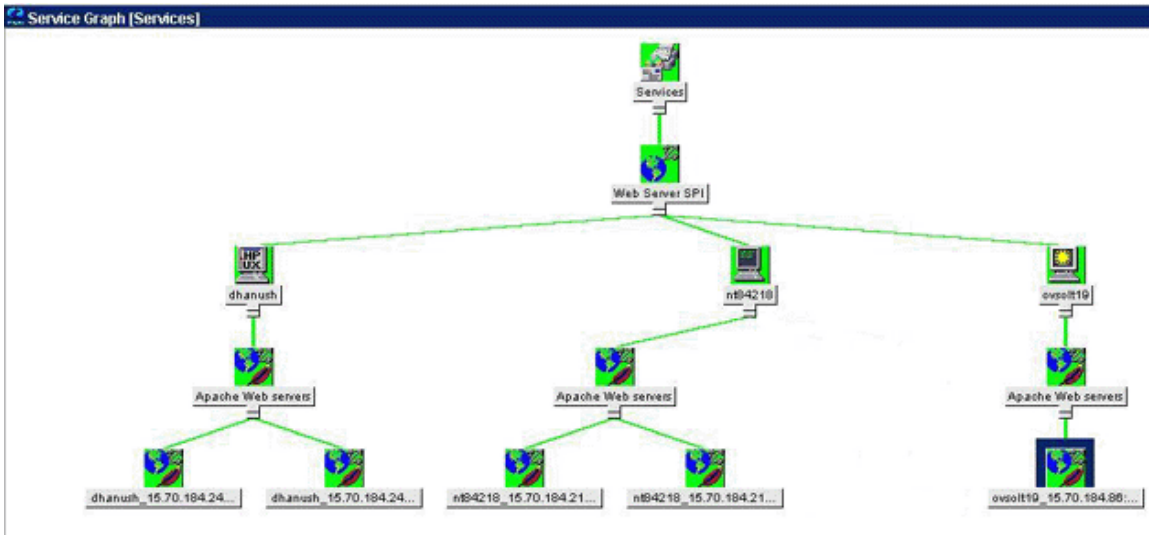
Perform the following steps to enable discovery:

1. Assign managed nodes to the WSSPI-Discovery node group.
2. Assign and deploy the service discovery templates on the management server. See the template names above and deploy the templates that correspond to the types of web servers you use, for example, WebSPI-AP-Discovery for Apache web servers.

   The discovery template schedules the discovery program to run at configured intervals. The program discovers any new instances of the web servers running on the nodes.
3. If new web server instances are discovered, the Web Server SPI configures them.

   The discovery program reads the file `/var/opt/OV/wsspi/conf/wsspi.cfg` and writes the XML file, which the system uploads to the Service Navigator database on the management server.
4. View the service map using the Service Navigator console.

Figure 5 Sample Discovery Service Map



Web Server SPI Applications for Administration

You will find the Web Server SPI applications for administration under the WebSPI Admin application group (`SPI for Web Servers > WebSPI Admin`). The applications are described below.

Application	Description	Application Input
Remove WebSPI	Removes the Web Server SPI instrumentation and configuration data from a previously configured UNIX node. Instrumentation of other products is not affected.	None
Show All Web Services	Displays the details of all configured web services.	None
Show WebSPI History Log	Displays the Web Server SPI log file for all sites running supported web services.	None
Self-Healing Info	Gathers system information as well as configuration, log, and trace files of Web Server SPI when a problem occurs in the Web Server SPI. The information helps you troubleshoot the problem. For more information, see Using the Self-Healing Info Application on page 31	None

Web Server SPI Applications for Managing Apache Web Server

You will find the Web Server SPI applications for the Apache web server under the WebSPI Apache application group (SPI for Web Servers > `WebSPI Apache`). The applications are described below.

Application	Description	Application Input
Configure Apache Node	Configures Apache with Web Server SPI. After configuration is complete, SPI will be able to monitor and manage web server instances. WS-SPI performance Apache module (`mod_hpspi.c`) collects web server performance data. To load `mod_hpspi.c`, enable Apache `mod_so` module before configuring web server. See Apache Administration Guide for instructions on enabling `mod_so`.	path to `httpd.conf`
UnConfigure Apache Node	Removes the configuration information of the specified Apache node.	IP address and port number
Start Apache	Starts Apache web server.	IP address and port number
Stop Apache	Stops Apache web server.	IP address and port number
Restart Apache	Restarts Apache web server.	IP address and port number
Status of Apache	Displays Apache web server status.	IP address and port number
Show Apache Configuration	Displays Apache configuration details.	IP address and port number
Show Apache Node Details	Displays Apache web server details, such as server root, document root, and web server version.	IP address and port number
Show Apache Error Log	Displays Apache web server error log file.	IP address and port number
Show Apache Access Log	Displays Apache web server access log file.	IP address and port number
Configure CODA	Compiles the CODA configuration specification files and creates the log file set.	None

You will be prompted to enter an IP address as application input only if the web server is configured to run on multiple IP addresses.

Web Server SPI Applications for Managing Sun ONE Web Server

You will find the Web Server SPI applications for the Sun ONE web server under the WebSPI Sun ONE application group (**SPI for Web Servers** → **WebSPI Sun ONE**). The applications are described below.

Application	Description	Application Input
Configure Sun ONE Node	Configures Sun ONE with Web Server SPI. After configuration is complete, SPI will be able to monitor and manage web server instances. WS-SPI collects performance data from web server SNMP agent; configure SNMP agent with Sun ONE web server before configuring web server with SPI.	path to magnus.conf
UnConfigure Sun ONE Node	Removes the configuration information of the specified Sun ONE node.	IP address and port number
Start Sun ONE	Starts Sun ONE web server.	IP address and port number
Stop Sun ONE	Stops Sun ONE web server.	IP address and port number
Restart Sun ONE	Restarts Sun ONE web server.	IP address and port number
Status of Sun ONE	Displays Sun ONE web server status.	IP address and port number
Show Sun ONE Configuration	Displays Sun ONE configuration details.	IP address and port number
Show Sun ONE Node Details	Displays Sun ONE web server details, such as server root, document root, and web server version.	IP address and port number
Show Sun ONE Error Log	Displays Sun ONE web server error log file.	IP address and port number
Show Sun ONE Access Log	Displays Sun ONE web server access log file.	IP address and port number

You will be prompted to enter an IP address as application input only if the web server is configured to run on multiple IP addresses.

Web Server SPI Templates for Monitoring Apache Web Server

You will find the Web Server SPI templates for monitoring the Apache web server by following this navigation path: **Window** → **Message Source Templates** → **SPI for Web Servers** → **WebSPI Apache**. The following table describes the templates.

Template	Description
WebSPI-AP-LogMon	Monitors the Apache web server's error log file. The template sends messages to the OV message browser for the following conditions in the web server error log file: Alert, Critical, Error, or Warning.
WebSPI-AP-BusyProcessRate	Computes the percentage of processes that are running serving requests versus the total number of web server processes.
WebSPI-AP-BytesPerReq	Computes the number of bytes that each request contains.
WebSPI-AP-BytesPerSec	Computes the Apache web server number of inbound bytes transferred per second.
WebSPI-AP-CODALOG	Collects data for each configured Apache web server and logs it into CODA. The metrics collected for each web server instance include the IP address, port number, CPU usage, memory usage, number of bytes transferred every second, number of bytes transferred for every request, and percentage of busy processes for the web server instance. By default, the template runs every five minutes.
WebSPI-AP-CPUUsage	Computes the percentage of CPU used by the Apache web server.
WebSPI-AP-Discovery	Detects any new instances of the Apache web server.
WebSPI-AP-MEMUsage	Computes the percentage of total system memory used by the Apache web server.
WebSPI-AP-NumRequests	Computes the number of requests processed by the Apache web server.
WebSPI-AP-ProcMon	Checks whether the Apache web server processes of the configured instance are running.
WebSPI-AP-ResponseTime	Computes the Apache web server response time.

Web Server SPI Templates for Monitoring Sun ONE Web Server

You will find the Web Server SPI templates for monitoring the Sun ONE web server by following this navigation path: **Window** → **Message Source Templates** → **SPI for Web Servers** → **WebSPI Sun ONE**. The following table describes the templates.

Template	Description
WebSPI-SO-LogMon	Monitors the Sun ONE web server's error log file. The template sends messages to the OV message browser if any of these conditions occurs for the monitored web server instance: Alert, Critical, Emergency, Error, or Warning. These message types are suppressed: Notice and Info.
WebSPI-SO-CPUUsage	Computes the percentage of CPU used by the Sun ONE web server. A Critical message is sent to the OV message browser if CPU usage goes above 80%.
WebSPI-SO-Discovery	Detects any new instances of the Sun ONE web server.
WebSPI-SO-ErrorRate	Computes the number of errors generated as compared to the total number of requests.
WebSPI-SO-MemoryUsage	Computes the percentage of total system memory used by the Sun ONE web server. A Critical message is sent to the OV message browser if the memory usage goes above 70%.
WebSPI-SO-ProcMon	Checks whether the Sun ONE web server processes of the configured instance are running.
WebSPI-SO-ResponseTime	Computes the Sun ONE web server response time.
WebSPI-SO-ThreadRate	Computes the percentage of Sun ONE web server running threads compared to the total number of threads.

Web Server SPI Template for Monitoring SPI Log Files

You will find the Web Server SPI template for monitoring the Web Server SPI log files following this navigation path: **Window** → **Message Source Templates** → **SPI for Web Servers** → **WebSPI Admin**.

The template, which is called WebSPI-InternalErrorLog, monitors the Web Server SPI error log file. The template sends a message to the OV message browser if any of these message types appears in the error log file: Error, Info, or Warning.

A Reference Information

Web Server SPI Software Bundle

The Web Server SPI principal bundle is a hierarchical structure made up of associated bundles, products, and filesets. You can view these software components using the `swinstall` GUI of SD-UX if you are running web servers on an HP-UX management server.

Table 4 Web Server SPI Software Bundle and Filesets

	Name	Description
Web Server SPI Product	WSSPI	HP Operations Smart Plug-in for Web Servers
Web Server SPI Filesets (contained in WSSPI Bundle)	WSSPI-CORE	WSSPI—Common Core/Documentation for HPOM
	WSSPI-HPUX	WSSPI for HPUX
	WSSPI-LINX	WSSPI for Linux
	WSSPI-SOL	WSSPI for Solaris
	WSSPI-AP-CORE	WSSPI for Apache Server Common Core
	WSSPI-AP-HPUX	WSSPI for Apache Server on HP-UX
	WSSPI-AP-LINX	WSSPI for Apache Server on Linux
	WSSPI-AP-SOL	WSSPI for Apache Server on Solaris
	WSSPI-SO-CORE	WSSPI for Sun ONE Server Common Core
	WSSPI-SO-HPUX	WSSPI for Sun ONE Server on HP-UX
	WSSPI-SO-LINX	WSSPI for Sun ONE Server on Solaris
	WSSPI-SO-SOL	WSSPI for Sun ONE Server on Linux

B Troubleshooting

This chapter provides problem descriptions and troubleshooting steps for the Web Server SPI only. For general troubleshooting, see the *HP Operations Manager for UNIX Administrator Reference Volumes I and II*.

Applications and Monitors Report Missing Configuration

All applications except the Configure Node applications rely on a properly configured node. If you receive an error message like the following when starting an application your node has not yet been configured:

```
Configuration file /var/opt/OV/wsspi/conf/wsspi.cfg not found or no read access.
```

This error probably occurred because you did not configure the node for management of the Apache web server. You must run the Apache configuration tool on this node before you are able to launch this tool.

You will also get error messages in the Message Browser if you deployed the process monitor templates on any node that is not configured. In both cases, run the proper Configure Node application according to your web server until this application succeeds.

Using the Self-Healing Info Application

The Self-Healing Info application gathers system information as well as configuration, log, and trace files of Web Server SPI when a problem occurs in the Web Server SPI.

All the gathered information and files are placed in a pre-defined output directory, thereby facilitating faster troubleshooting. Also, the data collector is used to gather real-time data, which reduces the probability of troubleshooting with stale data.

Whenever you encounter a problem with the Web Server SPI, run the data collector by launching the Self-Healing Info application in the WebSPI Application group.

Prior to using the Self-Healing Info application, turn on tracing, reproduce the problem, and then run the application.

To launch the data collector on the node from where you want to gather data, drag the icon of the node and drop it on the Self-Healing Info application in the WebSPI Application group window for the respective operating system. The output is placed as `/tmp/SPI_WEBSERV_support.tar` on UNIX nodes. You can submit this file to HP Support for assistance or use this file to identify and correct the problem you encountered.

Depending on the Windows setting, the file may be a hidden file on some managed nodes. If you do not see the file, open Windows Explorer and from the **Tools** menu select the **View** tabbed page in the **Folder** Options.. . Under **Hidden Files and Folders**, select **Show Files and Folders**.

Web Server SPI Log Files

The web server SPI provides two different log files, which are located in the directory `/var/opt/OV/wsspi/log` on the managed nodes.

Error Log

Error, warning, and information messages from actions, commands, and monitors are logged to the Web Server SPI's error log file `/var/opt/OV/wsspi/log/wsspi_error.log`.

If you deploy the template WebSPI_InternalErrorLog on the managed node, all new entries will be forwarded to the management server and displayed in the default text below:

```
Message Browser (Application: WebSPI; Message Group: WebSPI-Internal;
Object: error_log).
```

Trace Log

If you enable tracing, the tracing information will be logged to `/var/opt/OV/wsspi/log/wsspi_trace.log`.

The trace log is not localized.

Using Tracing

Tracing enables you to drill down to the source of problems by getting more information on what the scripts are processing.

How to Enable Tracing

1. Log in to the managed node.
2. Locate and change the script you wish to trace:
   - For HTTPS: `/var/opt/OV/bin/instrumentation`
   - For DCE, the directory is branched into three sub-directories
     Actions: `/var/opt/OV/bin/OpC/actions`
     Commands: `/var/opt/OV/bin/OpC/cmds`
     Monitors: `/var/opt/OV/bin/OpC/monitor`
3. Open the script you wish to trace with a text editor.
4. Uncomment the line: `#WSSPI_TRC_LVL=<trace_level>`
5. Set trace level to a number between 0 and 9, where a trace level of 0 sets tracing off and a trace level of 9 gives you the all available tracing messages

The format of each trace message is as follows:

```
<date> <time> WSSPI(<trace_obj>-<pid>): <message>
```

Where the fields have the following meanings:

<date>	Current date, when the message has been added.
<time>	Current time, when the message has been added
<trace_obj>	Trace object, in general the name of the script that is the source of the trace message.
<pid>	Process ID of the script.
<message>	The message text. If the message is sent from a sub function, this message contains the name of the function as prefix.

Sample Trace Files

A sample output of a trace file for the configuration of an Apache server with trace level 9 is listed below:

```
11/28/2001 10:22:22 WSSPI(wsspi_ap_conf.sh-28925): Configuration started: Command:
wsspi_ap_conf.sh
11/28/2001 10:22:22 WSSPI(wsspi_ap_conf.sh-28925): Running discovery in non-interactive
mode.
11/28/2001 10:22:32 WSSPI(wsspi_ap_conf.sh-28925): getApacheBinUsingRpm(): No Apache RPM
package found.
11/28/2001 10:22:32 WSSPI(wsspi_ap_conf.sh-28925): getApacheBinUsingPathes(): Searching
for Apache binary in the path /bin/httpd
11/28/2001 10:22:32 WSSPI(wsspi_ap_conf.sh-28925): getApacheBinUsingPathes(): Searching
for Apache binary in the path /sbin/httpd
11/28/2001 10:22:32 WSSPI(wsspi_ap_conf.sh-28925): getApacheBinUsingPathes(): Searching
for Apache binary in the path /usr/sbin/httpd
11/28/2001 10:22:32 WSSPI(wsspi_ap_conf.sh-28925): getApacheBinUsingPathes(): Found Apache
binary: /usr/sbin/httpd
11/28/2001 10:22:32 WSSPI(wsspi_ap_conf.sh-28925): getApacheBin(): No Apache binary in
predefined paths found.
11/28/2001 10:22:32 WSSPI(wsspi_ap_conf.sh-28925): getHttpConfUsingProcess(): System is a
non-HP-UX system
11/28/2001 10:22:32 WSSPI(wsspi_ap_conf.sh-28925): getHttpConfUsingProcess(): Found
configuration file in parameters: /etc/httpd/httpd.conf
11/28/2001 10:22:32 WSSPI(wsspi_ap_conf.sh-28925): getServerRoot(): Found server root in
Apache configuration file:
11/28/2001 10:22:32 WSSPI(wsspi_ap_conf.sh-28925): getHttpdPid(): Found pid file: /var/
run/httpd.pid
11/28/2001 10:22:32 WSSPI(wsspi_ap_conf.sh-28925): getHttpLog(): Found error log file: /
var/log/httpd/error_log
11/28/2001 10:22:33 WSSPI(wsspi_ap_conf.sh-28925): createLinks(): Created links to the
error log files in the directory /var/opt/OV/wsspi/link/apache.
11/28/2001 10:22:33 WSSPI(wsspi_ap_conf.sh-28925): writeConf(): Discovered information
about managed server written to /var/opt/OV/wsspi/conf/wsspi_apache.cfg.
11/28/2001 10:30:02 WSSPI(wsspi_ap_conf.sh-29659): Configuration started: Command:
wsspi_ap_conf.sh
11/28/2001 10:30:03 WSSPI(wsspi_ap_conf.sh-29659): Running discovery in non-interactive
mode.
11/28/2001 10:30:11 WSSPI(wsspi_ap_conf.sh-29659): getApacheBinUsingRpm(): No Apache RPM
package found.
11/28/2001 10:30:12 WSSPI(wsspi_ap_conf.sh-29659): getApacheBinUsingPathes(): Searching
for Apache binary in the path /bin/httpd
11/28/2001 10:30:12 WSSPI(wsspi_ap_conf.sh-29659): getApacheBinUsingPathes(): Searching
for Apache binary in the path /sbin/httpd
11/28/2001 10:30:12 WSSPI(wsspi_ap_conf.sh-29659): getApacheBinUsingPathes(): Searching
for Apache binary in the path /usr/sbin/httpd
11/28/2001 10:30:12 WSSPI(wsspi_ap_conf.sh-29659): getApacheBinUsingPathes(): Found Apache
binary: /usr/sbin/httpd
11/28/2001 10:30:12 WSSPI(wsspi_ap_conf.sh-29659): getApacheBin(): No Apache binary in
predefined paths found.
```

```
11/28/2001 10:30:12 WSSPI(wsspi_ap_conf.sh-29659): getHttpConfUsingProcess(): System is a
non-HP-UX system
11/28/2001 10:30:12 WSSPI(wsspi_ap_conf.sh-29659): getHttpConfUsingProcess(): Found
configuration file in parameters: /etc/httpd/httpd.conf
11/28/2001 10:30:12 WSSPI(wsspi_ap_conf.sh-29659): getServerRoot(): Found server root in
Apache configuration file:
11/28/2001 10:30:12 WSSPI(wsspi_ap_conf.sh-29659): getHttpdPid(): Found pid file: /var/
run/httpd.pid
11/28/2001 10:30:12 WSSPI(wsspi_ap_conf.sh-29659): getHttpLog(): Found error log file: /
var/log/httpd/error_log
11/28/2001 10:30:13 WSSPI(wsspi_ap_conf.sh-29659): getApacheBinParameters() determined
that Apache has been started with the following parameters: -f /etc/httpd/httpd.conf
11/28/2001 10:30:13 WSSPI(wsspi_ap_conf.sh-29659): createLinks(): Created links to the
error log files in the directory /var/opt/OV/wsspi/link/apache.
11/28/2001 10:30:13 WSSPI(wsspi_ap_conf.sh-29659): writeConf(): Discovered information
about managed server written to /var/opt/OV/wsspi/conf/wsspi_apache.cfg.
```

Node Configuration Problems

This section provides assistance with problems that may arise when you configure nodes.

ERROR: `cp: Cannot create` *<apache home directory>*`/modules/mod_hpspi.so: Text file busy`.

Solution: Stop the Apache web server and run the "Configure Apache Node" application again.

Discovery Problems

This section provides assistance with problems that may arise when you use the Web Server SPI discovery program.

- **ERROR**: System is unable to detect the web servers.

  Solution: Web server instances may not be running on the managed node. If no web server instances are running, the discovery program cannot detect them.

  For more information on the exact cause of the problem, check the WS-SPI internal error log file: `/var/opt/OV/wsspi/log/wsspi_error.log`.

- **ERROR**: System is unable to create the Web Server SPI service map.

  Solution: Make sure that managed nodes are assigned to the WSSPI-Discovery node group and verify that the appropriate discovery templates are deployed to the management server.

- **ERROR**: System is unable to run the discovery program on a managed node.

  Solution: Make sure that the node is assigned to the WSSPI-Discovery node group and that the HP Operations agent is running on the managed node.

  Also, be aware that the discovery program uses the opctranm tool to perform the discovery process. If multiple instances of opctranm are running simultaneously, make sure that the appropriate patch is installed on the management server:

  - For HP-UX, patch PHSS_30125
  - For Sun Solaris, patch ITOSOL_00266

  Without this patch, the discovery program exits if it encounters multiple, simultaneous instances of opctranm.

Index

R

S

T

U

W

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