

HP Operations Smart Plug-ins for Infrastructure

for HP Operations Manager for Windows®, HP-UX, Linux, and Solaris operating systems

Software Version: 1.60

Installation Guide

Document Release Date: May 2010
Software Release Date: May 2010



Legal Notices

Warranty

The only warranties for HP products and services are set forth in the express warranty statements accompanying such products and services. Nothing herein should be construed as constituting an additional warranty. HP shall not be liable for technical or editorial errors or omissions contained herein.

The information contained herein is subject to change without notice.

Restricted Rights Legend

Confidential computer software. Valid license from HP required for possession, use or copying. Consistent with FAR 12.211 and 12.212, Commercial Computer Software, Computer Software Documentation, and Technical Data for Commercial Items are licensed to the U.S. Government under vendor's standard commercial license.

Copyright Notices

© Copyright 2009-2010 Hewlett-Packard Development Company, L.P.

Trademark Notices

Microsoft® and Windows® are U.S. registered trademarks of Microsoft Corporation.

UNIX® is a registered trademark of The Open Group.

Adobe®, Acrobat® and PostScript® are trademarks of Adobe Systems Incorporated.

Java™ and all Java based trademarks and logos are trademarks or registered trademarks of Sun.

Documentation Updates

The title page of this document contains the following identifying information:

- Software Version number, which indicates the software version.
- Document Release Date, which changes each time the document is updated.
- Software Release Date, which indicates the release date of this version of the software.

To check for recent updates or to verify that you are using the most recent edition of a document, go to:

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

This site requires that you register for an HP Passport and sign in. To register for an HP Passport ID, go to:

<http://h20229.www2.hp.com/passport-registration.html>

Or click the **New users - please register** link on the HP Passport login page.

You will also receive updated or new editions if you subscribe to the appropriate product support service. Contact your HP sales representative for details.

Support

Visit the HP Software Support Online web site at:

www.hp.com/go/hpsoftwaresupport

This web site provides contact information and details about the products, services, and support that HP Software offers.

HP Software online support provides customer self-solve capabilities. It provides a fast and efficient way to access interactive technical support tools needed to manage your business. As a valued support customer, you can benefit by using the support web site to:

- Search for knowledge documents of interest
- Submit and track support cases and enhancement requests
- Download software patches
- Manage support contracts
- Look up HP support contacts
- Review information about available services
- Enter into discussions with other software customers
- Research and register for software training

Most of the support areas require that you register as an HP Passport user and sign in. Many also require a support contract. To register for an HP Passport ID, go to:

<http://h20229.www2.hp.com/passport-registration.html>

To find more information about access levels, go to:

http://h20230.www2.hp.com/new_access_levels.jsp

Contents

1	Installation Overview	9
	Conventions Used in this Manual	9
	Infrastructure SPIs DVD Content and Descriptions	10
	Systems Infrastructure SPI version 1.60	10
	Virtualization Infrastructure SPI version 1.60	10
	Cluster Infrastructure SPI version 1.60	10
	Reports Package for the Infrastructure SPIs	10
	Graphs Package for the Infrastructure SPIs	11
	HP OMi Content Packs for Infrastructure Management	11
	Product Documentation	11
	Disk Space Requirements	12
	Supported Platforms	13
	Supported Management Server Platforms	13
	Supported Managed Node Platforms	13
	Supported Clusters	14
	Supported HP Performance Agent Versions	14
	Supported HP Performance Manager Versions	14
	Supported HP Reporter Versions	14
	Licenses for the Software	14
	Language Options	15
2	Installing the Infrastructure SPIs	17
	Installing on the HPOM for Windows Management Server	17
	Attended Installation	17
	Unattended Installation	22
	Installing on the HPOM for UNIX Management Server	23
	Attended Installation	23
	Unattended Installation	27
	Installing the Infrastructure SPIs in a Cluster Environment	28
	Installing the Reports Package when HP Reporter is Installed on a Separate System	29
	Installing the Graphs Package when HP Performance Manager is Installed on a Separate System	29
	Installation Results	29
	Installation Result on HPOM for Windows Management Server	29
	Installation Result on the HPOM for UNIX Management Server	30
	Removal of Autodeployment for Operating System SPIs	30
	Upgrading from Virtualized Infrastructure SPI version 1.00	30
	Upgrading from Infrastructure SPIs version 1.00	30
	Upgrading Infrastructure SPIs on HPOM for Windows	31
	Upgrade Results on HPOM for Windows	31

Policy Deployment After Upgrade	33
Upgrading the Infrastructure SPIs on HPOM on Linux and HP-UX	34
Upgrade Results on HPOM on Linux and HP-UX	34
Policy Deployment After Upgrade	36
Migrating from the Operating System SPIs to the Infrastructure SPIs	37
3 Validation	39
Components of the Infrastructure SPIs on HPOM for Windows	39
Services	39
Service Type Models	40
Nodes	43
Tools	43
Policy management	44
Reports	45
Graphs	45
Components of the Infrastructure SPIs on HPOM for UNIX	46
Services	46
Tools	47
Policy Management	48
Reports	49
Graphs	50
4 Getting Started	53
Getting Started on HPOM for Windows	53
Adding Managed Nodes and Deploying SI SPI Discovery	53
Running Discovery Policies on the Virtualized Infrastructure	54
Running Discovery Policies on the Cluster Infrastructure	55
Deploying Quick Start Policies on HPOM for Windows	55
Getting Started on HPOM for UNIX	57
Adding Managed Node and Deploying SI SPI Discovery	57
Running Discovery Policies on the Virtualized Infrastructure	57
Running Discovery Policies on the Cluster Infrastructure	58
Deploying Quick Start Policies on HPOM for UNIX	58
Viewing Reports and Graphs	59
Integrating HP Performance Manager with HPOM for UNIX	60
Data Collection for Reports	60
5 Removing Infrastructure SPIs	63
Disk Space Requirement	63
Uninstalling the Infrastructure SPIs from the Windows Management Server	63
Attended Uninstallation of the Infrastructure SPIs from the Windows Management Server	64
Attended Uninstallation of Individual Infrastructure SPIs from the Windows Management Server	65
Unattended Uninstallation of the Infrastructure SPIs from the Windows Management Server	66
Uninstalling the Infrastructure SPIs from the UNIX Server	66
Attended Uninstallation of the Infrastructure SPIs from the UNIX Server	67
Attended Uninstallation of the Infrastructure SPIs from the UNIX Server using command line interface	67
Unattended Uninstallation of Infrastructure SPIs from UNIX Server	68

Removing the Infrastructure SPIs from a Clustered Server Environment	68
Uninstallation Results	68
6 What's new in the Version 1.60 Software	69
Support for HPOM for Solaris and HP OMi	69
Support for AIX, HP-UX and Solaris on Managed Nodes	69
Enhanced Discovery	69
Enhanced Tracing	69
Enhanced Policy Grouping	70
Enhanced Node Group Layout	70
New and Changed Policies	72
Changes in Message Groups	74

1 Installation Overview

This guide describes how to install the HP Operations Smart Plug-ins for Infrastructure, and upgrade to the current version.

The Smart Plug-ins for Infrastructure (Infrastructure SPIs) form a software suite that integrates fully with HP Operations Manager (HPOM). The Infrastructure SPIs extend HPOM's management scope to include monitoring a distributed enterprise-wide base infrastructure including systems, high-availability clusters (HA clusters), and virtual infrastructure. The Infrastructure SPI relates cross domain IT infrastructure events with relevant applications and maps them into a hierarchical service map.

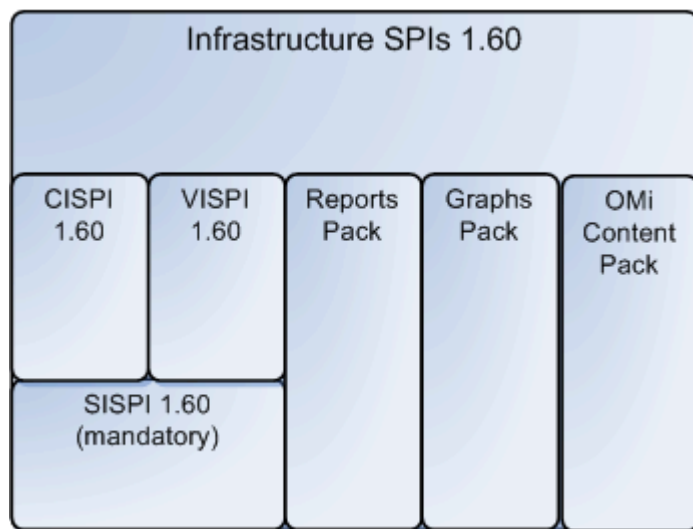
Conventions Used in this Manual

The following conventions are used in this document.

Convention	Description
HPOM for UNIX	Refers collectively to HPOM on HP-UX, Linux, and Solaris. They are used individually to identify the following operating systems: <ul style="list-style-type: none">• HPOM on HP-UX• HPOM on Linux• HPOM on Solaris
Infrastructure SPIs	Refers to the HP Operations Smart Plug-ins for Infrastructure. The software suite includes three Smart Plug-ins: <ul style="list-style-type: none">• HP Operations Smart Plug-in for Systems Infrastructure• HP Operations Smart Plug-in for Virtualization Infrastructure• HP Operations Smart Plug-in for Cluster Infrastructure
SI SPI	HP Operations Smart Plug-in for Systems Infrastructure
VI SPI	HP Operations Smart Plug-in for Virtualization Infrastructure
CI SPI	HP Operations Smart Plug-in for Cluster Infrastructure

Infrastructure SPIs DVD Content and Descriptions

The Infrastructure SPIs media contains the software, documentation, and applicable Reports package, Graphs package, and OMi Content pack. The following figure depicts various components of the Infrastructure SPIs media.



Systems Infrastructure SPI version 1.60

The SI SPI version 1.60 monitors individual system infrastructure performance. The SI SPI helps analyze system performance based on monitoring aspects such as capacity, availability, and utilization. The SI SPI must be installed, while installing other components from the Infrastructure SPIs media, namely the VI SPI, the CI SPI, the reports pack, and the graphics pack.

Virtualization Infrastructure SPI version 1.60

The VI SPI version 1.60 monitors VMware ESX /ESXi and Microsoft Windows 2008 Hyper-V servers and the virtual machines hosted on them. The VI SPI helps to analyze the performance of the host and guest machines based on monitoring aspects such as capacity, utilization, availability, and resource consumption. The VI SPI uses metrics provided by the HP Performance agent for performance and configuration information.

Cluster Infrastructure SPI version 1.60

The CI SPI version 1.60 monitors the availability of an HA cluster (or failover cluster) infrastructure. The CI SPI helps analyze the availability and state of cluster elements along with the process and services running on them.

Reports Package for the Infrastructure SPIs

To generate reports based on the metric data collected from the managed nodes, you need to integrate HP Reporter with HPOM. To view Infrastructure SPIs specific reports, you must install the reports package from the Infrastructure SPIs media on the management server.

You can use the reports to analyze the performance trends of your infrastructure. This helps to identify the potential bottlenecks in your IT system, make accurate predictions for future upgrades, and collect accurate information to measure service levels.

To view reports you must use HP Reporter in conjunction with HPOM.

Graphs Package for the Infrastructure SPIs

To generate and view graphs from data collected from the managed nodes, you need to integrate HP Performance Manager with HPOM. To view Infrastructure SPIs specific graphs, you must install the graphs package from the Infrastructure SPIs media on the management server. The graphs enable you to analyze the Infrastructure performance and resource utilization.

To view graphs you must use HP Performance Manager in conjunction with HPOM.

HP OMi Content Packs for Infrastructure Management

The HP OMi content packs for infrastructure management contain information that HP OMi 8.10 uses to describe the infrastructure objects or configuration items that you are monitoring. For example, the objects can be CPU, operating systems, File System, Cluster Software, or virtual machines that you want to monitor.

The content pack includes event type indicators, health indicators, key performance indicators, mapping rules, KPI calculation and business rules, tool definitions, view mappings, and graphing assignments that help you monitor infrastructure-related events. For details on the HP OMi content packs, see *Using HP Operations Manager i* guide.

Product Documentation

Information on Infrastructure SPIs is available in the following documents.

Document	Location	Purpose
Installation Guide	<CD\DVD-ROM>\Documents	To provide step-by-step instructions on installing, upgrading, configuring, and performing various tasks in Infrastructure SPIs.
Concepts Guide	<CD\DVD-ROM>\Documents	To provide information on Infrastructure SPIs architecture and key concepts used.
Online Help	Available on HPOM console Help drop-down menu	To perform the following tasks: <ul style="list-style-type: none"> • Using the SPI policies • Using the SPI tools • Using Reports • Using Graphs The online help is specific to the individual SPI.

Document	Location	Purpose
User Guide	<CD\DVD-ROM>\Documents	To guide the user to perform the following tasks: <ul style="list-style-type: none"> • Using the SPI policies • Using the SPI tools • Using Reports • Using Graphs The user guide is specific to the individual SPI.
Installation and Reference Guide (for OMi content packs)	<CD\DVD-ROM>\Documents	To provide step-by-step instructions on installing OMi content packs for Infrastructure SPIs, and reference information.
Release Notes	<CD\DVD-ROM>	To provide information on the SPI release.

The Concepts Guide, User Guides, Installation and Reference Guide, and Release Notes are available on the Infrastructure SPIs DVD. You can directly access them from the DVD or copy the documents to the local system for reference.

Disk Space Requirements

The Infrastructure SPIs require the following amount of disk space in the various operating systems.

Operating System	Temporary Folder*	Total Disk Space
Windows	%tmp% - 15MB	90 MB
Linux	/tmp - 35 MB	90 MB
HP-UX	/tmp - 17 MB	240 MB
Solaris	/tmp - 35 MB	80 MB

*The disk space for the temporary folder / drive is required only during installation. These are approximate values.

Supported Platforms

Before installing the Infrastructure SPIs, you must install the supported hardware and software versions. For recent updates to information about the management server operating system versions, the managed node operating system versions, and the related HP product versions that are supported by the Infrastructure SPIs, see the individual release notes:

- *HP Operations Manager Smart Plug-in for Systems Infrastructure Release Notes*
- *HP Operations Manager Smart Plug-in for Virtualization Infrastructure Release Notes*
- *HP Operations Manager Smart Plug-in for Cluster Infrastructure Release Notes*

Supported Management Server Platforms

Operating Systems	Supported HP Operations Manager (HPOM) Versions
Microsoft Windows	HPOM for Windows 8.16 + patches* HPOM for Windows 8.10 + patches*
HP-UX	HPOM on HP-UX 9.0 + patches*
Linux	HPOM on Linux 9.0
Solaris	HPOM on Solaris 9.0

* To find details about the required patches on HPOM, see Release Notes.

Supported Managed Node Platforms

Operating Systems	Supported HP Operations Agent Versions
Microsoft Windows	8.60*
Red Hat Enterprise Linux	8.60*
SuSE Linux Enterprise Server	8.60*
HP-UX	8.60*
Sun Solaris	8.60*
IBM AIX	8.60*

* To find details about the required patches on HPOM, see Release Notes.

Supported Clusters

Cluster	Operating System
ServiceGuard, Veritas Cluster Server	HP-UX
Red HAT Cluster, Veritas Cluster Server, ServiceGuard	Red Hat Enterprise Linux
Sun Cluster	Sun Solaris
Veritas Cluster Server	Sun Solaris
Veritas Cluster Server, ServiceGuard	SLES
MS Cluster	Windows
Veritas Cluster Server	Windows

Supported HP Performance Agent Versions

- For the SI SPI and the CI SPI, installation of HP Performance Agent is optional. In the absence of Performance Agent, the policies take values from HP EPC metrics (available by default). If Performance Agent is present, the policies take values from Performance Agent metrics. If you already have an existing version of HP Performance Agent installed on the managed nodes, upgrade it to version 5.00.
- For the VI SPI, HP Performance Agent version 5.00 is mandatory for metric collection used by the SPI policies.

For information about installing HP Performance Agent, see *HP Performance Agent Installation and Configuration Guide*.

Supported HP Performance Manager Versions

- To install the graphs package on HP-UX, Windows, or Solaris operating system, make sure you have HP Performance Manager version 8.20 (with software patches) or later version installed. To know details about the required patches, see Release Notes.
- To install the graphs package on Linux, make sure you have HP Performance Manager version 8.21 or later version installed on the server.

Supported HP Reporter Versions

To install the reports package for Infrastructure SPIs, make sure you have HP Reporter version 3.80 installed.

Licenses for the Software

No separate license is required for the SI SPI or the CI SPI. These SPIs are included with the purchase of HP Software Operations Instance Advanced LTUs (License to Use). An LTU for the SI SPI and an LTU for the CI SPI are included with each HP Software Operations Instance Advanced LTU.

The license requirements for the Virtualization Infrastructure SPI are defined according to the number of *virtual instances* in the virtualized environment that are managed by the HPOM server using the Virtualization Infrastructure SPI.

- For Microsoft Hyper-V, the licensing depends on the number of Hyper-V hosts to which the VI SPI is deployed. Hyper-V host systems that are monitored by the VI SPI each require a separate VI SPI LTU.
- For the VMware infrastructure, all ESX and ESXi hosts that are monitored using the VI SPI require a separate VI SPI LTU. In VMware environments it is possible that the VI SPI is deployed to a lesser number of servers (on the vSphere Management Appliance – vMA) than the total actually being monitored by the VI SPI. VMware hosts that are remotely monitored using the VI SPI through the vMA also require a separate VI SPI LTU.

When the VI SPI is deployed to monitor a virtual instance, information regarding each of the guest virtual machines is represented in the HP Operations Manager console node bank. This requires that each guest virtual machine on a monitored virtual instance is licensed within the HP Operations Manager server.

There are two license options for guest virtual machines:

- The HP Operations Instance Advanced LTU can be acquired for each guest virtual machine and this provides additional high resolution monitoring for the guest virtual machine.
- An HP Operations Manager Target Connector LTU can be acquired for guest virtual machines.

For additional information on licensing, see the licensing section in the *HP Operations Manager for Windows Installation Guide* or *HP Operations Manager for UNIX Installation Guide*.

The VI SPI comes with a trial license that allows you to use the product for 60 days after you install it.

For more information about how to obtain a license, how to apply the permanent license key password, or how to view a license report on HPOM, refer to the *HP Operations Manager for Windows Installation Guide* or *HP Operations Manager for UNIX Installation Guide*.

Language Options

For HPOM for Windows version 1.60, software is available in English, Japanese, and Simplified Chinese languages. In localization, the user interface elements, web pages, and log files are translated to a specific language. HPOM for Windows supports the Multiple User Interface (MUI) that allows the installation of multiple interface languages on a single system. When installing Infrastructure SPIs with English as the base locale, the installer uploads the policies in the same language as selected at the time of the HPOM for Windows installation. When the locale is Japanese or Simplified Chinese, the installer selects the base locale language.

For HPOM for UNIX, version 1.60, software is available in English. You can install Infrastructure SPIs in a non-English system locale, with user interface elements, web pages, logfiles, online help and user documentation available in English language.

The following language options are available for the Infrastructure SPIs on HPOM servers.

Locale of Base Operating System	HPOM for Windows 8.16	HPOM on HP-UX 9.x	HPOM on Linux 9.x	HPOM on Solaris 9.x
English	MUI - Languages chosen at HPOM for Windows install time	English	English	English
Simplified Chinese	Simplified Chinese	English	English	English
Japanese	Japanese	English	English	English
Any other language	English	English	English	English

2 Installing the Infrastructure SPIs

You must install the Infrastructure SPIs on the HPOM management server. Log on as an administrator for Windows systems, or as a root user for HP-UX, Linux, and Solaris systems.

Installing on the HPOM for Windows Management Server

Read the rest of this guide before you start the installation to plan your decisions and gather the information that you need. You can install the Infrastructure SPIs on your Windows management server by using either of the following procedures.

Attended Installation

The installation wizard guides you through the entire process of SPI installation. Follow these steps:

- 1 Close all open applications.
- 2 If installing from a CDROM/DVD, insert the Infrastructure SPIs CD/DVD media into the CD/DVD-ROM drive of the management server/console system, and open the media contents in the Explorer window.

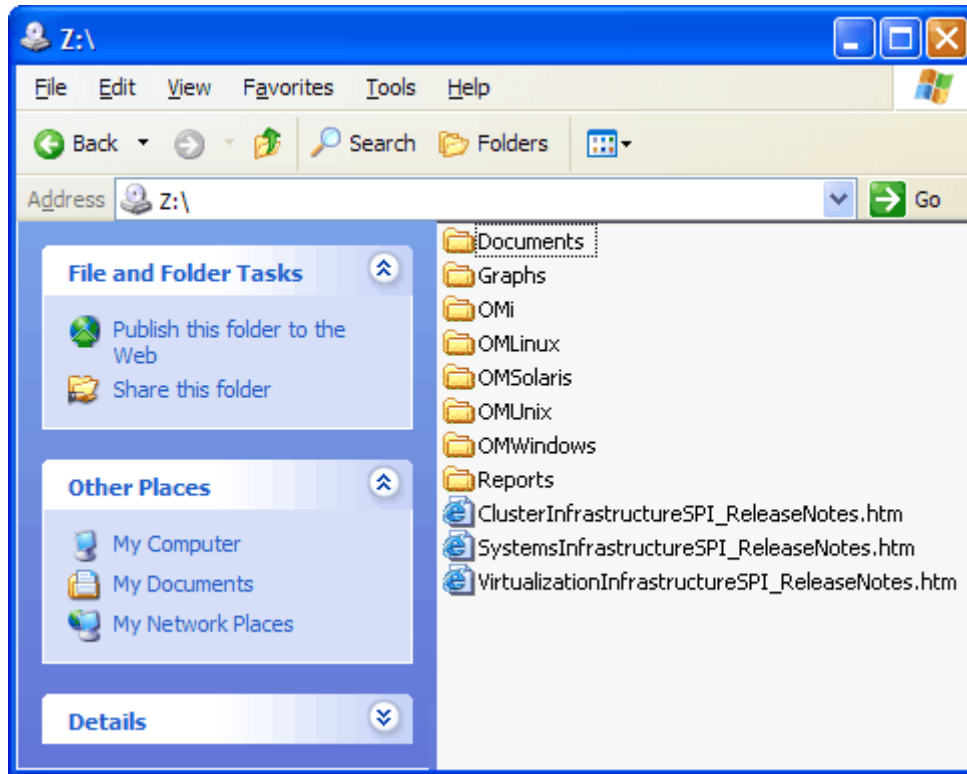
Or

Download the Infrastructure SPIs media image file (.iso) from the following HP Software Partner Portal (account and password required):

https://h10078.www1.hp.com/cda/hpdc/display/main/search_results.jsp?zn=bto&cp=54_4012_100_

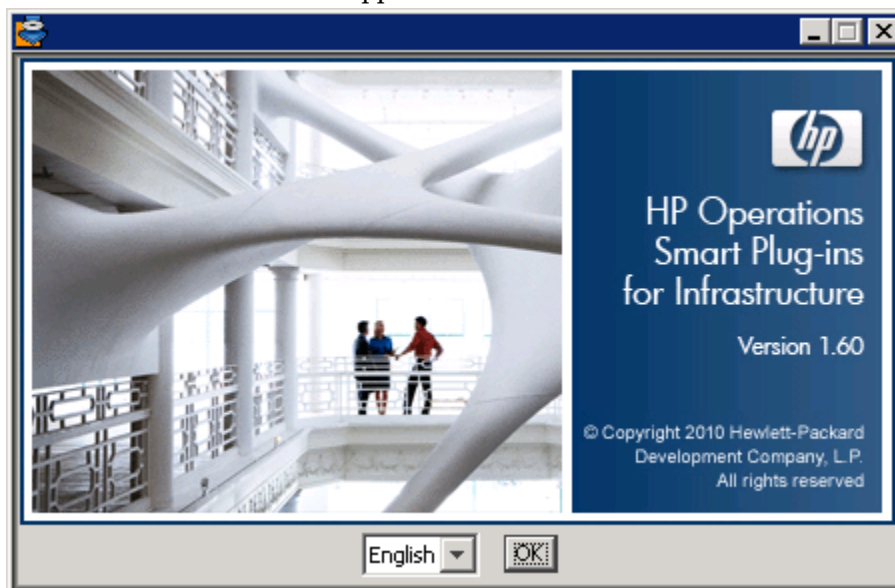
Burn the image on a physical media or mount the image file as a virtual CD using software such as Microsoft Virtual CD-ROM from the control panel.

The Infrastructure SPIs media content consists of the following:



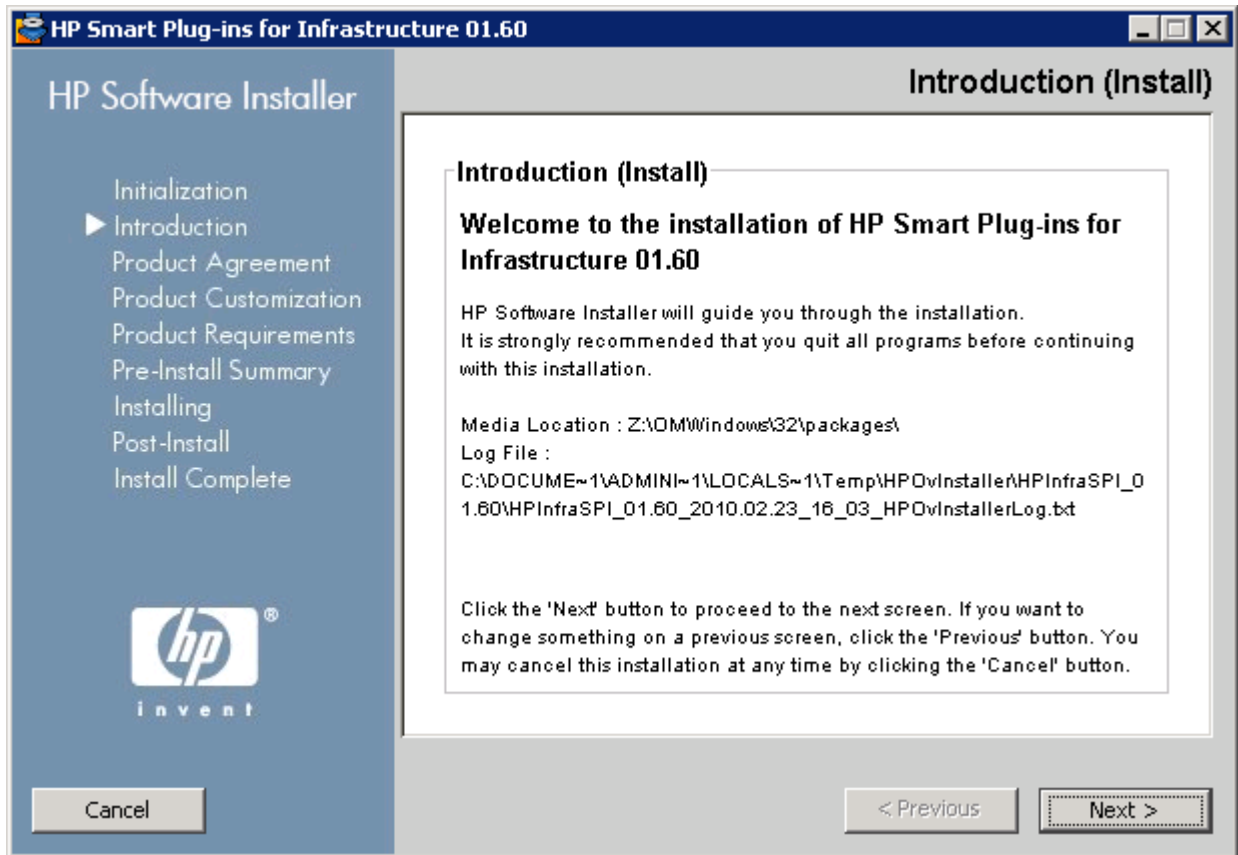
- 3 Once the media is available, navigate to the OMWindows directory, and click **HPInfraSPI_setup.exe** to start the installer.

The installation wizard appears.

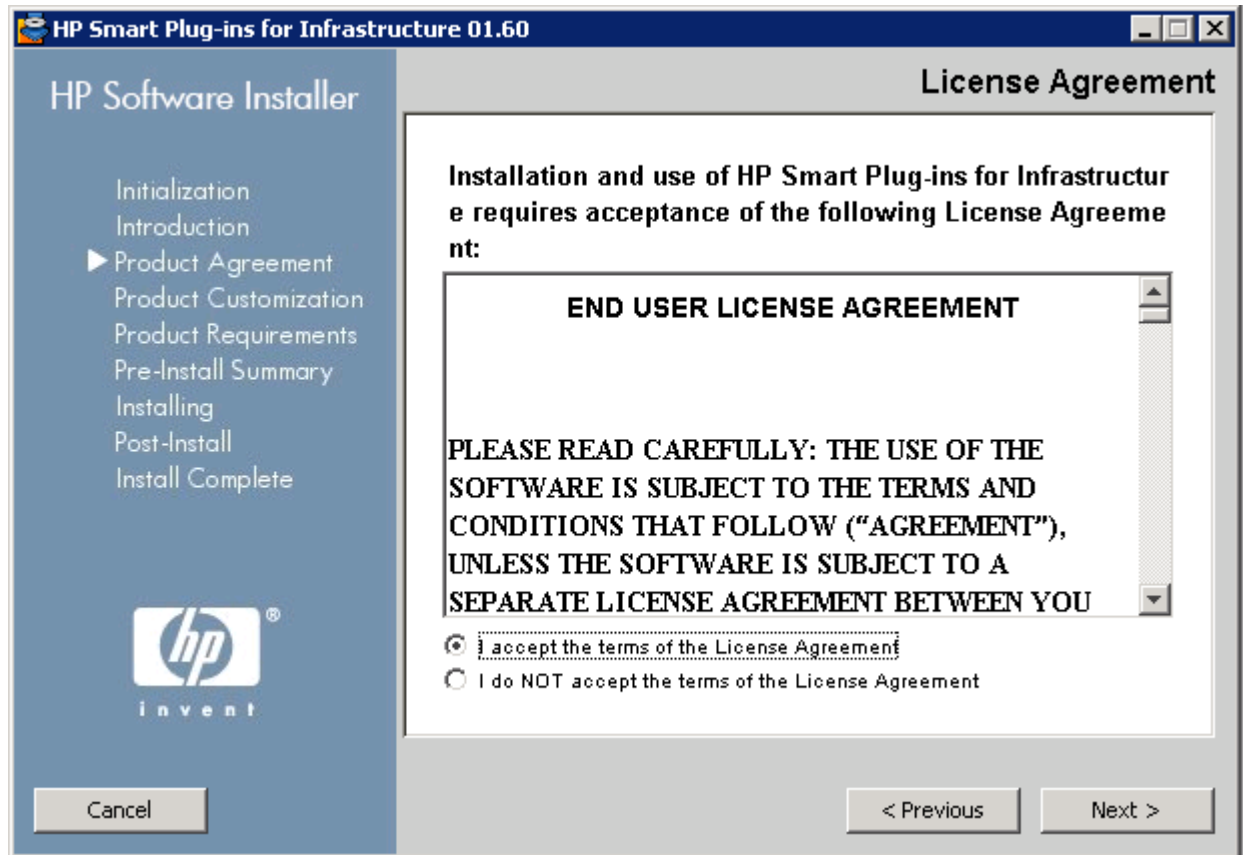


- 4 Select the language, and click **OK**. If you see the Application requirement check warnings box, click **Continue**.

The Introduction (Install) page of the installation wizard opens.

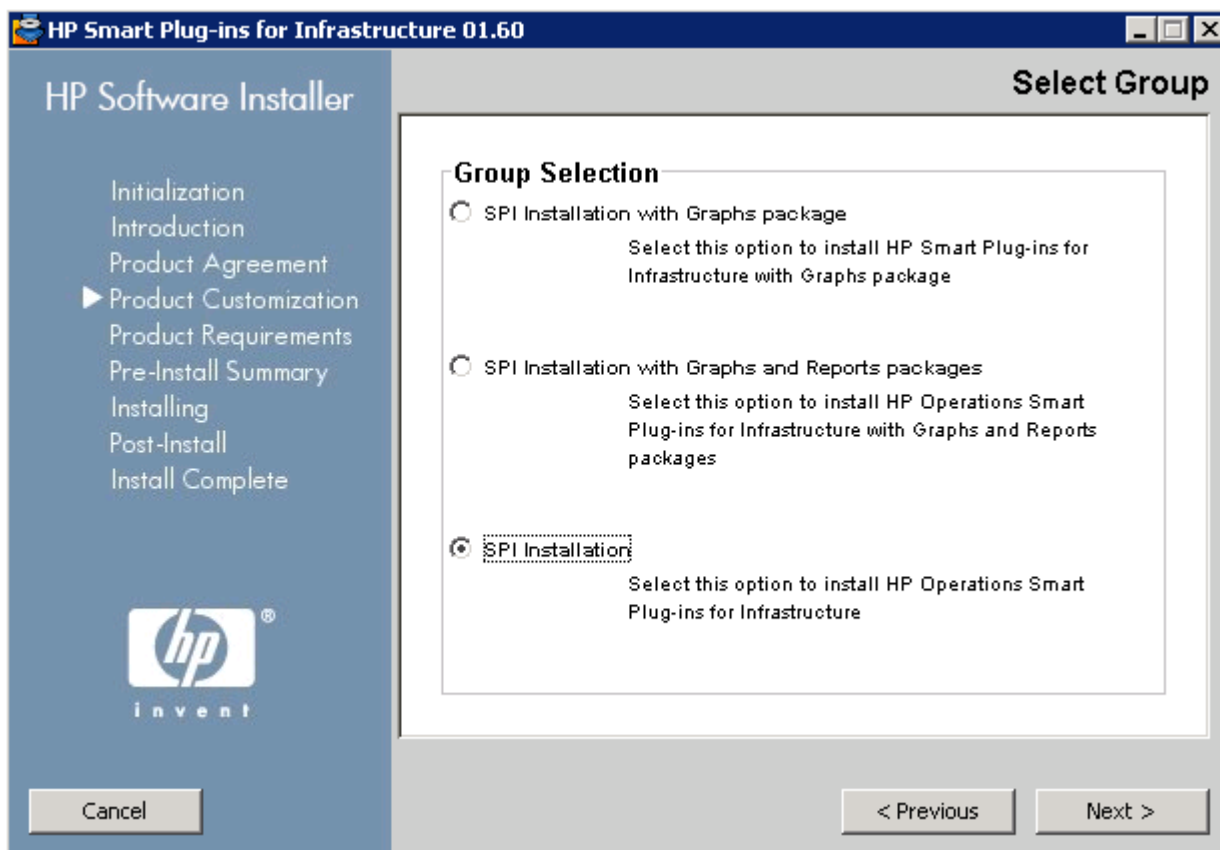


- 5 On the Introduction (Install) page of the installation wizard, click **Next**.
The License Agreement page appears.



- 6 Read the terms of license agreement, select the 'I accept the terms of License Agreement' option and click **Next**.

The Select Group page opens displaying the list of installation options.

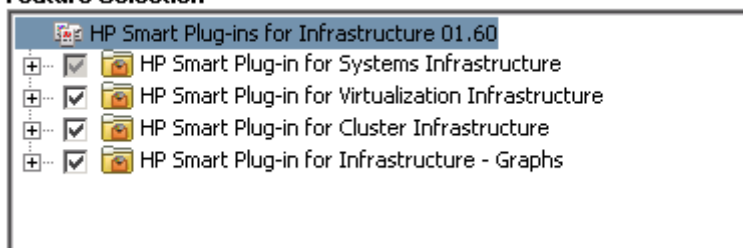


7 Select one of the following options:

— **SPI Installation with Graphs package**

Select this option to install the Infrastructure SPIs along with the Graphs package. The Graphs package requires HP Performance Manager to be already installed on the HPOM server.

Feature Selection

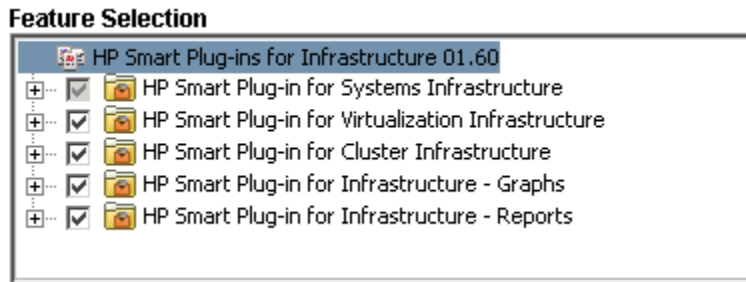


HP Smart Plug-in for Systems Infrastructure is pre-selected because its installation is mandatory. Select the features that you want to install from the remaining options.

— **SPI Installation with Graphs and Reports packages**

Select this option to install the Infrastructure SPIs along with the Graphs and Reports package. The Graphs and the Reports packages require HP Performance Manager and HP Reporter to be already installed on the HPOM server.

If HP reporter is installed on a separate system connected to HPOM for Windows, follow the instructions in [Installing the Reports Package when HP Reporter is Installed on a Separate System](#)



HP Smart Plug-in for Systems Infrastructure is selected by default because its installation is mandatory. Select the features that you want to install from the remaining options.

— SPI Installation

Select this option to install the Infrastructure SPIs. Selecting this option automatically includes all three Infrastructure SPIs for installation.

- 8 Click **Next**.

The installer starts performing installation checks.

- 9 Follow the on-screen instructions and continue the installation process using the **Next** and **Install** buttons.

The installation wizard displays the Installer Completed dialog box after you complete the installation.

- 10 Click **Done** to complete the installation.

Unattended Installation

The unattended installation enables the HP Software Installer to run without any user interaction.

Follow these steps:

- 1 Open the Windows command prompt and type the name of the drive where the Infrastructure SPIs `HPInfraSPI_setup.exe` file is located, as follows:

```
<CD/DVD-ROM or temp>:
```

The drive can be on the local system where the Infrastructure SPIs package is downloaded, or the CD/DVD-ROM drive containing the Infrastructure SPIs files.

- 2 Run the following command to change your current directory location:

```
cd OMWindows
```

- 3 Enter either one of the following commands at the command prompt, according to your requirement:

- For SPI Installation with Graphs package, enter the syntax:

```
HPInfraSPI_setup.exe -DGROUP=WithGraphs -i silent
```

Select this option to install Infrastructure SPIs along with the Graphs package. The Graphs package requires HP Performance Manager to be already installed on the HPOM server.

- For SPI Installation with Graphs and Reports packages, enter the following command:

```
HPInfraSPI_setup.exe -DGROUP=WithGraphsAndReports -i silent
```

The Graphs and the Reports package requires HP Performance Manager and HP Reporter to be already installed on the HPOM server.

If HP Reporter is installed on a separate system connected to HPOM, follow the instructions in [Installing the Reports Package when HP Reporter is Installed on a Separate System](#) on page 29.

- For SPI Installation, enter the following command:

```
HPInfraSPI_setup.exe -i silent
```

Select this option to install HP Smart Plug-ins for Infrastructure.

The installation process happens in the background.

You can open **Windows Task Manager** → **Processes**, and check for the HPInfraSPI_setup.exe listed. You can also check the log files available for the SPIs installed at `<install dir>\install\<relevant SPI folder>\log` to verify if the installation is complete. By default the `<install dir>` is `C:\Program Files\HP\HP BTO Software`.

Installing on the HPOM for UNIX Management Server

You can install the Infrastructure SPIs on your HP-UX, Linux or Solaris Management Server by using any of the following procedures.

Attended Installation

Attended installation requires the installation of Infrastructure SPIs using graphical and command line interfaces.

Installing Infrastructure SPIs through Graphical Interface

To install Infrastructure SPIs through the GUI, you might need to use a X Window System Client that is required to view the GUI. For example, you can use Reflection X.

Follow these steps:

- 1 Log on as a root user.
- 2 When installing from a CD/DVD-ROM, insert the Infrastructure SPIs CD/DVD media into the CD/DVD-ROM drive. If necessary, mount the CD/DVD-ROM.

Or

Download the Infrastructure SPIs media image file (.iso) from the HP Software Partner Portal (account and password required):

```
https://h10078.www1.hp.com/cda/hpdc/display/main/  
search_results.jsp?zn=bto&cp=54_4012_100__
```

Burn the image on a physical media or mount the ISO image on a temp directory:

- 3 In the terminal window verify that the DISPLAY environment variable is set correctly to your workstation by entering:

```
echo $DISPLAY
```

To view the console GUI properly;

```
export DISPLAY=<IP Address or host name of the local system from where you  
are installing Infrastructure SPIs>:0.0
```

- 4 Run the following command to change your current directory location, according to the operating system of the management server where you are installing the Infrastructure SPIs.

```
cd <OMSolaris/ OMLinux/ OMUnix>
```

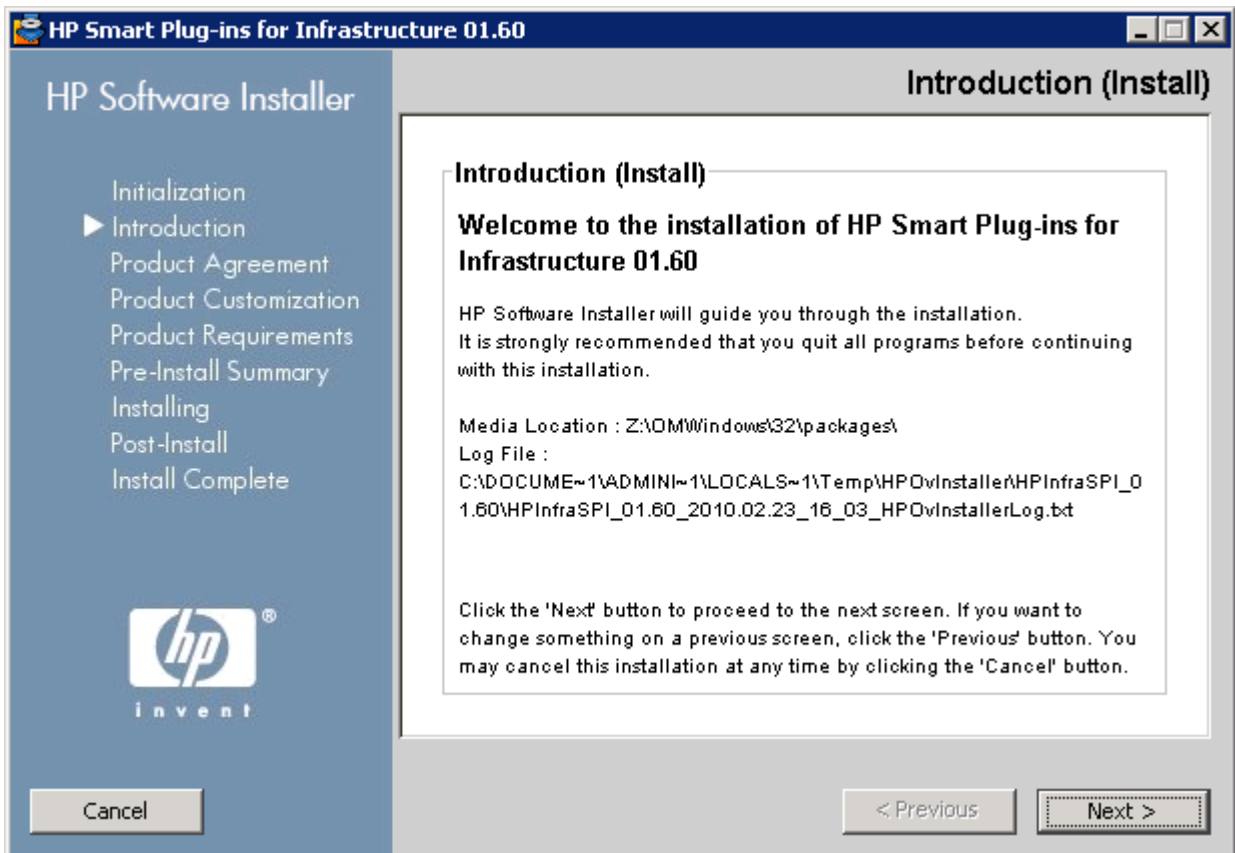
- 5 Start a X Window System Client (X11 client) on the system if required.

- 6 Run the following:

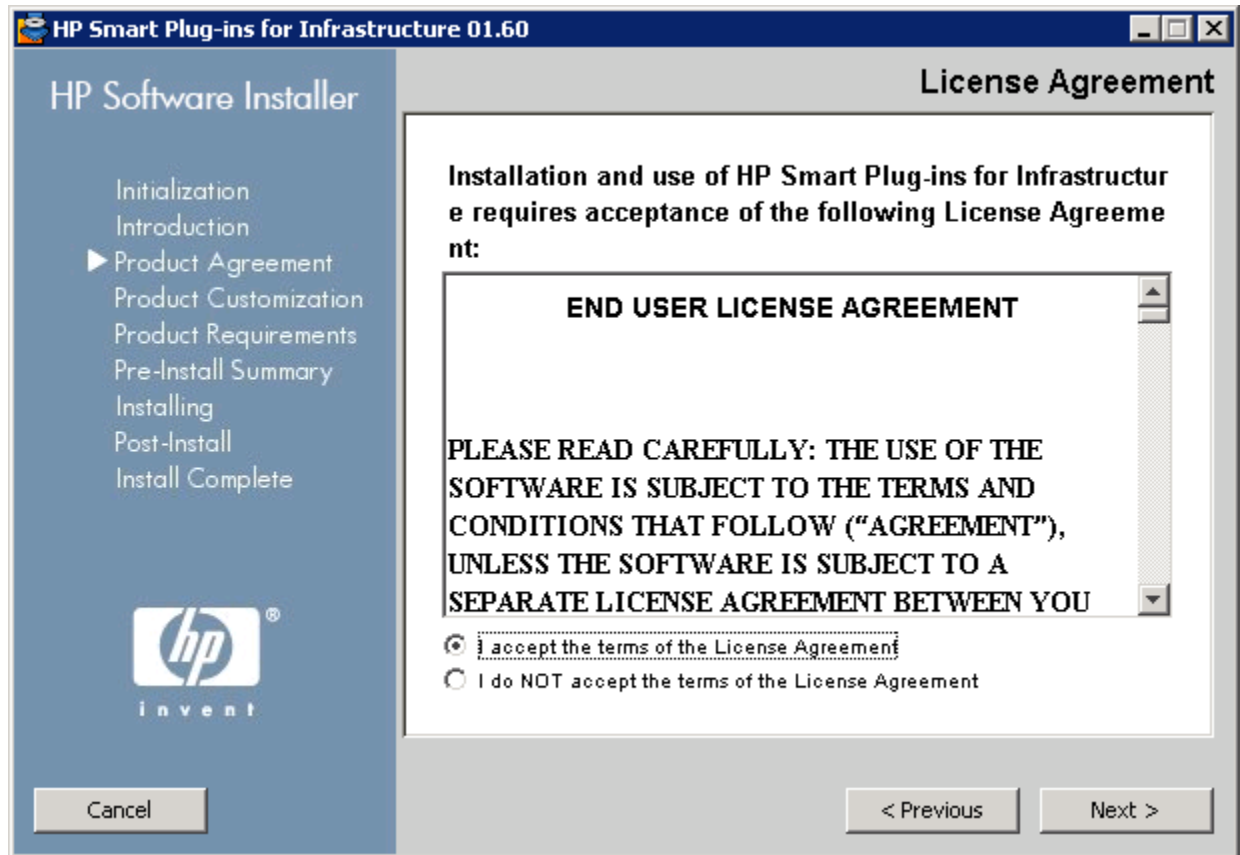
```
./HPInfraSPI_setup.bin
```

The installation wizard appears.

- 7 If you see the Application requirement check warnings box displayed, click **Continue**

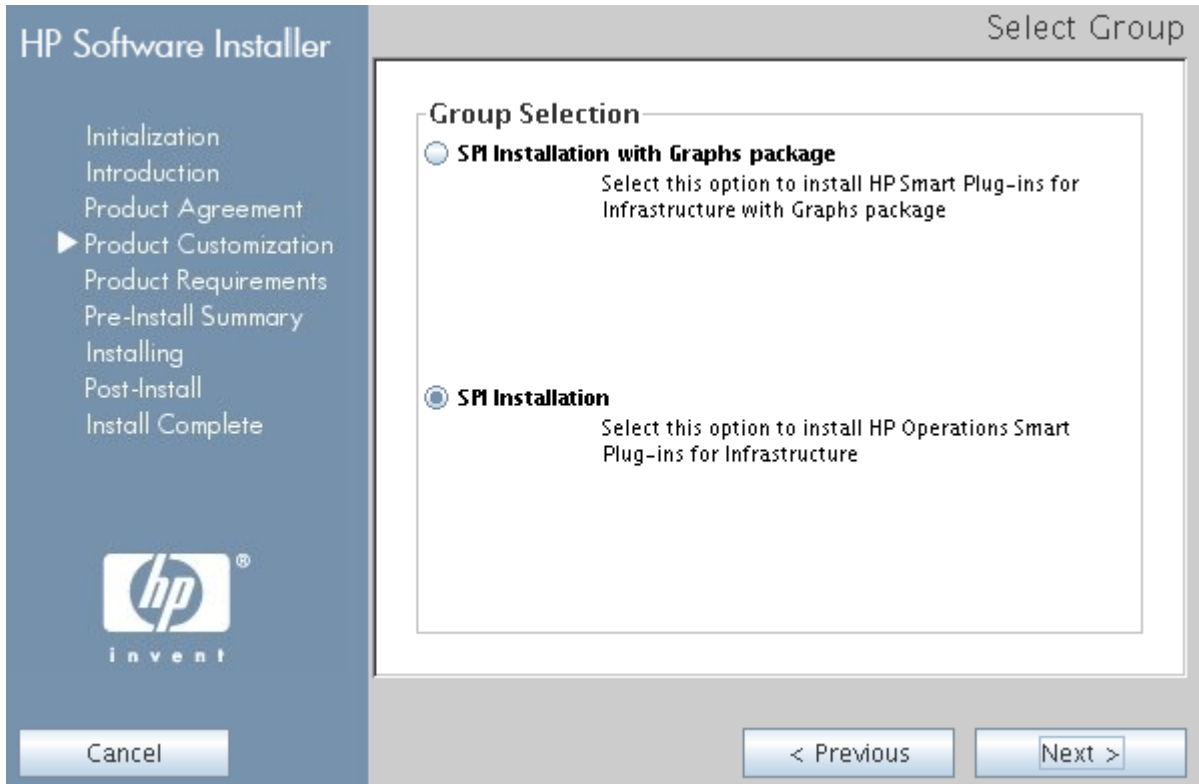


- 8 On the Introduction (Install) page of the installation wizard, click **Next**. The License Agreement page appears.



- 9 Read the terms of license agreement, select the 'I accept the terms of License Agreement' option and click **Next**.

The Select Group page opens displaying the list of installation options.

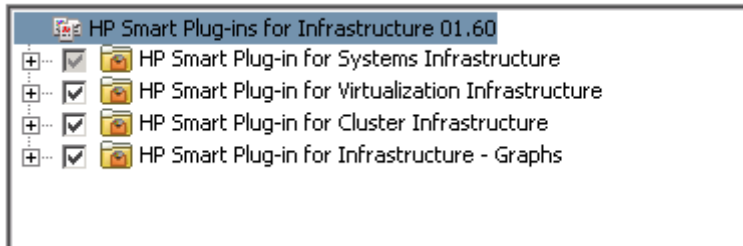


10 Select one of the following options:

— **SPI Installation with Graphs package**

Select this option to install the Infrastructure SPIs along with the Graphs package. The Graphs package requires HP Performance Manager to be already installed on the HPOM server.

Feature Selection



HP Smart Plug-in for Systems Infrastructure is selected by default because its installation is mandatory. Select the features that you want to install from the remaining options available on the Feature Selection page.

— **SPI Installation**

Select this option to install the Infrastructure SPIs. Selecting this option automatically includes all three Infrastructure SPIs for installation.



Installing the Infrastructure SPIs reports package: With HPOM for UNIX, HP Reporter is installed on a separate system (connected to HPOM) and therefore the Infrastructure SPIs reports package is a separate installer. To install the package and view reports for your infrastructure follow the instructions in [Installing the Reports Package when HP Reporter is Installed on a Separate System on page 29](#).

11 Click **Next**.

The installer starts performing installation checks.

12 Follow the on-screen instructions and continue with the installation process using the **Next** and **Install** buttons.

The installation wizard displays the Installer Completed dialog box after you complete the installation.

Click **Done** to complete the installation.

Installing the Infrastructure SPIs through the Command Line Interface

Follow these steps:

1 Log on as a root user.

2 Insert the Infrastructure SPIs CD/DVD-ROM media into the CD/DVD drive. If necessary, mount the CD/DVD-ROM.

3 Run the following command to change your current directory location, according to the operating system of the management server where you are installing the Infrastructure SPIs.

```
cd <OMSolaris/ OMLinux/ OMUnix>
```

4 Run the following command:

```
./HPInfraSPI_setup.bin -i console
```

5 When the prompt, 'I accept the terms of the License Agreement' appears, type **Y** to accept the terms and continue installation.

The installer checks all the Installation Requirements.

6 Click **Enter** to continue. A list of components that can be installed appears.

7 Click **Enter** to continue.

When the installation is complete, you will receive a message stating that the installation is completed successfully.

Unattended Installation

Installation carried out in unattended mode installs all three Infrastructures SPIs and graphs packages on the management server.

Follow these steps:

1 Log on as a root user.

2 Insert the Infrastructure SPIs CD/DVD-ROM media into the CD/DVD drive. If necessary, mount the CD/DVD-ROM.

- 3 Run the following command to change your current directory location, according to the operating system of the management server where you are installing the Infrastructure SPIs.

```
cd <OMSolaris/ OMLinux/ OMUnix>
```

- 4 Enter either of the following syntax at the command prompt, according to your requirements:

- For SPI Installation with Graphs package, enter the syntax:

```
HPInfraSPI_setup.bin -DGROUP=WithGraphs -i silent
```

The Graphs package requires HP Performance Manager to be already installed on the HPOM server.

- For SPI Installation, enter the syntax:

```
HPInfraSPI_setup.bin -i silent.
```



Installing the Infrastructure SPIs reports package: With of HPOM for UNIX, HP Reporter is installed on a separate system (connected to HPOM) and therefore the Infrastructure SPIs reports package is a separate installer. To install the package and view reports for your infrastructure follow the instructions in [Installing the Reports Package when HP Reporter is Installed on a Separate System on page 29](#).

The installation process takes place in the background.

The `ovinstallparams_YYYY.MM.DD_hh_mm.ini` file is created in the system temporary directory after you run the installer. The system temporary directory for HP-UX, Linux and Solaris operating systems is `/tmp`.

Once this file is generated, you can use it as an input configuration for silent installation. You can define groups such as *server* and *client* groups to contain features specifically for server side application and client side application. Groups are mutually exclusive, and you can install only one group at a time. The installer displays a group select panel to allow you to select features for a specific group.

Installing the Infrastructure SPIs in a Cluster Environment

In a clustered installation of HPOM it is necessary to keep the installation consistent on all nodes, regardless of the physical cluster nodes it is currently running on. A consistent installation means that all nodes have the same SPIs and HPOM patches installed. A clustered installation also requires a consistent configuration of HPOM on all cluster nodes.

Before installing the Infrastructure SPIs in a cluster environment, make sure that the first node you select to install the Infrastructure SPIs on, is an active cluster node; otherwise the installation on the first node will fail. Subsequently, install the same package on each cluster node. Alternatively, you can save the selection configuration file (ini file created by the installer) on the first node, and use it to install the same set of packages on other cluster nodes.



The HPOM console does not function properly until you install the Infrastructure SPIs on all nodes in the HPOM cluster.

Installing the Reports Package when HP Reporter is Installed on a Separate System



With of HPOM for UNIX, the HP Reporter is always installed on a stand-alone Windows server (connected to the HPOM management server) as HP Reporter can be installed only on Windows system.

HP Reporter can be installed on the management server or on a stand-alone Windows server (connected to the HPOM management server).

To install the Infrastructure SPIs reports package when the HP Reporter is installed on a system (stand-alone) other than HPOM management server, run the Infrastructure SPI Reporter msi file on the stand-alone HP Reporter system. You can find the msi file on the Infrastructure SPIs media under the folder **Reports**.

After successful installation of the Infrastructure SPIs reports package you can access the reports of your infrastructure from the stand alone system.

Installing the Graphs Package when HP Performance Manager is Installed on a Separate System

If HP Performance Manager and HPOM are installed on the same system, no separate installation is necessary for the Infrastructure SPIs graphs package. It gets installed along with the Infrastructure SPIs if you select the option on the Select Features page of the installer.

If HP Performance Manager is installed on a system where HPOM is not installed (stand-alone system), you need to integrate the HP Performance Manager and HPOM systems. For information on how to integrate HP Performance Manager with HPOM for UNIX operating systems, see [Integrating HP Performance Manager with HPOM for UNIX](#), on page 60.

Installation Results

Following are the results after successful installation of Infrastructure SPIs as per the HPOM server operating system.

Installation Result on HPOM for Windows Management Server

When the Infrastructure SPIs are successfully installed on the HPOM for Windows systems, the **\Program Files\HP\HP BTO Software\InfraSPI** folder gets added to the installation directory. The related log files are available in the **<%temp%>\HPOvInstaller\HPInfraSPI_<version>** directory. The format of the file name of the log file is **HPInfraSPI_<version>_yyyy.MM.dd_xx_yy_HPOvInstallerLog.txt**. In this instance, **yyyy** indicates the year, **MM** indicates the month, and **dd** indicates the day. The **xx** and **yy** in the file name indicate the time stamp when the last install was performed. The installation logs for the installed SPIs are available at: **<%OvInstallDir%>\install\SPIInstallLogs**.

See [Product Documentation](#) on page 11, for a comprehensive list of documentation provided with the Infrastructure SPIs.

Installation Result on the HPOM for UNIX Management Server

When the Infrastructure SPIs are successfully installed on a UNIX management server, the related log files on HPOM on Linux are available in the `/tmp/HPOvInstaller/HPInfraSPI_<version>` directory and the log files on HPOM on HP-UX and Solaris are available in the `var/tmp/HPOvInstaller/HPInfraSPI_<version>` directory.

The format of the file name of log file is

`HPInfraSPI_<version>_yyyy.MM.dd_xx_yy_HPOvInstallerLog.txt`. In this instance, `yyyy` indicates the year, `MM` indicates the month, and `dd` indicates the day. The `xx` and `yy` in the file name indicate the time stamp when the last install was performed. The application directory is `/opt/OV/` and data directory is `/var/opt/OV/`.

See [Product Documentation](#) on page 11, for a comprehensive list of documentation provided with Infrastructure SPIs.

Removal of Autodeployment for Operating System SPIs

During installation of the Infrastructure SPIs, the installer checks for the presence of the Operating System SPI for Windows and UNIX. If the SPI is present, the Infrastructure SPI installation disables the autodeployment of the Operating System SPI policies.

This ensures that whenever a node is added into the HPOM for Windows node bank, Systems Infrastructure SPI discovery policy is autodeployed in place of Operating system SPIs.



The Systems Infrastructure SPI discovery policy is only autodeployed for HPOM for Windows.

Upgrading from Virtualized Infrastructure SPI version 1.00

If Virtualization Infrastructure SPI version 1.00 is installed, you must first uninstall it and then install Infrastructure SPIs version 1.60. Direct upgrade from VI SPI 1.00 to the current version of Infrastructure SPIs is not supported.

Upgrading from Infrastructure SPIs version 1.00

If you have Infrastructure SPIs version 1.00, you can directly upgrade to Infrastructure SPIs version 1.60. These two versions are described below.

Infrastructure SPIs Version 1.00

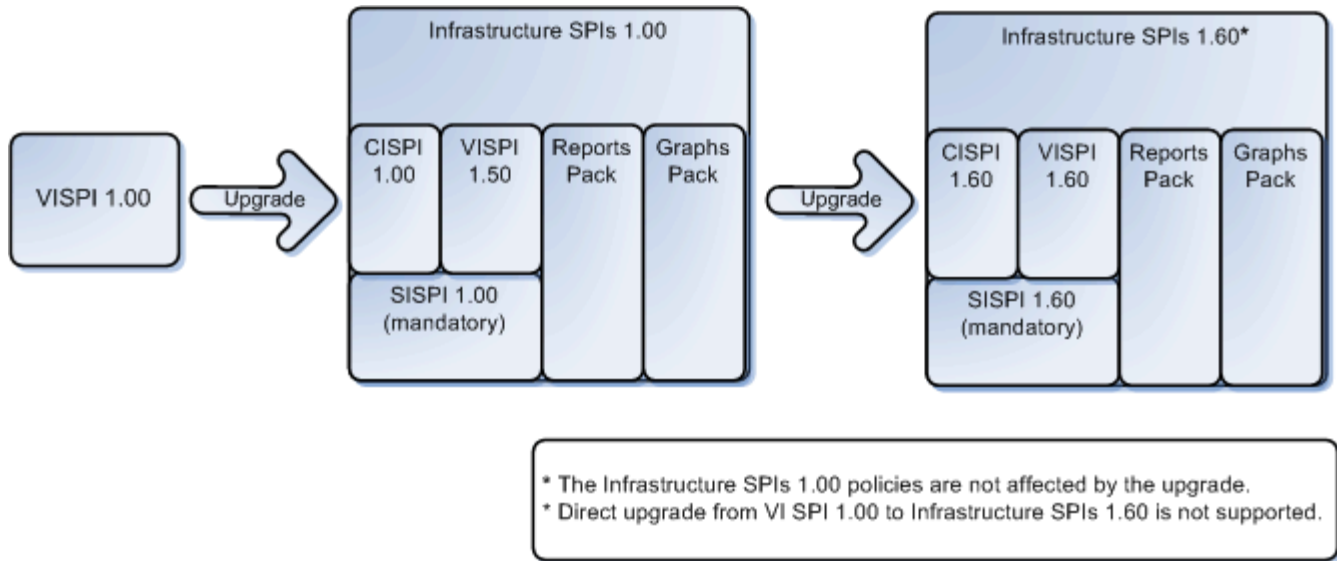
Infrastructure SPIs version 1.00 supports HPOM for Windows, HP-UX, and Linux operating systems. On managed nodes, the Infrastructure SPIs support Windows and Linux operating systems.

Infrastructure SPIs Version 1.60

Infrastructure SPIs version 1.60 supports HPOM for Windows, HP-UX, Linux, and Solaris operating systems. On managed nodes, the Infrastructure SPIs support Windows, Linux, AIX, HP-UX, and Solaris operating systems.

For details on the enhancements and updates included in Infrastructure SPIs version 1.60, see the individual SPI (that form Infrastructure SPIs) release notes.

Figure 1 Logical representation of the upgrade



Upgrading from Infrastructure SPIs version 1.00 to version 1.60 adds the latest versions of the SI SPI, CI SPI, and VI SPI and retains the earlier versions. The Reports Pack and Graphs Pack for Infrastructure SPIs are updated for version 1.60.

Upgrading Infrastructure SPIs on HPOM for Windows

To upgrade to Infrastructure SPIs version 1.60 on HPOM for Windows, run the Infrastructure SPIs version 1.60 installer. The Infrastructure SPIs installer identifies the presence of an existing version of the Infrastructure SPIs on the management server and upgrades it to the latest version. See [Installing on the HPOM for Windows Management Server](#) on page 17 and follow the on-screen instructions while using the GUI.

- ▶ After the upgrade, if you want to add a new node but do not want to deploy the latest version of the policies, disable the autodeployment option while adding the node.

Upgrade Results on HPOM for Windows

After upgrade, the related log files are available in the `<temp_directory>/HPOvInstaller` directories. The log files also contain appropriate messages. The format of the file name of the log file is `Util-MM-dd-yyyy.log.0`. In this instance, *MM* indicates the month, *dd* indicates the day, and *yyyy* indicates the year.

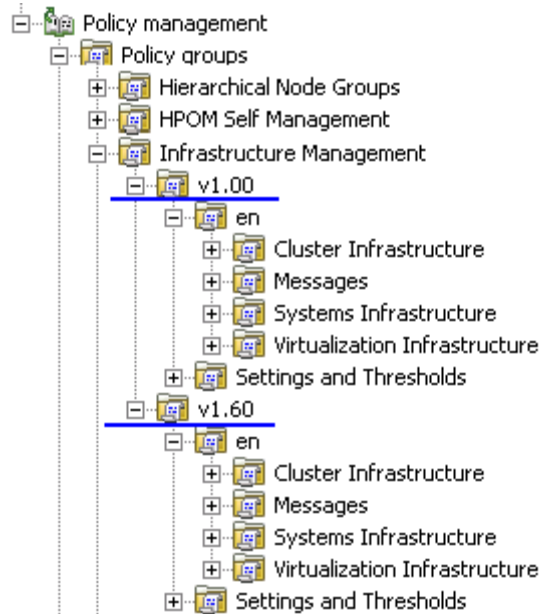
The upgrade action automatically updates the Infrastructure SPIs configurations for policies, tools, and service models on the management servers.

The current release of the Infrastructure SPIs contains the following changes or additions to the policies and policy groups:

- Policy Group

The current release contains new policy groupings according to the monitored aspects and the platforms on which the policies are supported.

After the upgrade, the group name SPI for Infrastructure changes automatically to Infrastructure Management. All the previous assignments made under SPI for Infrastructure appear under a new policy group **v1.00**. The upgrade also creates a **v1.60** folder that contains the policies for the current version as shown in the image below.



- Policy Version Number

Infrastructure SPIs policies version 1.60 updates to version number 160.0000 for all policies.

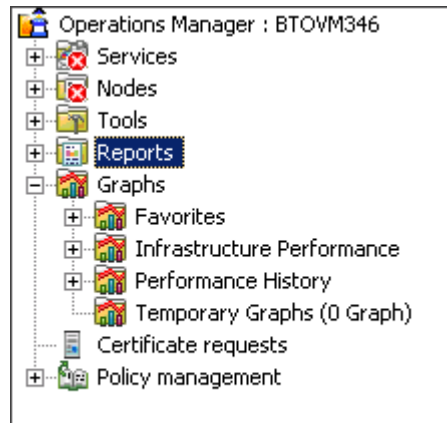
- Policies

The Infrastructure SPIs version 1.60 release contains new as well as updated policies. For a list of policies that are provided in the Infrastructure SPIs version 1.60, see the [New and Changed Policies](#) on page 72. For description and details about the policies provided in Infrastructure SPIs version 1.60, see the User Guides for the SPIs.

- Graphs

In Infrastructure SPIs version 1.00, the graph components were grouped under the folder SPI for Infrastructure. After the upgrade, the old graph components are replaced with the new components under a new folder called Infrastructure Performance, as shown in the following.

s



- Reports

After the upgrade, the existing report files are replaced with the new report files. Run the following command to update the reports.

 - a Go to the **Start** menu.
 - b Select **Run**.
 - c At the prompt, type the command **repcrys** and click **Ok**.
- Tools

After the upgrade, the existing tools are replaced with the new tools. In the localized environment, the English version of the tool existing in Infrastructure SPI v1.0 is replaced with the localized tool in infrastructure SPI v1.60.

Policy Deployment After Upgrade

Deployment of policies from two Infrastructure SPI versions to the same node is not supported. Do not deploy a combination of SPI policies on the same node, for example; Systems Infrastructure SPI 1.00 policy along with Virtualization Infrastructure SPI 1.60 policy.

If a node has policies of an older version already deployed to a node, and you want to monitor the node using the latest version policies, first clean up the old versions and then deploy the latest SI-SystemDiscovery policy to the node. This ensures that the correct instrumentation category is deployed to the managed nodes.

In HPOM for Windows, if a node is being managed by Infrastructure SPI v1.0 policies, auto-deployment must be turned off to prevent the auto-deployment of Infrastructure SPI 1.60 policies to this node.

To manually deploy instrumentation files on the managed node, select the files for one version only.

Upgrading the Infrastructure SPIs on HPOM on Linux and HP-UX

To upgrade to Infrastructure SPIs version 1.60 on HPOM on Linux and HP-UX, run the installer for Infrastructure SPIs version 1.60. The Infrastructure SPIs installer identifies the presence of an existing version of Infrastructure SPIs on the management server and upgrades it to the latest version. For installation steps, see [Installing on the HPOM for UNIX Management Server](#) on page 23.

After upgrade, when you add nodes, they automatically get added to the new node groups created by Infrastructure SPIs version 1.60, and the latest policies get automatically assigned to these nodes. The existing nodes will still have the previous version policies assigned to them. On nodes where you want to deploy the latest policies, manually run the SI-SystemDiscovery so that they get added into the new node groups.

Upgrade Results on HPOM on Linux and HP-UX

After upgrade, the related log files are available in the `<temp_directory>/HPOvInstaller` directories. The log files also contain appropriate messages. The format of the file name of log file is `Util-MM-dd-yyyy.log.0`. In this instance, *MM* indicates the month, *dd* indicates the day, and *yyyy* indicates the year.

The upgrade action automatically updates the Infrastructure SPIs configurations for policies, tools, and service models, on the management servers.

The current release of the Infrastructure SPIs contains the following changes or additions to policies and policy groups:

- Policy Group

The current release contains new policy groupings according to the monitored aspects and the platforms on which the policies are supported.

After the upgrade, the group name SPI for Infrastructure changes automatically to Infrastructure Management. All the previous assignments made under SPI for Infrastructure appear under **v1.00**. The upgrade also creates a **v1.60** folder that contains the policies for the current version as shown in the image below.



Both versions of the policy co-exist after the upgrade.

- Policy Version Number

Infrastructure SPIs policies version 1.60 updates to version number 160.0000 for all policies.

- Policies

The Infrastructure SPIs version 1.60 release contains new as well as updated policies. For a list of policies that are provided in the Infrastructure SPIs version 1.60, see [New and Changed Policies](#) on page 72. For details about the policies provided in Infrastructure SPIs version 1.60, see the User Guides for the SPIs.

- Node Groups

The new node groups with short node group names are used with the Infrastructure SPIs version 1.60. The older node group names are no longer used.

The upgrade process does not remove the older node groups that were created by Infrastructure SPI version 1.00. To deploy the latest policies to the existing node, follow these steps:

- Deploy version 1.60 InfraSPI-Messages, SI-SystemDiscovery, OPC_OPCMON_OVERRIDE_THRESHOLD and OPC_PERL_INCLUDE_INSTR_DIR policies on the HPOM.
- Run the SI SPI discovery policy on the managed node. The SI SPI will add the existing node in the new node group and send a message to the HPOM console reporting the same.
- Manually assign the required policies to these nodes, as the assignments made to the old node groups will not get carried forward to the newer node groups.

A **Cleanup 1.0 Node Groups** tool, is provided on the HPOM Java GUI to remove the Infrastructure SPIs 1.00 node groups from HPOM for UNIX (Linux and HP-UX).

You can run the tool using either of the following:

— **Start Option**

Using the Start option, you can get instructions on how to remove the node groups. The default parameter is set to **-n**. Set the parameter to **-y** and run the tool to read the instructions.

— **Start Customized Option**

Using the Start Customized option, you can remove the Infrastructure SPIs 1.0 node groups. The default parameter is set to **-n**. Set the parameter to **-y** and run the tool to remove the Infrastructure SPI 1.0 node groups.

- **Message Groups**

The upgrade adds new message groups **OS** and **HA** for Infrastructure SPIs version 1.60 messages, while retaining the earlier message groups **System** and **Clusters**. When new message groups are created, the older message groups already existing in the system are not deleted as in the current version.

- **Tools**

After the upgrade, the existing tools are replaced with the new tools.

Policy Deployment After Upgrade

- Deployment of policies from two Infrastructure SPI versions to the same node is not supported. Do not deploy a combination of SPI policies on the same node; for example, Systems Infrastructure SPI 1.00 policy along with Virtualization Infrastructure SPI 1.60 policy.

— If a node has policies of the older version already deployed to a node, and you want to monitor the node using the latest version policies, first clean up the old versions and then deploy the latest SI-SystemDiscovery policy to the node. This ensures that the correct instrumentation category is deployed to the managed nodes.

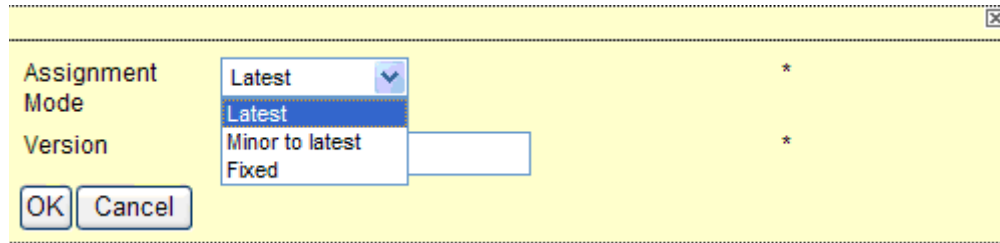
— To manually deploy instrumentation files on the managed node, select the files for one version only.

- After upgrading the Infrastructure SPIs, the policies have different versions displayed under **Assigned** and **Latest** as shown in the image below.



I

- ▶ It is recommended that you do not manually change these versions or change the **Mode** from **Fixed** to **Minor to latest** or to **Latest** using the drop-down menu as shown in the image below



Migrating from the Operating System SPIs to the Infrastructure SPIs

Installing the Infrastructure SPIs will result in some changes in Smart Plug-in for Microsoft Windows operating system and Smart Plug-in for UNIX operating system (The Operating System SPIs). The Infrastructure SPI installation disables the policy autodeployment for the Operating System SPIs. See [Removal of Autodeployment for Operating System SPIs](#) on page 30.

To migrate from the Operating System SPIs to the Infrastructure SPIs, perform the following tasks:

Task 1: Removing policies for the Operating System SPIs from Managed Nodes

The software suite for Infrastructure SPIs provides you a script to undeploy policies for the Operating System SPIs from all Windows (excludes windows 2000 server), HP-UX, Linux, AIX, and Solaris managed nodes that are configured on HPOM for Windows.

To run the script on the management server use the following commands:

```
cd %OvInstallDir%/install/INFRASPI/support/  
cscript Undeploy_OSSPIPolicies.vbs
```

The script removes policies for the Operating System SPIs from the managed nodes but does not remove them from the management server database inventory.

If the managed node is down or unreachable, the policy removal fails. For details see the log file at <OvInstallDir>/install/INFRASPI/log/.

- ▶ The script can be used to remove policies from managed nodes configured on HPOM for Windows. For managed nodes configured on HPOM for UNIX operating system, you can manually remove the policies.

Task 2: Deploying policies for the Infrastructure SPIs

Before deploying/ assigning policies to the managed nodes, you need to run Systems Infrastructure SPI discovery. For details, see [Getting Started](#) on page 53.

3 Validation

After you install the Infrastructure SPIs, you must add nodes that you want to monitor to the management console. The Infrastructure SPIs installation adds components to the HPOM console tree. The following section describes these components.

Components of the Infrastructure SPIs on HPOM for Windows

The following are the Infrastructure SPIs components on the HPOM for Windows console.

Services

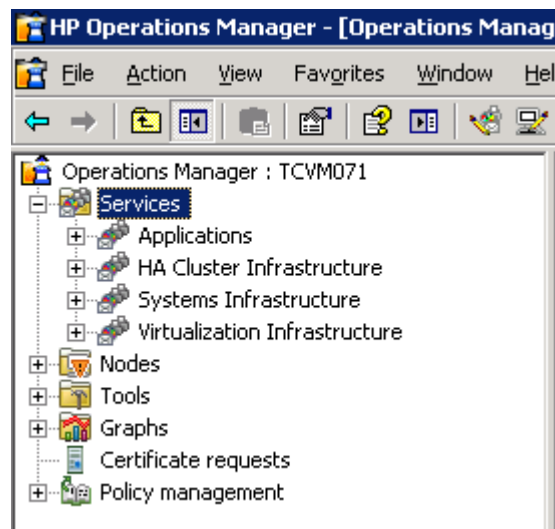
When you add a node to the HPOM for Windows node bank, the SI SPI service discovery policy is automatically deployed.

This service discovery policy discovers the systems infrastructure and services on the node, and adds this information to the HPOM Services area. Select **Services** → **Systems Infrastructure**, to view the SI SPI service map that graphically represents the discovered systems and instances.



The discovery policy is autodeployed on the new nodes added to the HPOM for Windows server post installation of the Infrastructure SPIs. On the existing nodes, you must manually deploy the SI SPI discovery policy.

The root element for the installed Infrastructure SPIs appears under Services in the HPOM console as displayed in the image below.



With HPOM for Windows, at the time of discovery if the SI SPI discovery policy identifies the managed node as a virtualization server, it initiates the VI SPI discovery on the node. If the SI SPI discovery policy identifies the node as a cluster node, it initiates CI SPI discovery policy on the node.

Discovery of Virtual Infrastructure

On HPOM for Windows, when you add VMware vMA as a managed node, the SI SPI automatically adds the ESX/ ESXi servers and vCenter servers that are registered on the vMA node, in the node bank.

The VI SPI discovery policy automatically adds the guest virtual machines hosted on the ESX, ESXi, and vCenter servers to the node bank if the XPL configuration setting on the HPOM management server `infraspi.AutoAdd_Guests` is set to `true`. By default it is set to `false` to prevent a large number of virtual machines getting added in batch causing poor performance at the time of discovery. You can set the value to true and re-run the VI SPI discovery to enable the auto-addition feature for virtual machines. You can also select a convenient time for running the auto-action.



Guest virtual machines hosted on Hyper-V server do not get automatically added in the node bank during or post discovery. This happens due to unavailability of the IP address of the guest virtual machines in WMI (Microsoft Hyper-V limitation). You can add the guests manually as SNMP/ Message-Allowed/ Managed nodes.

The discovery policy adds the discovered elements to the HPOM service map. Select **Services** → **Virtualization Infrastructure**, to view the VI SPI service map that graphically represents the discovered virtual systems.

For more information about VMware vMA, go to the following web site:

<http://www.vmware.com/support/developer/vima/>

For more information about Microsoft Hyper-V, go to the following web site:

<http://www.microsoft.com/virtualization/products/server/default.mspx>

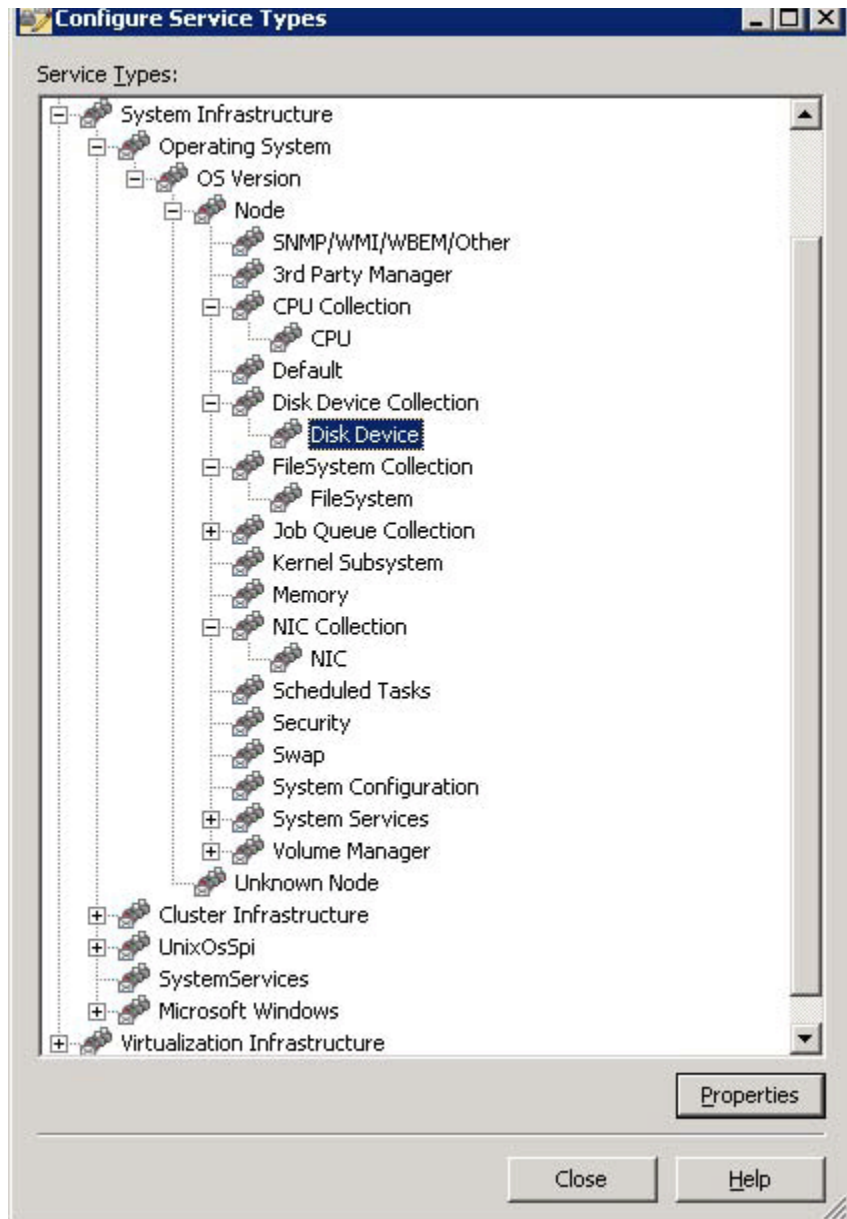
Discovery of Cluster Infrastructure

With HPOM for Windows, if the SI SPI discovery policy identifies the node as a cluster node, it initiates CISPI discovery policy on the node. The CI SPI discovery discovers the clusters, cluster nodes, and resource groups. Select **Services** → **Cluster Infrastructure**, to view the Cluster Infrastructure SPI service map.

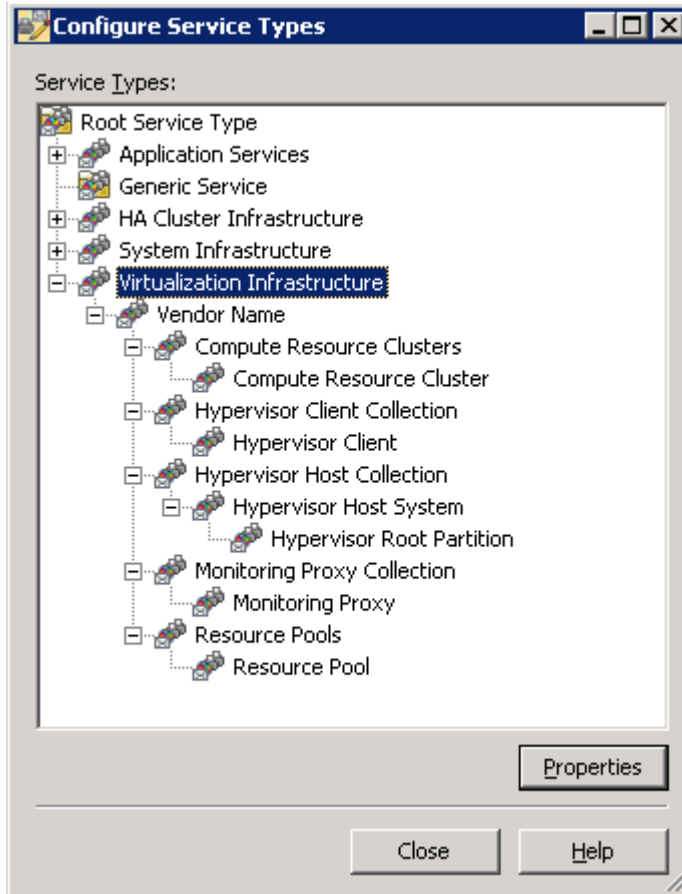
Service Type Models

The service type models display the service type categories that the nodes from node bank are logically assigned to. You can view the service type model in HPOM for Windows.

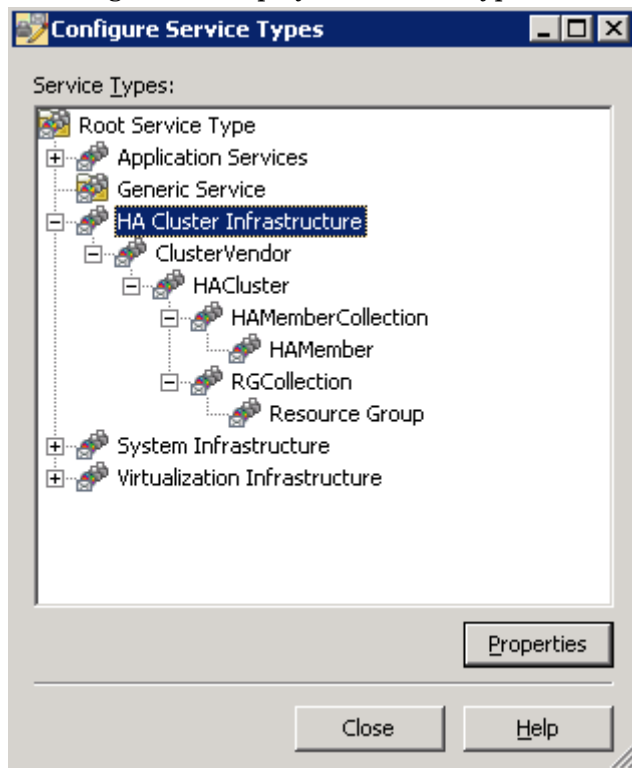
The image below displays the service type model for SI SPI.



The image below displays the service type model for VI SPI

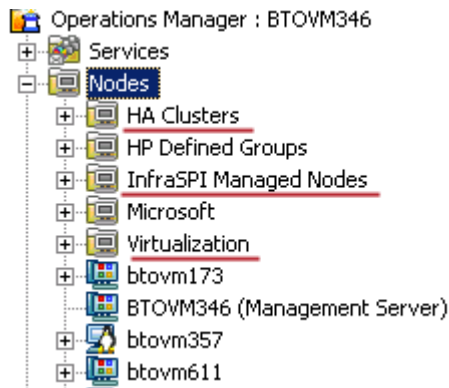


The image below displays the service type model for CI SPI



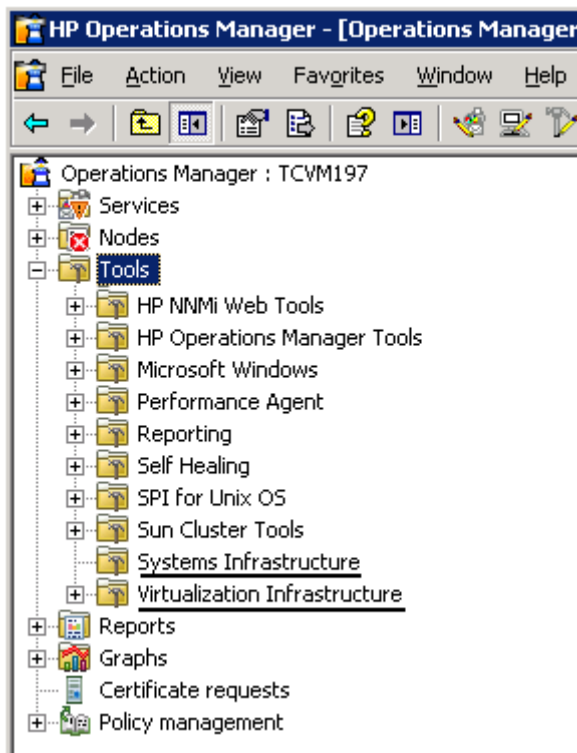
Nodes

Installation on Infrastructure SPIs add two folders under the console tree **Nodes** folder.



Tools

Tools are provided for the SI SPI and VI SPI. You can access the Systems Infrastructure SPI tool group by selecting **Tools** → **Systems Infrastructure**, and the Virtualization Infrastructure SPI tools group by selecting **Tools** → **Virtualization Infrastructure**, as displayed in the image below.



Policy management

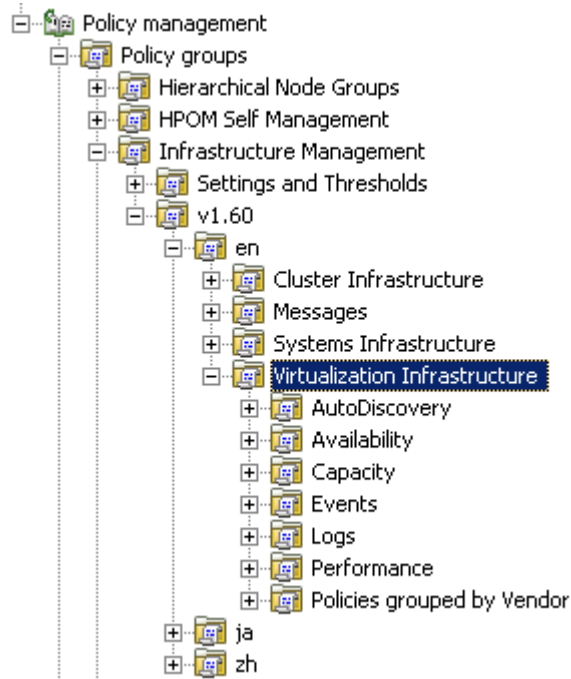
The Infrastructure SPI policies enable you to monitor the availability, capacity, and performance of your IT infrastructure. From Infrastructure SPIs version 1.60 onwards, with installation of the Infrastructure SPIs, the policy grouping appears under the current version number on the HPOM console. For example, it appears as v1.60 for the Infrastructure SPIs version 1.60.

Under the version grouping, the policies are grouped according to language. For example, English policies are grouped under **en**, Japanese policies are grouped under **ja**, and Simplified Chinese policies are grouped under **zh**. The language groups appear according to the language selected at installation time.

Further grouping is based on the SI SPI, CI SPI, and VI SPI as selected at the time of installation. Under each SPI, the policies are grouped according to performance, availability, capacity, logs, and events.

There is also a new policy group based on the operating system and vendor. This new policy group helps you to quickly access the policies relevant to your operating system at one place. The policies grouped by vendor include QuickStart policies and Advanced policies. With HPOM for Windows, the QuickStart policies are automatically deployed on the supported managed nodes once they are added to the node bank. These can be used as-is to begin receiving system infrastructure related data and messages from the environment. You can choose to turn off automatic deployment of policies when services are discovered. In addition, you can modify and save preconfigured policies with new names to create custom policies for your own specialized purposes. For information on deploying QuickStart policies, see [Deploying Quick Start Policies on HPOM for Windows](#) on page 55.

Figure 2 Policy groups for Infrastructure SPIs.



To view and access the Systems Infrastructure SPI policies, select **Policy management** → **Policy groups** → **Infrastructure Management** → **v1.60** → **<language>** → **Systems Infrastructure**.

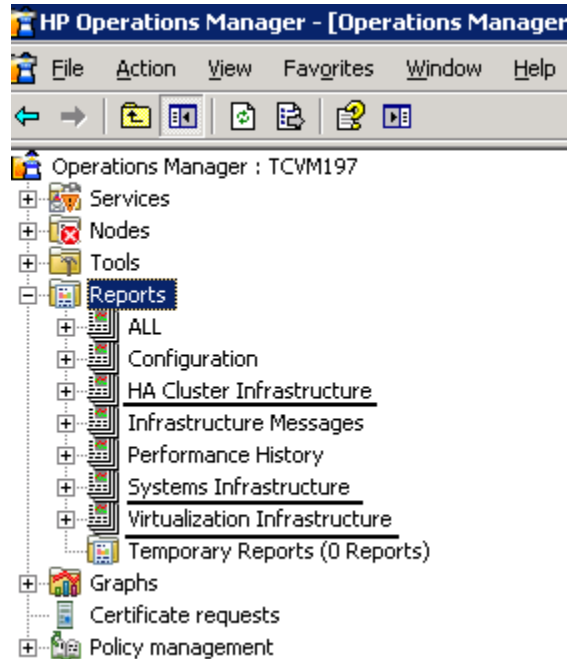
To view and access the Virtualization Infrastructure SPI policies, select **Policy management** → **Policy groups** → **Infrastructure Management** → **v1.60** → **<language>** → **Virtualization Infrastructure**.

To view and access the Cluster Infrastructure SPI policies, select **Policy management** → **Policy groups** → **Infrastructure Management** → **v1.60** → **<language>** → **Cluster Infrastructure**.

Reports

To view infrastructure SPIs specific reports you must install the reporting package from the Infrastructure SPIs media on the management server.

If HP Reporter is installed on the HPOM for Windows management server, you can view reports group from the console as shown in the figure below.



If HP Reporter is installed on a separate stand-alone system connected to the HPOM management server, you can view the reports on the HP reporter stand-alone system. To view HP Reporter GUI on a stand-alone system, see on page 50.

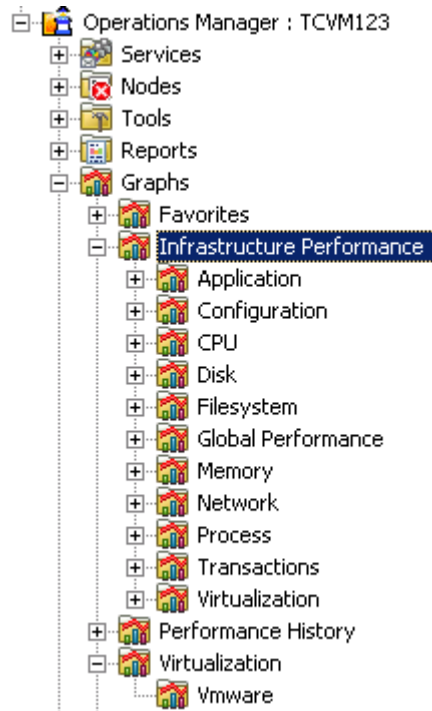
For details on installing the reporter package see [Installing the Reports Package when HP Reporter is Installed on a Separate System](#) on page 29.

Graphs

A set of preconfigured graphs is provided with the SI SPI and the VI SPI. To access the graphs from the HPOM console, you must install HP Performance Manager on the HPOM management server prior to the installation of the Infrastructure SPI graphs package.

You can access the SI SPI graphs by selecting **Graphs** → **Infrastructure Performance**, and the VI SPI graphs by selecting **Graphs** → **Infrastructure Performance** → **Virtualization**, as displayed in the image below.

S



Alternatively, if HP Performance Manager is installed on a separate (stand-alone) system connected to the HPOM management server, you can view the graphs on the HP Performance Manager stand-alone system.

Components of the Infrastructure SPIs on HPOM for UNIX

The following are the Infrastructure SPIs components on the HPOM for UNIX (HP-UX, Linux, and Solaris) console:

Services

After adding nodes to the HPOM for HP-UX, Linux, or Solaris node bank, manually deploy the SI SPI service discovery. This service discovery policy discovers the systems infrastructure and services on the node, and adds this information to the HPOM Services area.

Discovery of Virtual Infrastructure

For the virtualization nodes (VMware vMA or Microsoft Hyper-V) that are added to the HPOM for HP-UX, Linux, or Solaris node bank, manually deploy the VI SPI service discovery.

For more information about VMware vMA, go to the following web site:

<http://www.vmware.com/support/developer/vima/>.

For more information about Microsoft Hyper-V, go to the following web site:

<http://www.microsoft.com/virtualization/products/server/default.mspix>.

The VI SPI discovery policy discovers the virtual machines (guest machines) hosted on the managed nodes (host machines), and adds this information to the HPOM Services area. Select **Services** → **Virtualization Infrastructure** → **Show Graph** to view the VI SPI service map. The service map graphically represents the discovered virtual systems.

Discovery of Cluster Infrastructure

For the cluster nodes that are added to the HPOM for HP-UX, Linux, or Solaris node bank, manually deploy the CI SPI service discovery. The CI SPI discovery discovers the clusters, cluster nodes, and resource groups. Select **Services** → **Cluster Infrastructure** → **Show Graph**, to view the CI SPI service map.

Tools

The Infrastructure SPIs provides tools for the SI SPI and the VISPI. You can access the SI SPI tool group by selecting the **Tool Bank** → **Systems Infrastructure**, and the VI SPI tools group by selecting **Tool Bank** → **Virtualization Infrastructure**, as displayed in the image below.

Operations Manager Administration UI

Home OMU Server Admin Help

Edit Browse Server Configuration Find Analyse Deployment

Tool Bank

Filter

Found 20 Elements

A B C D E F G H I J K

<input type="checkbox"/>	Type	Label	Name
<input type="checkbox"/>		Certificate Tools	Certificate Tools
<input type="checkbox"/>		OV Composer	Correlation Composer
<input type="checkbox"/>		Distr NNM Admin Tools	Distr NNM Admin Tools
<input type="checkbox"/>		NNM Admin Tools	NNM Admin Tools
<input type="checkbox"/>		NNM-ET Views	NNM-ET Views
<input type="checkbox"/>		NNMi	NNMi
<input type="checkbox"/>		NT Tools	NT Tools
<input type="checkbox"/>		OM License Tools	OMU License Tools
<input type="checkbox"/>		Performance Agent	Performance Agent
<input type="checkbox"/>		Systems Infrastructure	SISPI
<input type="checkbox"/>		SSP Tools	SSP Tools
<input type="checkbox"/>		UN*X Tools	UN*X Tools
<input type="checkbox"/>		Virtualization Infrastructure	Virtualization Infrastructure
<input type="checkbox"/>		X-OVw	X-OVw
<input type="checkbox"/>		Broadcast	Broadcast
<input type="checkbox"/>		HPOM Status	HPOM Status

Choose an action

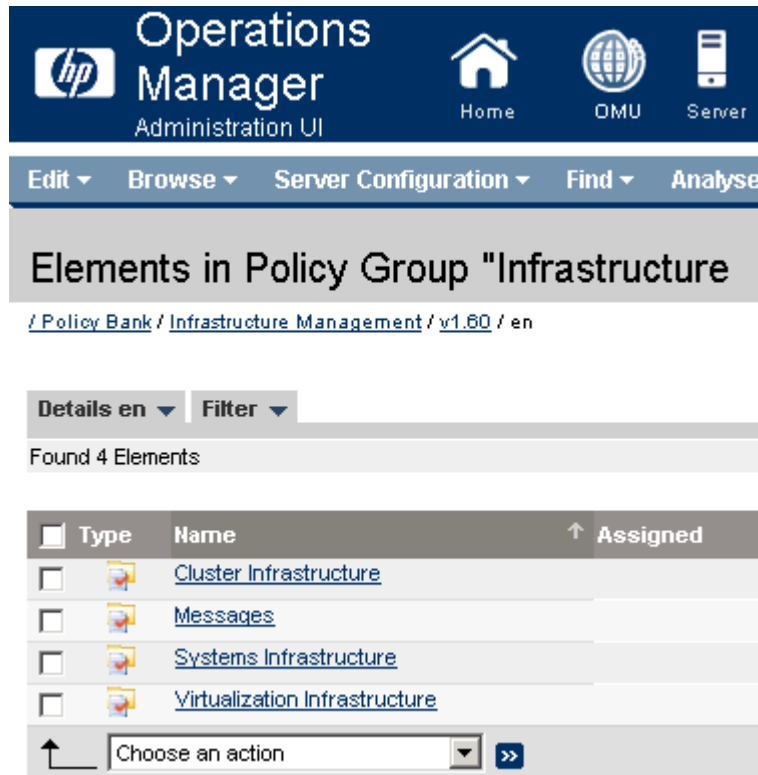
Policy Management

The Infrastructure SPI policies enable you to monitor the availability, capacity, and performance of your IT infrastructure. With Infrastructure SPIs version 1.60 onwards, the policy grouping appears under the current version number on the HPOM console. For example, it appears as v1.60 for the Infrastructure SPIs version 1.60.

Under the version grouping, the policies are grouped according to the language. For example, English policies are grouped under **en**, Japanese polices and grouped under **ja**, and Simplified Chinese policies are grouped under **zh**. The language groups appear according to the language selected at installation time.

Further grouping is based on the SI SPI, CI SPI, and VI SPI selected at the time of installation. Under each SPI the policies are grouped according to performance, availability, capacity, logs, and events. There is also a new policy group based on the operating system and vendor. This new policy group helps you to quickly access the policies relevant to your operating system at one place. The policies grouped by vendor include QuickStart policies and Advanced policies. With HPOM for HP-UX/ Linux/ Solaris, you can manually deploy the QuickStart policies as they are not deployed automatically. For information on deploying QuickStart policies, see [Deploying Quick Start Policies on HPOM for UNIX](#) on page 58.

The image below displays the policy grouping for English.



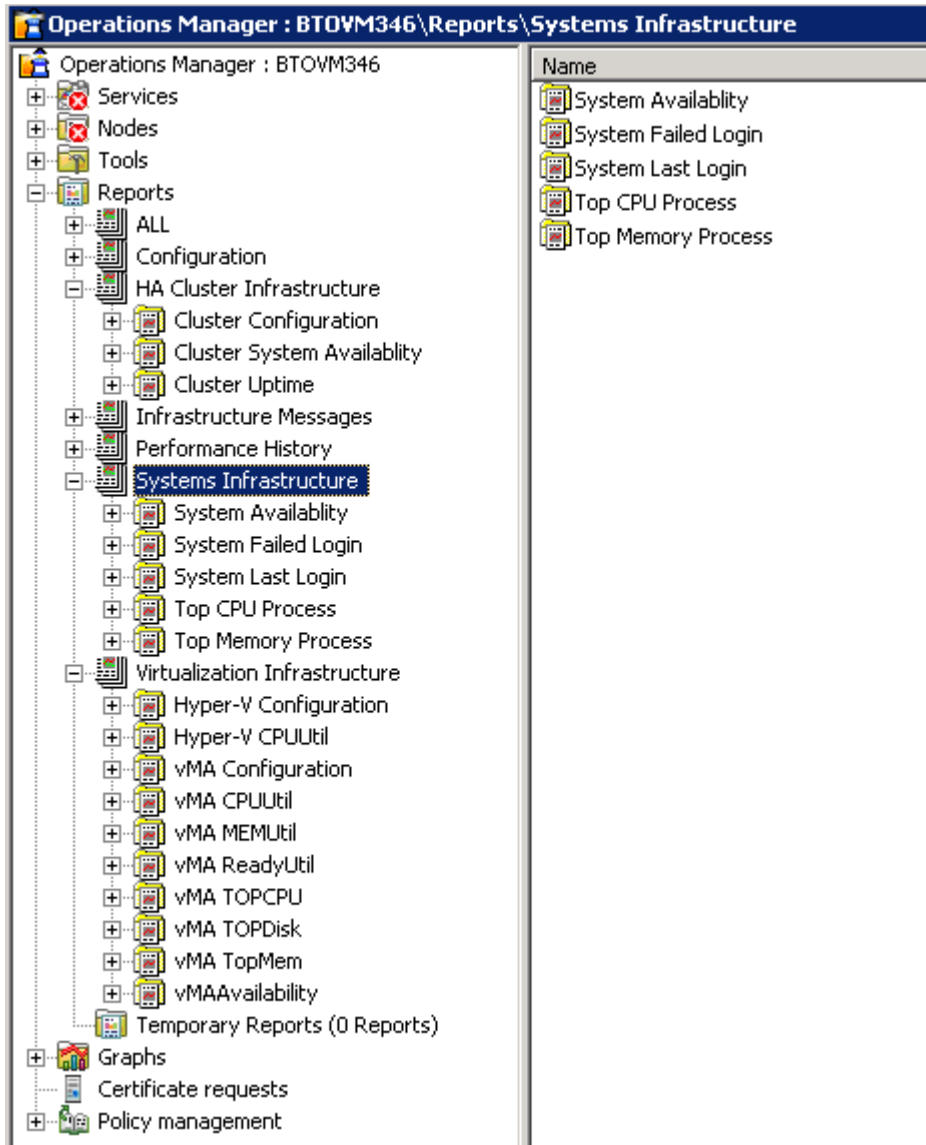
To view and access the SI SPI policies, select **Policy Bank** → **Infrastructure Management** → **v1.60** → **<language>** → **Systems Infrastructure**.

To view and access the VI SPI policies, select **Policy Bank** → **Infrastructure Management** → **v1.60** → **<language>** → **Virtualization Infrastructure**.

To view and access the CI SPI policies, select **Policy Bank** → **Infrastructure Management** → **v1.60** → **<language>** → **Cluster Infrastructure**.

Reports

With HPOM for HP-UX, Linux, and Solaris operating systems, HP Reporter is installed on a separate (stand-alone) system connected to the management server. You can view the reports on the HP Reporter stand-alone system. The image below displays the HP Reporter UI on the stand-alone system.



For more information on the integration of HP Reporter with HPOM, see the *HP Reporter Installation and Special Configuration Guide*.

Graphs

The Infrastructure SPIs provide graphs for the SI SPI and the VI SPI. To generate and view graphs from data collected, you must use HP Performance Manager in conjunction with HPOM.

To access the graphs, select the active message, open the Message Properties window, and click **Actions**. Under the Operator initiated action section, click **Perform**. Alternatively you can, right-click active message, select **Perform/Stop Action** and click **Perform Operator-Initiated Action**.

If HP Performance Manager is installed on the management server, you can launch and view graphs on the management server. If HP Performance Manager is installed on a separate (stand-alone) system connected to the HPOM management server, you can view the graphs on the HP Performance Manager stand-alone system. For information on how to integrate the HP Performance Manager with HPOM for HP-UX, Linux, and Solaris operating systems, see [Integrating HP Performance Manager with HPOM for UNIX](#), on page 60.

4 Getting Started

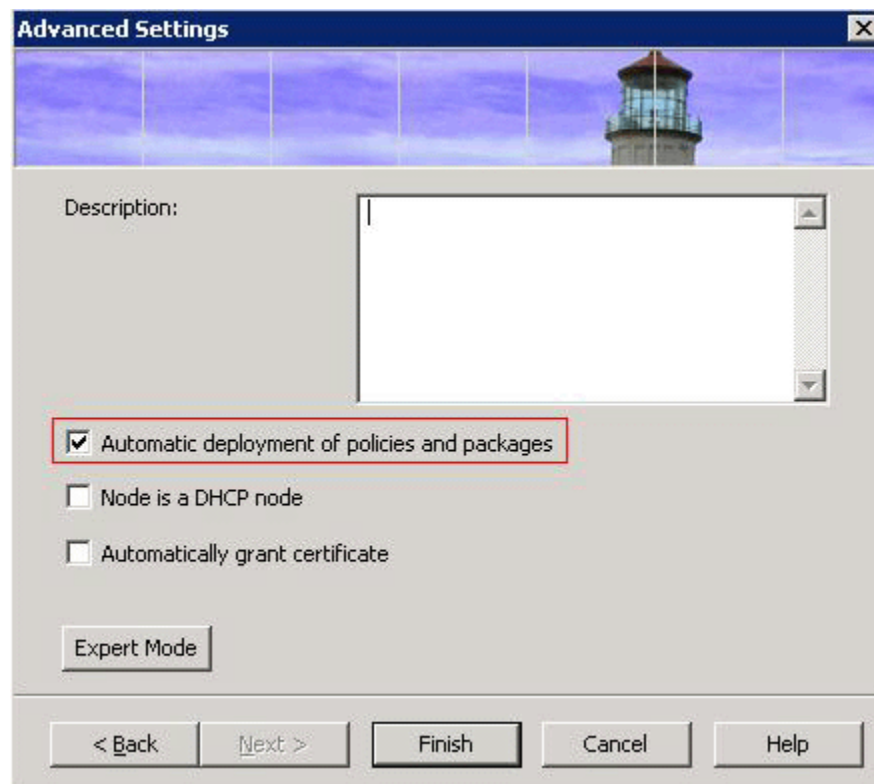
This chapter explains how to start using the Infrastructure SPIs.

Getting Started on HPOM for Windows

Follow the steps to start using Infrastructure SPIs installed on HPOM for Windows.

Adding Managed Nodes and Deploying SI SPI Discovery

After you install the Infrastructure SPIs on the HPOM for Windows management server, add the nodes that you want to monitor. When adding the nodes, the option of **automatic deployment of policies and packages** is selected by default as shown in the image below.



This option enables autodeployment of the following policies on the managed node:

- SI-SystemDiscovery
- InfraSPI-Messages
- OPC_OPCMON_OVERRIDE_THRESHOLD

- OPC_PERL_INCLUDE_INSTR_DIR

In case of existing nodes (that were added before the installation of Infrastructure SPIs), or where the **automatic deployment of policies and packages** check box was cleared while adding the managed node, manually deploy these policies.

Deploy the following policy on managed nodes:

To access and deploy the policies (in any order):

- Select **Policy management** → **Policy groups** → **Infrastructure Management** → **v1.60** → **<language>** → **Messages**, and deploy InfraSPI-Messages policy.
- Select **Policy management** → **Policy groups** → **Infrastructure Management** → **v1.60** → **<language>** → **Systems Infrastructure** → **AutoDiscovery**, and deploy SI-SystemDiscovery policy.
- Select **Policy management** → **Policy groups** → **Infrastructure Management** → **Settings and Thresholds** → **Agent Settings**, and deploy OPC_OPCMON_OVERRIDE_THRESHOLD and OPC_PERL_INCLUDE_INSTR_DIR policies.

Deploy the following policy on management server:

InfraSPI-ServerSetting policy: to access this policy select **Policy management** → **Policy groups** → **Infrastructure Management** → **Settings and Thresholds** → **Server Settings**

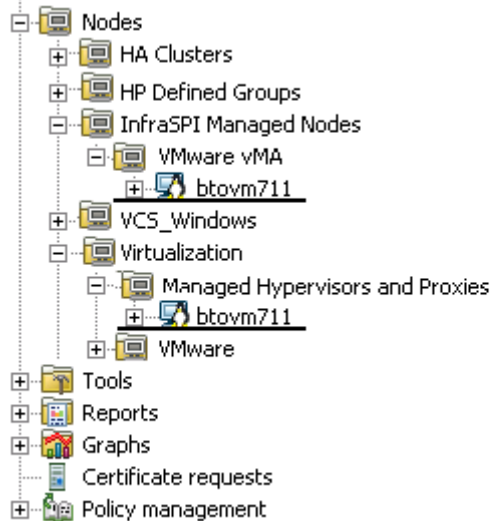
Running Discovery Policies on the Virtualized Infrastructure

To get started with discovering virtualized infrastructure, the first step is to run the SI SPI discovery.

If you added VMware vMA as a managed node on HPOM for Windows, the SI SPI automatically adds the ESX/ ESXi servers and vCenter servers that are registered on the vMA node, in the Nodes folder. The discovered managed nodes are regrouped in the console tree under the following Node folders:

- **Nodes** → **InfraSPI Managed Nodes** → **VMware vMA/ HyperV**
- **Nodes** → **Virtualization** → **Managed Hypervisors and Proxies**

Figure 3 VMware ESX/ ESXi/ vCenter managed node in the console tree



After adding the nodes in console tree Nodes folder, the SI SPI initiates VI SPI discovery policy.

The VI SPI discovery policy automatically adds the guest virtual machines hosted on the ESX, ESXi, and vCenter servers to the node bank if the XPL configuration setting on the HPOM management server `infraspri.AutoAdd_Guests` is set to `true`. By default it is set to `false` to prevent a large number of virtual machines getting added in batch causing poor performance at the time of discovery. You can set the value to true and re-run the VI SPI discovery to enable the auto-addition feature for virtual machines. You can also select a convenient time for running the auto-action.



Guest virtual machines hosted on Hyper-V server do not get automatically added in the node bank during or post discovery. This happens due to unavailability of IP address of the guest virtual machines in WMI. You can add the guests manually as SNMP/ Message-Allowed/ Managed nodes.

The VI SPI discovery policy adds the discovered elements to the HPOM service map. Select **Services** → **Virtualization Infrastructure**, to view the VI SPI service map that graphically represents the discovered virtual infrastructure.

Running Discovery Policies on the Cluster Infrastructure

To get started with discovering cluster infrastructure, the first step is to run the SI SPI discovery.

If you added a cluster node on HPOM for Windows, the SI SPI automatically adds the cluster nodes and resource groups in the node bank. The cluster nodes are regrouped in the console tree under the following Node folders:

- **Nodes** → **HA Clusters** → **Clustered Nodes**
- **Nodes** → **HA Clusters** → *<cluster name>* → **Nodes**

The resource groups are regrouped in the console tree under the following Node folders:

Nodes → **HA Clusters** → *<cluster name>* → **Resource Groups**

After adding the nodes in console tree Nodes folder, the SI SPI initiates CI SPI discovery policy.

The CI SPI discovery policy adds the discovered elements to the HPOM service map. Select **Services** → **HA Cluster Infrastructure**, to view the CI SPI service map that graphically represents the discovered cluster infrastructure.

Deploying Quick Start Policies on HPOM for Windows

After the infrastructure is discovered and the service map is populated on the HPOM for Windows management server, the QuickStart policies are automatically deployed to the managed nodes (if policy autodeployment is enabled). Available for all three Infrastructure SPIs, QuickStart policies get you started immediately without having to spend much time customizing settings. Autodeployment of policies is enabled by default. You can choose to turn off automatic deployment of policies when services are discovered. In addition, you can modify and save preconfigured policies with new names to create custom policies for your own specialized purposes.

The advanced policies like disk utilization policy and disk capacity monitor policy are used in specific scenarios. You can manually deploy these policies as required.

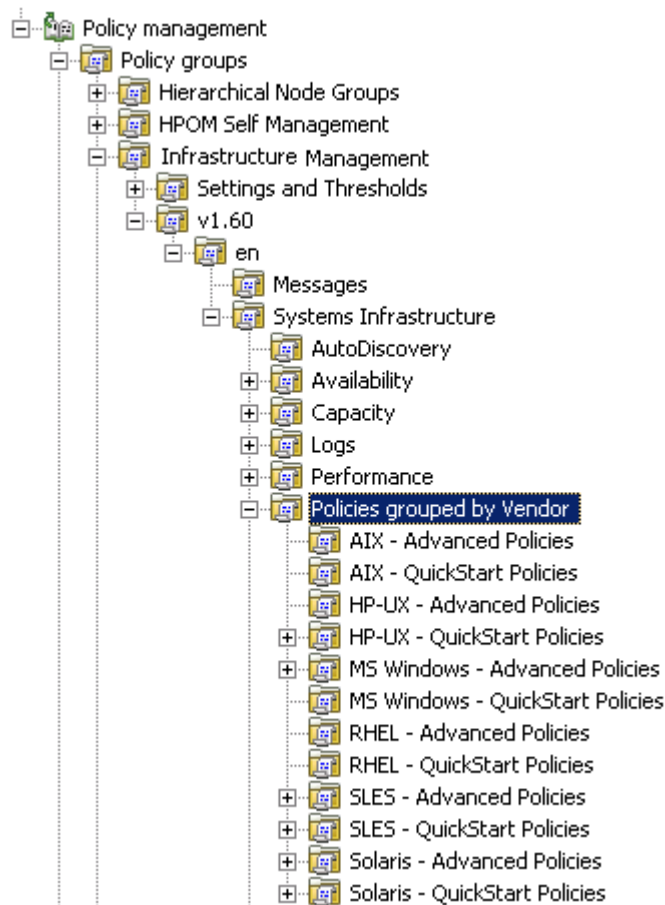
If you turned off autodeployment of policies, you can manually deploy the QuickStart by accessing either of the two policies grouping provided by the Infrastructure SPIs. The groupings are based on *monitored aspects* and *vendor and operating system*. The monitored aspects based grouping helps you to access and deploy policies to monitor performance, availability, capacity, logs, and security aspects across multiple operating systems. For example, to monitor availability of scheduled job service on your infrastructure, expand:

Infrastructure Management → v1.60 → <language> → Systems Infrastructure → Availability → Scheduled Job Service

The **Policies grouped by Vendor** help you to quickly access the policies relevant to your operating system at one place. For example, to access SI-RHELCronProcessMonitor policy for deploying it on a managed node, expand:

Infrastructure Management → v1.60 → <language> → Systems Infrastructure → Policies grouped by Vendor → RHEL - QuickStart Policies → SI-RHELCronProcessMonitor

The Policies grouped by vendor include two sub groups: QuickStart and Advanced. The QuickStart group includes the policies that are used most often. The advanced policies like disk utilization policy and disk capacity monitor policy are used in specific scenarios. The figure below shows the policies grouped by vendor and the subgroups for QuickStart and Advanced policies.



To deploy the policies, select the appropriate QuickStart policy group and right-click. Select **All Tasks → Deploy on**. The Deploy policies on window screen opens. Select the managed nodes where you want to deploy the policies and click **OK**.

Getting Started on HPOM for UNIX

Follow the steps for getting started with the Infrastructure SPIs on HPOM for UNIX (HP-UX, Linux, and Solaris).

Adding Managed Node and Deploying SI SPI Discovery

- 1 Add the nodes that you want to monitor on the management server. These nodes appear in the Node Bank.
- 2 Create a node group, SISPI-Deployment.
- 3 Assign the following policies to this node group:
 - SI-SystemDiscovery
 - InfraSPI-Messages
 - OPC_OPCMON_OVERRIDE_THRESHOLD
 - OPC_PERL_INCLUDE_INSTR_DIR
- 4 Add the managed nodes to this node group.
- 5 Deploy (distribute) the assigned policies on the managed nodes.

Deploy the following policy on management server:

The *InfraSPI-ServerSettings* policy is automatically assigned to the management server. Manually deploy the policy on the management server. To access the policy, select / **Policy Bank** / **Infrastructure Management** / **v1.60** / **Settings and Thresholds** / **Server Settings**.

Running Discovery Policies on the Virtualized Infrastructure

To get started with discovering virtualized infrastructure, the first step is to run the SI SPI discovery.

The SI SPI discovery creates relevant node groups for the virtualization environment and adds the managed nodes to the respective groups as follows:

- If the node is vMA, the SI SPI discovery adds the vCenter server and ESX/ ESXi hosts that are registered on the vMA to the relevant nodes groups. The discovery policy adds the vCenter hosts to **VISPI-vCenter** node group and ESX/ ESXi hosts to the **VISPIHosts-VMware** node group.
- If the node is Hyper-V, SI SPI discovery adds it to the **VISPIHosts-HyperV** node group.

To access these nodes, select **All Objects** → **All Node Groups**.

After running SI SPI discovery, manually assign and deploy the VI SPI discovery policy to the **VISPI-Deployment** node group.

The VI SPI discovery policy automatically adds the guest virtual machines hosted on the ESX, ESXi, and the vCenter servers to the node bank if the XPL configuration setting on the HPOM management server `infraspi.AutoAdd_Guests` is set to `true`. By default it is set to `false` to prevent a large number of virtual machines getting added in batch causing poor

performance at the time of discovery. You can set the value to true and re-run the VI SPI discovery to enable the auto-addition feature for virtual machines. You can also select a convenient time for running the auto-action.



Guest virtual machines hosted on the Hyper-V server do not get automatically added in the node bank during or post discovery. This happens due to unavailability of the IP address of the guest virtual machines in WMI. You can add the guests manually as SNMP/Message-Allowed/ Managed nodes.

The VI SPI discovery policy adds the discovered elements to the HPOM service map. The service map graphically represents the discovered virtual infrastructure.

Running Discovery Policies on the Cluster Infrastructure

To get started with discovering cluster infrastructure, the first step is to run the SI SPI discovery.

The SI SPI discovery creates relevant node groups for the cluster environment and adds the cluster nodes and resource groups in the relevant node groups.

For example if the node is MCSG cluster on HP-UX, the SI SPI discovery will add it to **CISPI-Deployment** and **CISPI-MCSG-HPUX** node groups. In case of resource group, it will add it to **CISPI-RG** node group.

After running SI SPI discovery, manually assign and deploy the CI SPI discovery policy to the **CISPI-Deployment** node group.

The CI SPI discovery policy adds the discovered elements to HPOM service map. You can view the CI SPI service map that graphically represents the discovered cluster infrastructure.

Deploying Quick Start Policies on HPOM for UNIX

After the infrastructure is discovered and the service map is populated on the HPOM for UNIX management server, the QuickStart policies are automatically assigned to the managed nodes. Available for all three Infrastructure SPIs, QuickStart policies get you started immediately without having to spend much time customizing settings. Automatic assignment of policies is enabled by default. You can deploy these policies on the managed nodes.

The groupings are based on *monitored aspects* and *operating systems/vendor*. The monitored aspects based grouping helps you to access and deploy policies to monitor performance, availability, capacity, logs, and security aspects across multiple operating systems. For example, to monitor the availability of a scheduled job service on your infrastructure, select:

/ Policy Bank / Infrastructure Management / v1.60 / en / Systems Infrastructure / Availability / Scheduled Job Service

The policies grouped by operating system and vendor help you to quickly access the policies relevant to your operating system at one place. For example, to access SI-CPUSpikeCheck policy for deploying it on a managed node, select:

/ Policy Bank / Infrastructure Management / v1.60 / en / Systems Infrastructure / Policies grouped by Vendor / RHEL - QuickStart Policies

Policies grouped by operating system include two sub groups: QuickStart and Advanced. The QuickStart group includes the policies that are used most often. The advanced policies like the disk utilization policy and the disk capacity monitor policy are used in specific scenarios. The figure below shows the policies grouped by vendor and the subgroups for QuickStart and Advanced policies.

The screenshot displays the HP Operations Manager Administration UI. The top navigation bar includes the HP logo, 'Operations Manager Administration UI', and icons for Home, OMU, Server, Admin, and Help. Below this is a secondary navigation bar with menu items: Edit, Browse, Server Configuration, Find, Analyse, Deployment, and Tasks. The main content area shows the title 'Elements in Policy Group "Infrastructure Management/v1.60/Infrastructure/Policies grouped by Vendor"' and a breadcrumb trail: / Policy Bank / Infrastructure Management / v1.60 / en / Systems Infrastructure / Policies grouped by Vendor. A 'Details Policies grouped by Vendor' button and a 'Filter' dropdown are visible. Below this, it states 'Found 12 Elements'. A table lists the policies with columns for Type, Name, Assigned, Latest Mode, and Smart Plug-in. At the bottom, there is an action bar with a 'Choose an action' dropdown and a '>>' button.

<input type="checkbox"/>	Type	Name	↑	Assigned	Latest Mode	Smart Plug-in
<input type="checkbox"/>		AIX - Advanced Policies				
<input type="checkbox"/>		AIX - QuickStart Policies				
<input type="checkbox"/>		HP-UX - Advanced Policies				
<input type="checkbox"/>		HP-UX - QuickStart Policies				
<input type="checkbox"/>		MS Windows - Advanced Policies				
<input type="checkbox"/>		MS Windows - QuickStart Policies				
<input type="checkbox"/>		RHEL - Advanced Policies				
<input type="checkbox"/>		RHEL - QuickStart Policies				
<input type="checkbox"/>		SLES - Advanced Policies				
<input type="checkbox"/>		SLES - QuickStart Policies				
<input type="checkbox"/>		Solaris - Advanced Policies				
<input type="checkbox"/>		Solaris - QuickStart Policies				

Viewing Reports and Graphs

To generate and view reports and graphs from data collected by the Infrastructure SPIs, you must use HP Reporter and HP Performance Manager, respectively, in conjunction with HPOM. The Infrastructure SPIs collect and store reporting and graphing data in a data store. The data store can be CODA (HP Operations agent's data store—also known as embedded performance component) or HP Performance Agent.

For VI SPI reporting and graphing, HP Performance Agent must be installed on the managed node.

To view graphs on HPOM for HP-UX, Linux, or Solaris you need to first integrate HP Performance Manager with the HPOM management server.

Integrating HP Performance Manager with HPOM for UNIX.

To integrate HPOM for UNIX (HP-UX, Linux, or Solaris) server with HP Performance Manager, follow these steps:

- If HP Performance Manager is installed on the HPOM server, run the following command:

```
# /opt/OV/contrib/OpC/OVPM/install_OVPM.sh
```

```
install_OVPM.sh <nodename>:<port>
```

Example: `install_OVPM.sh test.ovtest.com:8081`

- If HP Performance Manager is installed on a remote system connected to the HPOM server, follow these steps:
 - a Copy the graph templates from the remote system where HP Performance Manager is installed to the HPOM server. To learn about the graph types and their location on the system, see *HP Performance Manager Administrator Guide*.

- b Run the following command on the HPOM server:

```
# /opt/OV/contrib/OpC/OVPM/install_OVPM.sh
```

```
install_OVPM.sh <nodename>:<port>
```

Example: `install_OVPM.sh test.ovtest.com:8081`

These steps set the host system configuration for HP Performance Manager, that is used when launching graphs from events in the HPOM operator GUI.

Data Collection for Reports

With the VI SPI, data collection for reports does not depend on policy deployment. The data is collected by the HP Performance Agent deployed on the managed nodes.

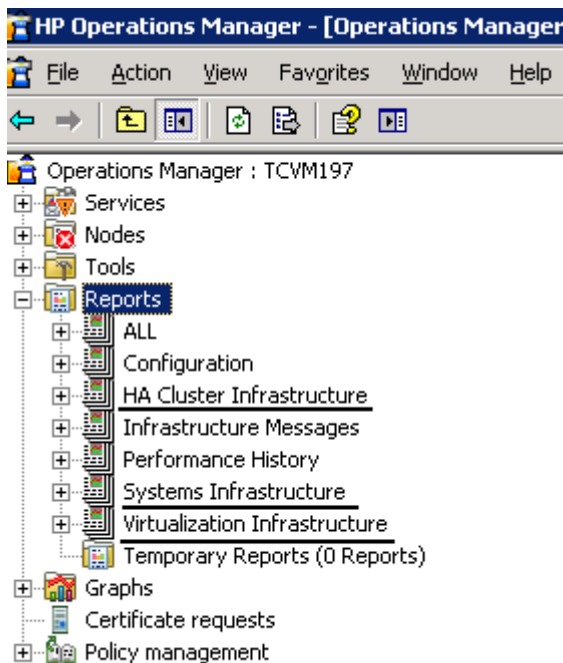
The reports provided for the SI SPI and the CI SPI depend on policies. The following table lists the reports and policies that are required to be deployed on the managed node to collect data for corresponding reports.

Reports	Policies	Managed Node Platform	SPI
Last Logins/ Unused Logins	SI-MSWindowsLastLogonsCollector	Windows	Systems Infrastructure
Last Logins/ Unused Logins	SI-LinuxLastLogonsCollector	Linux	Systems Infrastructure
Failed Login	SI-MSWindowsFailedLoginsCollector	Windows	Systems Infrastructure
Failed Login	SI-UNIXFailedLoginsCollect	Linux, HP-UX, AIX, Solaris	Systems Infrastructure

Reports	Policies	Managed Node Platform	SPI
Cluster Configuration	CI-ClusterDataCollector	Sun Cluster, VCS Clusters, Service Guard, RHEL cluster	Cluster Infrastructure
Cluster Uptime	CI-ClusterDataCollector	Sun Cluster, VCS Clusters, Service Guard, RHEL cluster	Cluster Infrastructure
Cluster System Availability	CI-ClusterDataCollector	Sun Cluster, VCS Clusters, Service Guard, RHEL cluster	Cluster Infrastructure

To view reports for the Infrastructure SPIs from HPOM for Windows, expand **Reports** → **Infrastructure Management** → **<Systems/ HA Cluster/ Virtualization> Infrastructure** in the console tree. To display a report, select the desired report on the HPOM console, right-click, and then select **Show report**.

Figure 4 Reports for Infrastructure SPIs on HPOM for Windows



To view reports for the Infrastructure SPIs from HPOM for HP-UX, Linux, and Solaris operating systems, HP Reporter must be installed on a separate (stand-alone) system connected to the management server. HP Reporter can also be installed on stand-alone system with HPOM for Windows. To view the reports on the HP Reporter stand-alone system expand **Reporter Administrator** → **Reports** → **<Systems/ HA Cluster/ Virtualization> Infrastructure**.

Operations Manager : BTOVM346\Reports\System Infrastructure

- Operations Manager : BTOVM346
 - Services
 - Nodes
 - Tools
 - Reports
 - ALL
 - Configuration
 - HA Cluster Infrastructure
 - Cluster Configuration
 - Cluster System Availability
 - Cluster Uptime
 - Infrastructure Messages
 - Performance History
 - Systems Infrastructure**
 - System Availability
 - System Failed Login
 - System Last Login
 - Top CPU Process
 - Top Memory Process
 - Virtualization Infrastructure
 - Hyper-V Configuration
 - Hyper-V CPUUtil
 - vMA Configuration
 - vMA CPUUtil
 - vMA MEMUtil
 - vMA ReadyUtil
 - vMA TOPCPU
 - vMA TOPDisk
 - vMA TopMem
 - vMAAvailability
 - Temporary Reports (0 Reports)
 - Graphs
 - Certificate requests
 - Policy management

Name
System Availability
System Failed Login
System Last Login
Top CPU Process
Top Memory Process

5 Removing Infrastructure SPIs



The uninstallation procedure removes all versions of the Infrastructure SPIs policies including the customized policies, from the management server.

Workaround: If you want to retain any policy, create a copy of the policy with a different name.

Disk Space Requirement

To remove the Infrastructure SPIs, make sure you have approximately 240 MB of total disk space and 35 MB of space in the temporary folders available on the management server.

Uninstalling the Infrastructure SPIs from the Windows Management Server

Perform the following tasks:

Task 1: Remove Infrastructure SPIs Policies from the Managed Nodes

Follow these steps:

- 1 In the HPOM console tree, expand the folders **Operations Manager** → **Policy Management** → **Policy groups** → **Infrastructure Management**.
- 2 Right-click **Infrastructure Management**, and then select **All Tasks** → **Uninstall from...**
- 3 In the Uninstall Policies dialog box, select **All Nodes**.
- 4 Click **OK**.

You must wait until all policies are uninstalled from all nodes. The status of policy uninstallation can be viewed in the Deployment jobs window.

Task 2: Remove the Infrastructure SPIs from the Management Server

You can remove the Infrastructure SPIs from the HPOM for Windows management server by the following methods:

Attended Uninstallation of the Infrastructure SPIs from the Windows Management Server

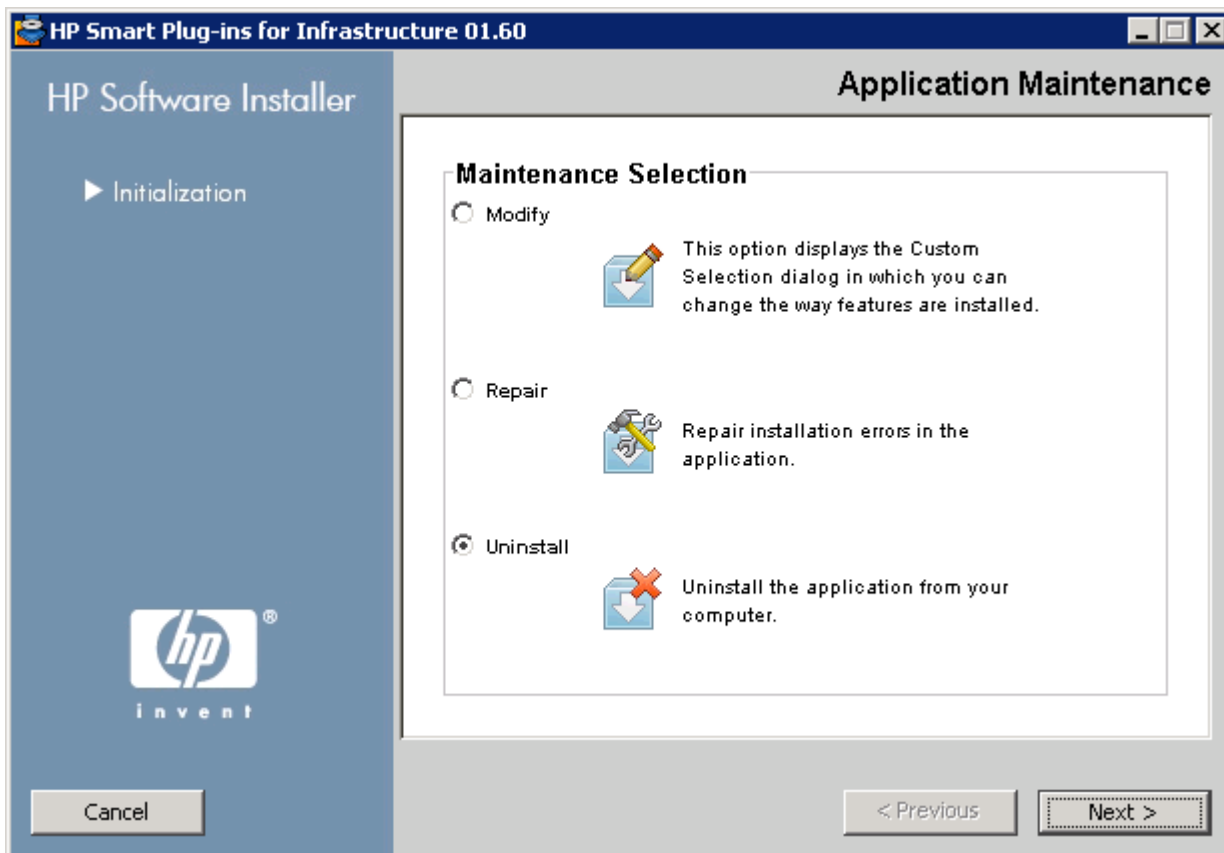
Follow these steps:

- 1 To start the Infrastructure SPIs Uninstallation wizard from the control panel:

- a Go to **Start** → **Settings** → **Control Panel**.
- b Double-click **Add or Remove Programs**.
- c Select *HP Smart Plug-ins for Infrastructure* and click **Change/Remove** to uninstall.

Alternatively, you can start Infrastructure SPIs uninstallation wizard from the HP Smart Plug-ins for Infrastructure DVD or the installer directory:

- a Open the temporary directory containing the Infrastructure SPIs Installer package.
 - b Click **HPInfraSPI_setup.exe** to start the uninstallation wizard.
- 2 If you see the Application requirement check warnings box displayed, click **Continue**.
The Application Maintenance page opens.



- 3 Select **Uninstall** and click **Next**.
The Pre-Uninstall Summary page appears.
- 4 Click **Uninstall**. The wizard starts uninstalling the Infrastructure SPIs.
- 5 Click **Done** to complete uninstallation.

Attended Uninstallation of Individual Infrastructure SPIs from the Windows Management Server

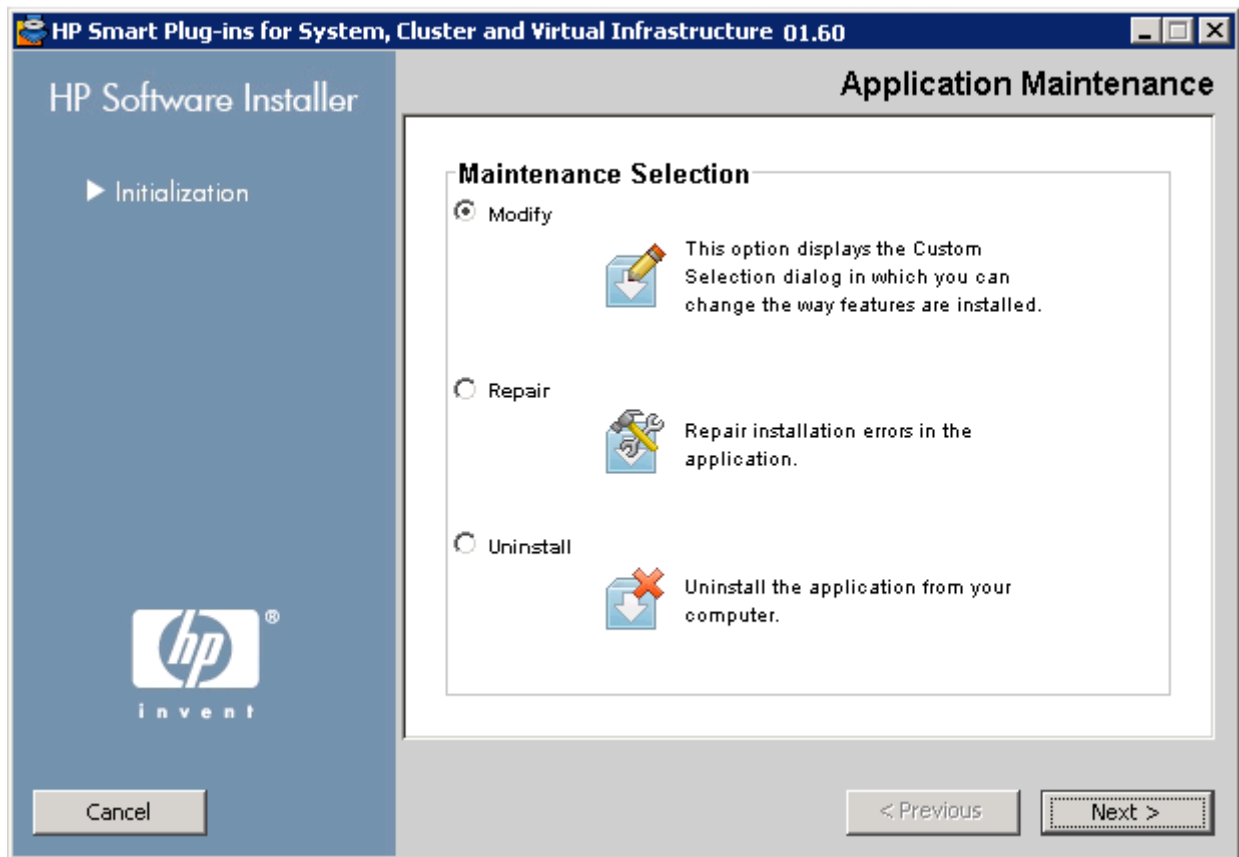
Follow these steps:

- 1 To start HP Infrastructure SPIs Uninstallation wizard from the control panel:

- a Go to **Start** → **Settings** → **Control Panel**.
- b Double-click **Add or Remove Programs**.
- c Select *HP Smart Plug-ins for Infrastructure* and click **Change/Remove** to uninstall.

Alternatively, you can start Infrastructure SPIs Uninstallation wizard from the HP Smart Plug-ins for Infrastructure DVD or the installer directory:

- a Open the temporary directory containing the Infrastructure SPIs Installer package.
 - b Click **HPInfraSPI_setup.exe** to start the uninstallation wizard.
- 2 If you see the Application requirement check warnings box displayed, click **Continue**.
The Application Maintenance page opens.



- 3 Select **Modify** and click **Next**.

The Pre-Install Summary page appears.

- 4 Select all the options that you want to continue with except the SPI that you want to uninstall.
- 5 Click **Modify**. The wizard starts uninstalling the Infrastructure SPIs.

At this stage the selected Infrastructure SPIs, reports package, and graphs package are ignored as they are already installed. The SPI that was *not* selected gets uninstalled.

- 6 Click **Done** to complete uninstallation of the individual SPI.

Unattended Uninstallation of the Infrastructure SPIs from the Windows Management Server

Follow these steps:

- 1 Open the Windows command prompt and change the directory to C:\Program Files\HP\HP BTO Software\Uninstall\HPInfraSPI
- 2 Run the following command:

```
setup.exe -DUNINSTALL -i silent
```

Uninstalling the Infrastructure SPIs from the UNIX Server

This process completely removes the Infrastructure SPIs installation, including policies for Infrastructure SPIs, from the HPOM Management Server. Any customization (copies of Infrastructure SPIs default policies) residing in other HPOM policy groups are also removed. Follow these steps in order to ensure a proper removal.

Task 1: Remove Policies from the Managed Nodes

Follow these steps:

- 1 Log on to HPOM as an administrator. The HPOM Administration UI appears.
- 2 Select **All Policy Assignments** from the Browse drop-down menu. The All Policy Assignments window opens.
- 3 In the All Policy Assignments window, select the policy or policy groups you want to remove from a node or a node group by clicking the Assignment Mode check box against the policies.
- 4 Select **Delete Assignment...** from the **Choose an Action** drop-down box and click submit. A message window will appear specifying that the operation cannot be undone.
- 5 Click **OK**.
- 6 The selected policy assignment is removed to the nodes.
- 7 From the HPOM Administration UI, click **Node Bank** under the Object Banks category. The Node Bank window opens.
- 8 In the Node Bank window, select the nodes or node groups from which you want to remove the policies.
- 9 Select **Deassign from this Group...** from the **Choose an Action** drop-down box and click submit.
- 10 The policies are removed from the selected nodes.

Task 2: Remove the Infrastructure SPIs from the Management Server

You can remove the Infrastructure SPIs from the HPOM for UNIX management server by using either of the following methods:

Attended Uninstallation of the Infrastructure SPIs from the UNIX Server

Follow these steps:

- 1 Log on as `root`, and open a terminal window.
- 2 In the terminal window verify that the `DISPLAY` environment variable is set correctly to your workstation by entering:

```
echo $DISPLAY
```

If the `DISPLAY` environment variable is not set correctly, set it correctly to view the console GUI properly.

```
export DISPLAY=<IP Address or host name of the local system from where you are installing Infrastructure SPIs>:0.0
```
- 3 Change to the directory `/opt/OV/Uninstall/HPInfraSPI`.
- 4 Start a X Window (or X11) system client on the system. The X Window System Client is required to view the graphical user interface (GUI) for installation. For example, you can use Reflection X.
- 5 Run the command:

```
./setup.bin
```
- 6 Select **Uninstall**. The wizard starts uninstalling the Infrastructure SPIs.
- 7 Follow the on-screen instructions and progress through the uninstallation process using the **Next** and **Uninstall** buttons.
- 8 Click **Done** to complete uninstallation.

Attended Uninstallation of the Infrastructure SPIs from the UNIX Server using command line interface

Follow these steps:

- 1 Change to the directory `/opt/OV/Uninstall/HPInfraSPI`.
- 2 Run the following command:

```
./setup.bin -i console
```

The following appears: `PRESS <ENTER> TO CONTINUE:.`
- 3 Press **ENTER** to continue.

The options to modify, repair or uninstall appear.
- 4 Type **3** to select uninstallation.

The following appears: `PRESS <ENTER> TO CONTINUE:.`
- 5 Press **ENTER** to continue.

When the uninstallation is complete, you will receive a message stating that the uninstallation is completed successfully.

Unattended Uninstallation of Infrastructure SPIs from UNIX Server

To perform unattended uninstallation of the Infrastructure SPIs through command prompt, run the following command:

```
/opt/OV/Uninstall/HPInfraSPI/setup.bin -i silent
```

Removing the Infrastructure SPIs from a Clustered Server Environment

To remove the Infrastructure SPIs from a cluster environment, follow these steps in the section [Uninstalling the Infrastructure SPIs from the Windows Management Server](#) on page 63 or [Uninstalling the Infrastructure SPIs from the UNIX Server](#) on page 66 as appropriate.

When you complete the uninstallation on one management server, proceed to the next management server in the cluster. (You can choose any management server in the cluster to begin the uninstallation.)

You are notified when uninstallation is complete.

Uninstallation Results

The following are not removed after uninstalling the Infrastructure SPIs:

- Nodes that are automatically added in the node bank using auto-add feature are not removed. This is to avoid potential loss of alert messages. You can take a backup of the assigned events if required, and manually remove the nodes.
- Node Groups will continue to exist even after the Infrastructure SPIs are uninstalled on HPOM for Unix (HP-UX, Linux and Solaris). This is to ensure that policies related to other SPIs assigned to the node groups are not affected.
- The top-level service elements such as *Virtualization Infrastructure* and *HA Cluster Infrastructure* are not removed although the relevant SPI models are removed. The service map is cleaned up after relevant discovery policies are undeployed from all nodes.

6 What's new in the Version 1.60 Software

The new software includes the following:

Support for HPOM for Solaris and HP OMi

The Infrastructure SPIs version 1.00 supported HP Operations Manager for Windows, HP-UX, and Linux. The current release extends support on HP Operations Manager for Solaris and Operations Manager i (OMi).

Support for AIX, HP-UX and Solaris on Managed Nodes

Infrastructure SPIs version 1.00 supports Windows and Linux managed nodes. The current Infrastructure SPIs version 1.60 extends support on AIX, HP-UX and Solaris managed nodes.

Enhanced Discovery

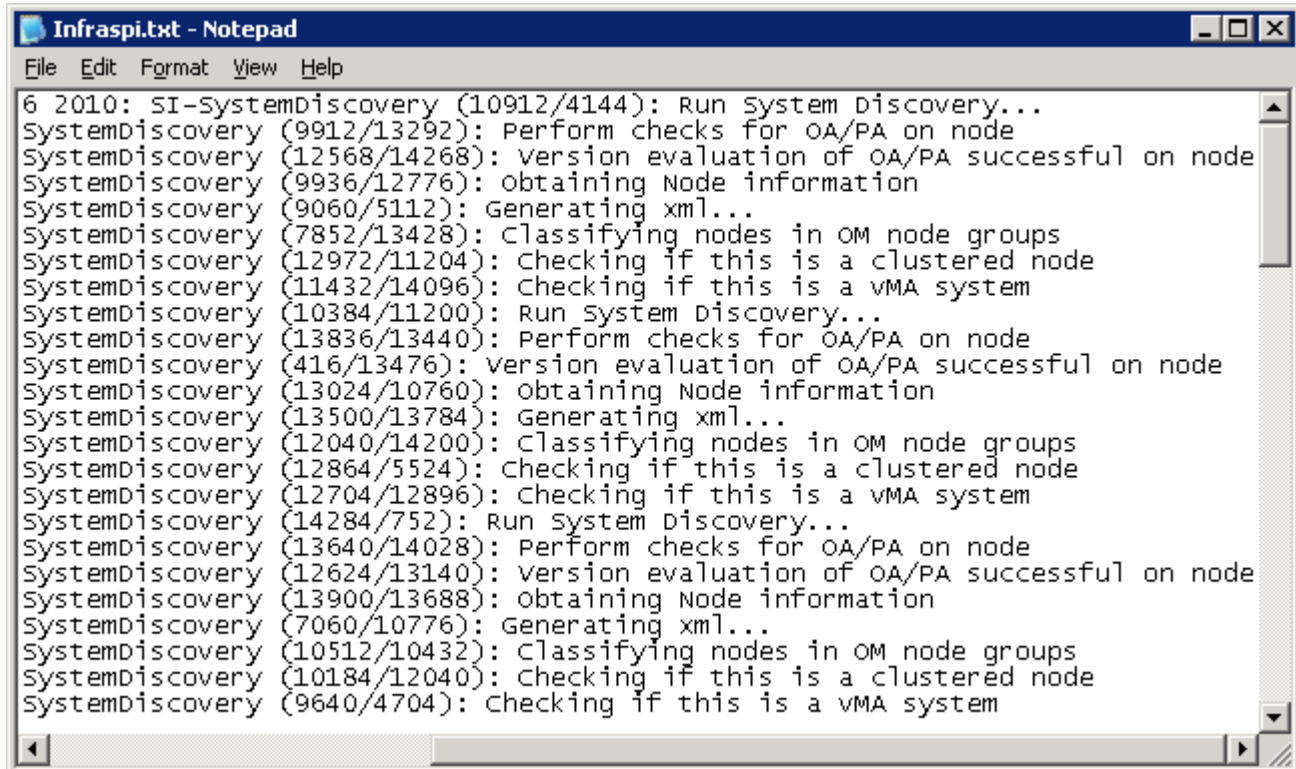
The discovery policy has been enhanced to send out appropriate messages to the HPOM console when discovery fails. These messages specify the problem and provide instruction text for resolution.

Enhanced Tracing

The Infrastructure SPI policies monitoring the infrastructure capacity and performance had two separate parameters for debug and trace files. These two parameters have been consolidated into a single parameter **Debug** in this release. The Debug parameter can be assigned three values:

- Debug=0, no trace messages will be sent.
- Debug=1, trace messages will be sent to the console.
- Debug=2, trace messages will be logged in a trace file on the managed node. The trace file location on managed node is `<OV_DATA_DIR>\<log>`.

The following is an example of a trace file text on a Windows system.



```
6 2010: SI-SystemDiscovery (10912/4144): Run System Discovery...
SystemDiscovery (9912/13292): Perform checks for OA/PA on node
SystemDiscovery (12568/14268): version evaluation of OA/PA successful on node
SystemDiscovery (9936/12776): obtaining Node information
SystemDiscovery (9060/5112): Generating xml...
SystemDiscovery (7852/13428): Classifying nodes in OM node groups
SystemDiscovery (12972/11204): checking if this is a clustered node
SystemDiscovery (11432/14096): checking if this is a vma system
SystemDiscovery (10384/11200): Run System Discovery...
SystemDiscovery (13836/13440): Perform checks for OA/PA on node
SystemDiscovery (416/13476): version evaluation of OA/PA successful on node
SystemDiscovery (13024/10760): obtaining Node information
SystemDiscovery (13500/13784): generating xml...
SystemDiscovery (12040/14200): Classifying nodes in OM node groups
SystemDiscovery (12864/5524): checking if this is a clustered node
SystemDiscovery (12704/12896): checking if this is a vma system
SystemDiscovery (14284/752): Run System Discovery...
SystemDiscovery (13640/14028): Perform checks for OA/PA on node
SystemDiscovery (12624/13140): version evaluation of OA/PA successful on node
SystemDiscovery (13900/13688): obtaining Node information
SystemDiscovery (7060/10776): Generating xml...
SystemDiscovery (10512/10432): Classifying nodes in OM node groups
SystemDiscovery (10184/12040): checking if this is a clustered node
SystemDiscovery (9640/4704): checking if this is a vma system
```

Enhanced Policy Grouping

In the Infrastructure SPIs version 1.60 a new policy grouping structure has been introduced in addition to the existing policy grouping that is based on vendors. The new grouping is based on vendors like Redhat and SuSE for System Infrastructure and Veritas and HP ServiceGuard for Cluster Infrastructure. This will help in quick and easy deployment of the relevant policies.

From version 1.60 onwards, the policy group name *SPI for infrastructure* on HPOM console is changed to *Infrastructure Management*. With installation of the current version of Infrastructure SPIs, the policy grouping will appear under the current version number on HPOM console. For example, it will appear as v1.60 for the Infrastructure SPIs version 1.60. If you have an earlier version of Infrastructure SPIs policies deployed on the server, the earlier policy grouping will appear under v1.0 along with the 1.60 grouping. This will help you to distinguish between the different SPI versions, and maintain changes made to policies in the earlier versions.

Enhanced Node Group Layout

The node group layout has been enhanced to provide more meaningful node group names and the groups have been re-organized for easy navigation.

The current release of Infrastructure SPI contains the following changes to the node groups.

Prerequisite: Deploy InfraSPI-Messages policy on OML/U/S before running discovery.

The upgrade process does not remove the older node groups that were created by the earlier version. Discovery must be run again and new node groups are created. All the assignments made to the old nodes groups will not apply to the newer node groups and they must be done manually.

A separate tool, System Infrastructure Cleanup 1.0 Node Groups has been provided on the OM Java GUI to remove all old InfraSPI 1.0 node groups.

The node group changes in this version are the following.

Earlier Node Group	New Node group
Managed Nodes:	
InfraSPI Managed Nodes - Red Hat Enterprise Linux	SISPI-RHEL
InfraSPI Managed Nodes - Suse Enterprise Linux	SISPI-SLES
InfraSPI Managed Nodes - Sun OS	SISPI-SunSolaris
InfraSPI Managed Nodes - IBM AIX	SISPI-IBM AIX
InfraSPI Managed Nodes - HP-UX	SISPI-HPUX
InfraSPI Managed Nodes - MS Windows	SISPI-MS Windows
InfraSPI Managed Nodes - VMware vMA Virtualization - VMware - vMA	SISPI-vMA
Clusters:	
HA Clusters - Clustered Nodes	CISPI-Deployment
HA Clusters - MCSG Cluster - <cluster name> - Nodes	CISPI-MCSG-HPUX CISPI-MCSG-RHEL CISPI-MCSG-SLES
HA Clusters - HACMP Cluster - <cluster name> - Nodes	CISPI-HACMP
HA Clusters - RHAS Cluster - <cluster name> - Nodes	CISPI-RHACluster
HA Clusters - VCS Cluster - <cluster name> - Nodes	CISPI-VCS-RHEL CISPI-VCS-SLES CISPI-VCS-HPUX CISPI-VCS-SunSolaris CISPI-VCS-IBM AIX CISPI-VCS-MS Windows
HA Clusters - MSCS Clusters - <cluster name> - Nodes	CISPI-MSCluster
HA Clusters - SC Clusters - <cluster name> - Nodes	CISPI-SunCluster
HA Clusters - <cluster type> - <cluster name> - Resource Groups	CISPI-RG
Virtualization:	

Earlier Node Group	New Node group
Virtualization - VMware - ESX Hosts Virtualization - VMware - ESXi Hosts	VISPIHosts-VMware
Virtualization - VMware - vCenter Hosts	VISPI-vCenter
Virtualization - VMware - VMware Guests	VISPIGuests-VMware
Virtualization - Microsoft - Hyper-V Hosts	VISPIHosts-HyperV
Virtualization - Microsoft - Hyper-V Guests	VISPIGuests-HyperV
Virtualization - Managed Hypervisors and Proxies	VISPI-Deployment

New and Changed Policies

The new and updated policies in the current release are the following:

SPI	Policy	New/ Changed
SI SPI	SI-AIXCronProcessMonitor	New
SI SPI	SI-AIXDHCPPProcessMonitor	New
SI SPI	SI-AIXInetdProcessMonitor	New
SI SPI	SI-AIXLpdProcessMonitor	New
SI SPI	SI-AIXNamedProcessMonitor	New
SI SPI	SI-AIXNfsServerProcessMonitor	New
SI SPI	SI-AIXPortmapProcessMonitor	New
SI SPI	SI-AIXQdaemonProcessMonitor	New
SI SPI	SI-AIXSendmailProcessMonitor	New
SI SPI	SI-AIXSyslogProcessMonitor	New
SI SPI	SI-AIXWebserverProcessMonitor	New
SI SPI	SI-GlobalCPUUtilization-AT	New
SI SPI	SI-HPUXBootpdProcessMonitor	New
SI SPI	SI-HPUXCronProcessMonitor	New
SI SPI	SI-HPUXInetdProcessMonitor	New
SI SPI	SI-HPUXLpschedProcessMonitor	New
SI SPI	SI-HPUXNamedProcessMonitor	New
SI SPI	SI-HPUXNfsServerProcessMonitor	New
SI SPI	SI-HPUXSendmailProcessMonitor	New

SPI	Policy	New/ Changed
SI SPI	SI-HPUXSshdProcessMonitor	New
SI SPI	SI-HPUXSyslogProcessMonitor	New
SI SPI	SI-HPUXWebserverProcessMonitor	New
SI SPI	SI-LinuxDHCPPProcessMonitor	New
SI SPI	SI-LinuxNamedProcessMonitor	New
SI SPI	SI-LinuxWebserverProcessMonitor	New
SI SPI	SI-MSWindowsEventLogRoleMonitor	New
SI SPI	SI-MSWindowsFirewallRoleMonitor	New
SI SPI	SI-MSWindowsNonPagedPoolUtilization-AT	New
SI SPI	SI-MSWindowsPagedPoolUtilization-AT	New
SI SPI	SI-MSWindowsPerfMonCollector	New
SI SPI	SI-MSWindowsRpcRoleMonitor	New
SI SPI	SI-MSWindowsSnmpProcessMonitor	New
SI SPI	SI-MSWindowsTaskSchedulerRoleMonitor	New
SI SPI	SI-OpenSshdProcessMonitor	New
SI SPI	SI-PerDiskAvgServiceTime-AT	New
SI SPI	SI-RunQueueLengthMonitor-AT	New
SI SPI	SI-SunSolarisCronProcessMonitor	New
SI SPI	SI-SunSolarisDHCPPProcessMonitor	New
SI SPI	SI-SunSolarisInetdProcessMonitor	New
SI SPI	SI-SunSolarisLpdProcessMonitor	New
SI SPI	SI-SunSolarisNamedProcessMonitor	New
SI SPI	SI-SunSolarisNfsProcessMonitor	New
SI SPI	SI-SunSolarisSendmailProcessMonitor	New
SI SPI	SI-SunSolarisSshdProcessMonitor	New
SI SPI	SI-SunSolarisSyslogProcessMonitor	New
SI SPI	SI-SunSolarisWebserverProcessMonitor	New
SI SPI	SI-UnixSnmpdProcessMonitor	New
CI SPI	CI-SunClusterNetworkLogMonitor	New
CI SPI	CI-SunClusterNodeLogMonitor	New
CI SPI	CI-SunClusterProcessMonitor	New

SPI	Policy	New/ Changed
CI SPI	CI-SunClusterResourceLogMonitor	New
CI SPI	CI-VCSUnixNetworkLogMonitor	New
CI SPI	CI-VCSUnixNodeLogMonitor	New
CI SPI	CI-VCSUnixProcessMonitor	Renamed from CI-LinuxVCS_Proces sMonitor
CI SPI	CI-VCSUnixResourceLogMonitor	New
CI SPI	CI-VCSWindowsNetworkLogMonitor	New
CI SPI	CI-VCSWindowsNodeLogMonitor	New
CI SPI	CI-VCSWindowsProcessMonitor	Renamed from CI-MSWindowsVCS_ ProcessMonitor
CI SPI	CI-VCSWindowsResourceLogMonitor	New

There are no policy additions or changes in policies for Virtualization Infrastructure SPI.

Changes in Message Groups

The upgrade adds new message groups **OS** and **HA** for Infrastructure SPIs version 1.60 messages, while retaining the earlier message groups **System** and **Clusters**. When new message groups are created, the older message groups already existing in the system are not deleted as in the current version.

We appreciate your feedback!

If an email client is configured on this system, by default an email window opens when you click on the bookmark “Comments”.

In case you do not have the email client configured, copy the information below to a web mail client, and send this email to **docfeedback@hp.com**

Product name:

Document title:

Version number:

Feedback:

