



Third Party System Management Integration Software

Sun Servers Integration 1.0 for HP OpenView Operations 7.5 for Windows

Servers supported:

- Sun Fire x64 Servers
- Sun SPARC Enterprise Servers

A complete, current list of supported Sun servers, service processors, and service processor firmware is available at the following web site:

<http://www.sun.com/system-management/tools.jsp>

Please consult this web site before installing the Sun Servers Integration 1.0 for HP OVO for Windows.

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Introduction

HP® OpenView Operations for Windows (hereafter HP OVO for Windows) is an enterprise management application that can use protocols such as the Simple Network Management Protocol (SNMP) to monitor the availability and status of networked devices.

Once you have installed and configured the Sun Servers Integration 1.0 for HP OVO for Windows, you will be able to take advantage of the following Sun-specific features in HP OVO for Windows.

- Alerts from Sun servers and service processors clearly identified by source.
- Sun-specific rules for displaying and prioritizing alerts from multiple sources.
- Support for Sun servers equipped with the Sun Integrated Lights Out Manager (ILOM) 2.0 service processor. This service processor uses the SUN-HW-TRAP-MIB MIB to provide more robust support for reporting device names and changes to device status.
- Support for Sun servers equipped with the Sun Embedded Lights Out Manager (Embedded LOM) service processor. This service processor uses the SUN-ILOM-PET-MIB MIB to forward PET traps.
- Support of the Sun™ SNMP Management Agent for Sun Fire™ and Netra™ Systems provides support for additional varbinds (variable binding pairs consisting of OIDs and values).
- Automatic acknowledgement of warning and error messages received from ILOM 2.0 service processors and the Sun™ SNMP Management Agent for Sun Fire™ and Netra™ Systems.
- Automatic parsing (via a Visual Basic script) of hardware sensor names from SNMP traps received from x64/EmbeddedLOM servers.
- Graphical installation and uninstallation wizard.

Once you have installed and configured the Sun Servers Integration 1.0 for HP OVO for Windows, HP OVO for Windows can display events received from multiple types of Sun servers. The following screen shot depicts SNMP messages received from an x64/ILOM (Sun Fire X4100) and an x64/EmbeddedLOM service processor (Sun Fire X2200).

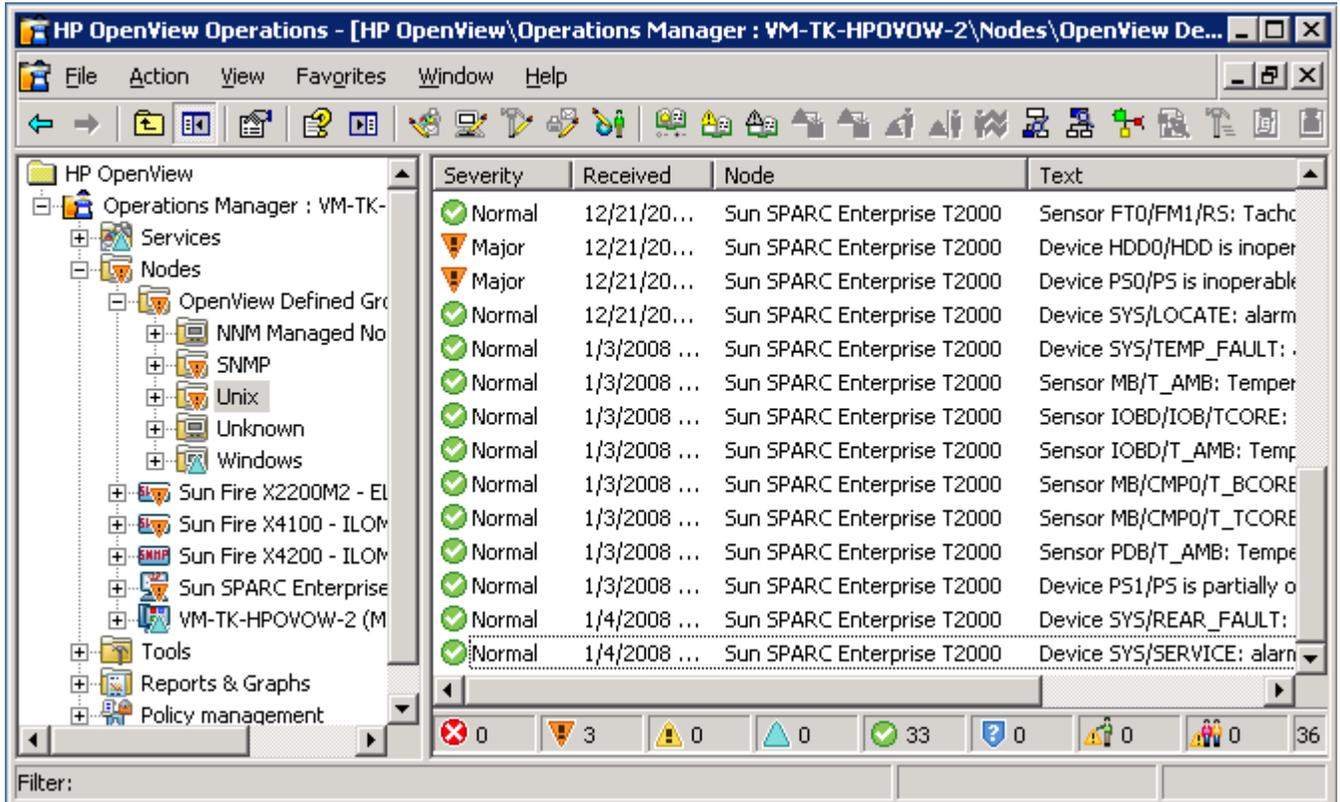
The screenshot displays the HP OpenView Operations console window. The title bar reads "HP OpenView Operations - [HP OpenView\Operations Manager : VM-TK-HPOVOW-2\Nodes\O...". The menu bar includes File, Action, View, Favorites, Window, and Help. The left-hand navigation pane shows a tree structure under "Operations Manager : VM-TK-HPC" with sub-items: Services, Nodes, OpenView Defined Group, NNM Managed Nodes, SNMP, Unix, Unknown, Windows, Sun Fire X2200M2 - ELOM, Sun Fire X4100 - ILOM SF, Sun Fire X4200 - ILOM SF, Sun SPARC Enterprise T2, VM-TK-HPOVOW-2 (Mane), Tools, Reports & Graphs, and Policy management.

The main pane displays a table of system events:

Severity	Recei...	Node	Text
Major	12/15...	Sun Fire X2200...	Voltage (CPU or Mainboar...
Warning	12/15...	Sun Fire X2200...	Voltage (CPU or Mainboar...
Normal	12/19...	Sun Fire X4100 ...	Fan speed sensor /SYS/F...
Major	12/19...	Sun Fire X4100 ...	Sensor /SYS/BP/LOCATE/...
Normal	12/19...	Sun Fire X4100 ...	Voltage sensor /SYS/MB/...
Normal	12/19...	Sun Fire X4100 ...	Voltage sensor /SYS/MB/...
Normal	12/19...	Sun Fire X4100 ...	Voltage sensor /SYS/MB/...
Normal	12/19...	Sun Fire X4100 ...	Voltage sensor /SYS/MB/...
Normal	12/19...	Sun Fire X4100 ...	Voltage sensor /SYS/MB/...
Normal	12/19...	Sun Fire X4100 ...	Temperature sensor /SYS...
Normal	12/19...	Sun Fire X4100 ...	Temperature sensor /SYS...
Normal	12/19...	Sun Fire X4100 ...	Voltage sensor /SYS/MB/...
Normal	12/19...	Sun Fire X4100 ...	Voltage sensor /SYS/MB/...
Normal	12/19...	Sun Fire X4100 ...	Voltage sensor /SYS/MB/...
Normal	12/19...	Sun Fire X4100 ...	Voltage sensor /SYS/MB/...
Normal	12/19...	Sun Fire X4100 ...	Voltage sensor /SYS/MB/...
Normal	12/19...	Sun Fire X4100 ...	Voltage sensor /SYS/MB/...

At the bottom of the console, a status bar shows the following counts: 0 Critical (red X), 9 Major (orange triangle), 0 Warning (yellow triangle), 2 Warning (blue triangle), 52 Normal (green checkmark), 0 Information (blue question mark), and 0 Unknown (grey triangle). A "Filter:" field is located at the bottom left.

HP OVO for Windows can also receive information from operating system agents such as the Sun SNMP Management Agent for Sun Fire and Netra Systems, here running on a Sun SPARC Enterprise T2000 server.



Supported Servers

The Sun Servers Integration 1.0 for HP OVO for Windows is one of several Sun ISV System Management solutions that provides Sun-specific resources for monitoring Sun servers in enterprise or workgroup data centers.

All the Sun servers supported by these integration packs fall into four categories differentiated by architecture (x64 or SPARC) and by service processor type (ALOM, ILOM, or Embedded LOM). Consult the following website to verify that a particular server in one of these categories is supported by Sun Servers Integration 1.0 for HP OVO for Windows:

<http://www.sun.com/system-management/tools.jsp>

Category	Supported	Description	Examples
x64 Servers with ILOM	Yes	x64 servers and blade server modules with the Integrated Lights Out Manager (ILOM) service processor Hereafter referenced as x64/ILOM servers. These servers are monitored at the service	Sun Fire X4100 M2 Sun Fire X4600 M2 Sun Blade X6220 Server Module Sun Blade X8440 Server Module

Category	Supported	Description	Examples
		processor level.	
SPARC Servers with ILOM	Yes	SPARC Solaris servers and blade server modules with the Integrated Lights Out Manager (ILOM) service processor Hereafter referenced as SPARC/ILOM servers. These servers can be monitored at either the service processor level or at the operating system level via the Sun SNMP Management Agent for Sun Fire and Netra Systems.	Sun SPARC Enterprise T5120 Sun SPARC Enterprise T5220
x64 Servers with Embedded LOM	Yes	x64 servers and blade server modules with the Embedded Lights Out Manager (Embedded LOM) service processor Hereafter referenced as x64/EmbeddedLOM servers. These servers are monitored at the service processor level.	Sun Fire X2100 M2 Sun Fire X2200 M2 Sun Blade X6250 Server Module
SPARC Servers with ALOM	Yes	SPARC Solaris servers with the Advanced Lights Out Manager (ALOM) service processor Hereafter referenced as SPARC/ALOM servers. These servers are monitored at the operating system level via the Sun™ SNMP Management Agent for Sun Fire™ and Netra™ Systems.	Sun SPARC Enterprise T1000 Sun SPARC Enterprise T2000 Sun Blade T6300 Server Module

The matrix of servers and service processors supported by Sun integration packs is expanding dynamically. A complete, current list of supported Sun servers, service processors, and service processor firmware is available at the following web site:

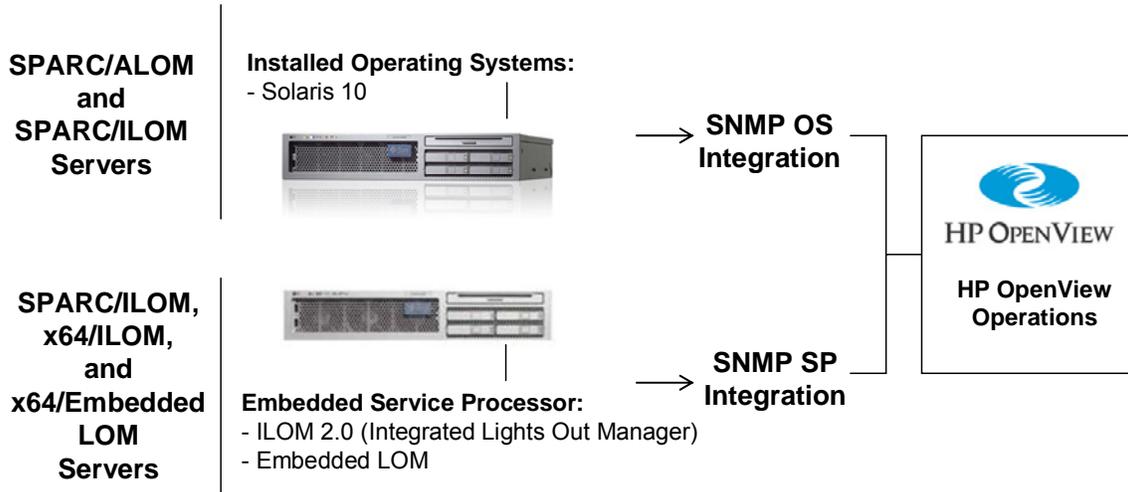
<http://www.sun.com/system-management/tools.jsp>

Please consult this web site before installing the Sun Servers Integration 1.0 for HP OVO for Windows.

Levels of Integration with HP OVO for Windows

The Sun Servers Integration 1.0 for HP OVO for Windows uses SNMP as its integration protocol at both the operating system and service processor level. No HP OVO for Windows agents need to be installed on any Sun server for this integration to work. Your options for integration derive from the types of Sun servers that you plan to integrate with HP OVO for Windows. x64/ILOM, x64/EmbeddedLOM, and SPARC/ALOM servers support only one level of integration; SPARC/ILOM servers support two.

To implement SNMP integration at either the operating system or service processor level, you must verify that monitored devices are configured with the appropriate port and server information so they can communicate with the server running HP OVO for Windows.



Operating System Integration

You can integrate SPARC/ALOM and SPARC/ILOM servers with HP OVO for Windows at the operating system level via the Sun SNMP Management Agent for Sun Fire and Netra Systems.

Servers	Description
SPARC/ILOM Servers	<p>The ILOM 2.x service processor sends HP OVO for Windows SNMP traps defined by the following SNMP MIB:</p> <ul style="list-style-type: none"> - SUN-HW-TRAP-MIB <p>To enable this integration, you do not need to install any HP OVO for Windows-specific agents on the monitored devices. You do need to configure SNMP on the managed device so that the host running HP OVO for Windows is one of its SNMP trap destinations.</p> <p>Note: You can monitor SPARC/ILOM servers at either the SP level using ILOM 2.0 and the SUN-HW-TRAP-MIB MIB or at the OS level using the Sun SNMP Management Agent for Sun Fire and Netra Systems.</p>
SPARC/ALOM Servers	<p>The software component Sun SNMP Management Agent for Sun Fire and Netra Systems must be installed on SPARC/Solaris systems and must be configured to send traps/alerts to the server on which HP OVO for Windows is installed and running (with proper SNMP port information). This SNMP Agent sends HP OVO for Windows traps defined by the following SNMP MIB:</p> <ul style="list-style-type: none"> - SUN-PLATFORM-MIB <p>The Sun SNMP Management Agent for Sun Fire and Netra Systems is not bundled with the Sun Servers Integration 1.0 for HP OVO for Windows. Download it from SunSolve or install it from the Solaris DVD distributed with your SPARC server.</p>

Service Processor Integration

You can integrate x64/ILOM, x64/EmbeddedLOM, and SPARC/ILOM servers at the service processor level.

Servers	Description
x64/ILOM and X64/EmbeddedLOM Servers	<p>The ILOM 2.x and Embedded LOM service processors send HP OVO for Windows SNMP traps defined by one of the following SNMP MIBs:</p> <ul style="list-style-type: none">- SUN-HW-TRAP-MIB (ILOM 2.x)- SUN-ILOM-PET-EVENTS (Embedded LOM) <p>To enable this integration, you do not need to install any HP OVO for Windows-specific agents on the monitored devices. You do need to configure SNMP on the managed device so that the host running HP OVO for Windows is one of its SNMP trap destinations.</p> <p>Note: Sun recommends that you upgrade the firmware on your service processors to the latest version supported by this integration.</p>
SPARC/ILOM Servers	<p>The ILOM 2.x service processor sends HP OVO for Windows SNMP traps defined by the following SNMP MIB:</p> <ul style="list-style-type: none">- SUN-HW-TRAP-MIB <p>To enable this integration, you do not need to install any HP OVO for Windows-specific agents on the monitored devices. You do need to configure SNMP on the managed device so that the host running HP OVO for Windows is one of its SNMP trap destinations.</p> <p>Note: You can monitor SPARC/ILOM servers at either the SP level using ILOM 2.0 and the SUN-HW-TRAP-MIB MIB or at the OS level using the Sun SNMP Management Agent for Sun Fire and Netra Systems.</p>

This Manual

The typical use case for the Sun Servers Integration 1.0 for HP OVO for Windows involves four tasks:

- Downloading and installing the integration pack.
- Configuring the integration pack.
- Using the integration pack to monitor Sun servers.
- Uninstalling the integration pack.

This manual, consequently, contains the following chapters:

- Chapter 1 “Introduction”

- Chapter 2 “Installing the Sun Servers Integration 1.0 for HP OVO for Windows”
- Chapter 3 “Configuring the Sun Servers Integration 1.0 for HP OVO for Windows”
- Chapter 4 “Configuring Sun Devices to be Monitored by HP OVO for Windows”
- Chapter 5 “Monitoring Sun Devices in HP OVO for Windows”
- Chapter 6 “Uninstalling the Sun Servers Integration 1.0 for HP OVO for Windows”
- Chapter 7 “Troubleshooting”
- Appendices:
 - Appendix A “Installed Files”
 - Appendix B “Sun System Management MIBs”
 - Appendix C “Glossary”

This manual is intended for experienced HP OVO for Windows administrators, field sales representatives, and support engineers.

Requirements

The managed devices and the HP OVO for Windows server software have different software requirements.

Managed Devices

Managed devices (servers and service processors) must have the following software installed and configured properly.

A complete, current list of supported Sun servers, service processors, and service processor firmware is available at the following web site:

<http://www.sun.com/system-management/tools.jsp>

Please consult this web site before installing the Sun Servers Integration 1.0 for HP OVO for Windows.

Device	Software Requirement
SPARC/ILOM and x64/ILOM Service Processors	<p>Sun Integrated Lights Out Manager (ILOM) firmware at 2.0 or higher</p> <p>No HP OVO for Windows agents are required on the managed device.</p> <p>Note: Sun recommends that you upgrade the firmware on your ILOM service processors to ILOM 2.0 (when available) if they are currently running a previous version.</p>
x64/EmbeddedLOM	Sun Embedded LOM firmware

Device	Software Requirement
Service Processors	No HP OVO for Windows agents are required on the managed device.
SPARC/ALOM and SPARC/ILOM Servers	Supported operating systems: - Solaris 10 (see product documentation for versions) Sun™ SNMP Management Agent for Sun Fire™ and Netra™ Systems installed No HP OVO for Windows agents are required on the managed device.

HP OVO for Windows Server Software

Integration between HP OVO for Windows and Sun devices has been tested with the following versions of HP OVO for Windows software.

Component	Version	Operating System and Software
HP OpenView Operations for Windows	7.5	Microsoft Windows Server 2003 Standard Edition

Related Documentation

For information about Sun Server Management Solutions, Sun servers, and HP OVO for Windows, consult the following related documentation:

- *HP OpenView Operations for Windows® Version: 7.5 Installation Guide (B7491-90049)*
- *Sun™ SNMP Management Agent Administration Guide for Sun Fire™ and Netra™ Servers (819-7978)*
- *Sun Integrated Lights Out Manager 2.0 User's Guide (820-1188)*
- For documentation on the Sun Embedded Lights Out Manager, consult the product documentation that ships with your particular x64/EmbeddedLOM server.

Installing the Sun Servers Integration 1.0 for HP OVO for Windows

This chapter describes how to perform the following tasks:

- Download the Sun Servers Integration 1.0 for HP OVO for Windows
- Unpack the Sun Servers Integration 1.0 for HP OVO for Windows
- Install the Sun Servers Integration 1.0 for HP OVO for Windows on your management server
- Verify that the Sun Servers Integration 1.0 for HP OVO for Windows has been successfully installed on your management server

For information about configuring the Sun Servers Integration 1.0 for HP OVO for Windows on the management server, see Chapter 3 “Configuring the Sun Servers Integration 1.0 for HP OVO for Windows for HP OVO for Windows.” For information about configuring managed devices, see Chapter 4 “Configuring Sun Devices to be Monitored by HP OVO for Windows.”

Pre-installation Checklist

Before you download and install the Sun Servers Integration 1.0 for HP OVO for Windows, collect the following information.

- HP OVO for Windows version:** v7.5 _____
- HP OVO for Windows Server Name:** _____
The name of the host server on which HP OVO for Windows has been installed and configured.

Downloading the Sun Servers Integration 1.0 for HP OVO for Windows

To install the most current version of the Sun Servers Integration 1.0 for HP OVO for Windows, download it from the following URL:

```
http://www.sun.com/system-management/tools.jsp
```

Note: As updated versions of the Sun Management Pack get posted to the web, the name of the compressed archive to download will change. For this release, download the following:

```
Sun_Servers_Integration-1.0_HP_OVOW.zip
```

Save the Sun Servers Integration 1.0 for HP OVO for Windows to a working directory on the local system from which you plan to perform the installation and uncompress it.

Unpacking the Sun Servers Integration 1.0 for HP OVO for Windows

Before you can install files in the Sun Servers Integration 1.0 for HP OVO for Windows to your HP OVO for Windows server, you must first unpack the distribution archive that you downloaded in the previous procedure.

To unpack the distribution archive, do the following:

1. **Download the distribution archive to a local working directory.**
2. **Double-click the distribution archive to load it into your local archive utility.**
3. **Extract the contents of the archive to disk.**

The unpacked distribution archive contains one executable file:

```
install.exe
```

The following sections explain how to use this file to install the Sun Servers Integration 1.0 for HP OVO for Windows. See Appendix A for a listing of the Sun-specific files created during the installation process.

Installing the Sun Servers Integration 1.0 for HP OVO for Windows

Once you have unpacked the distribution archive, you must run the Install Wizard. The wizard handles most of the installation work required to get the Sun Servers Integration 1.0 for HP OVO for Windows working with HP OVO for Windows.

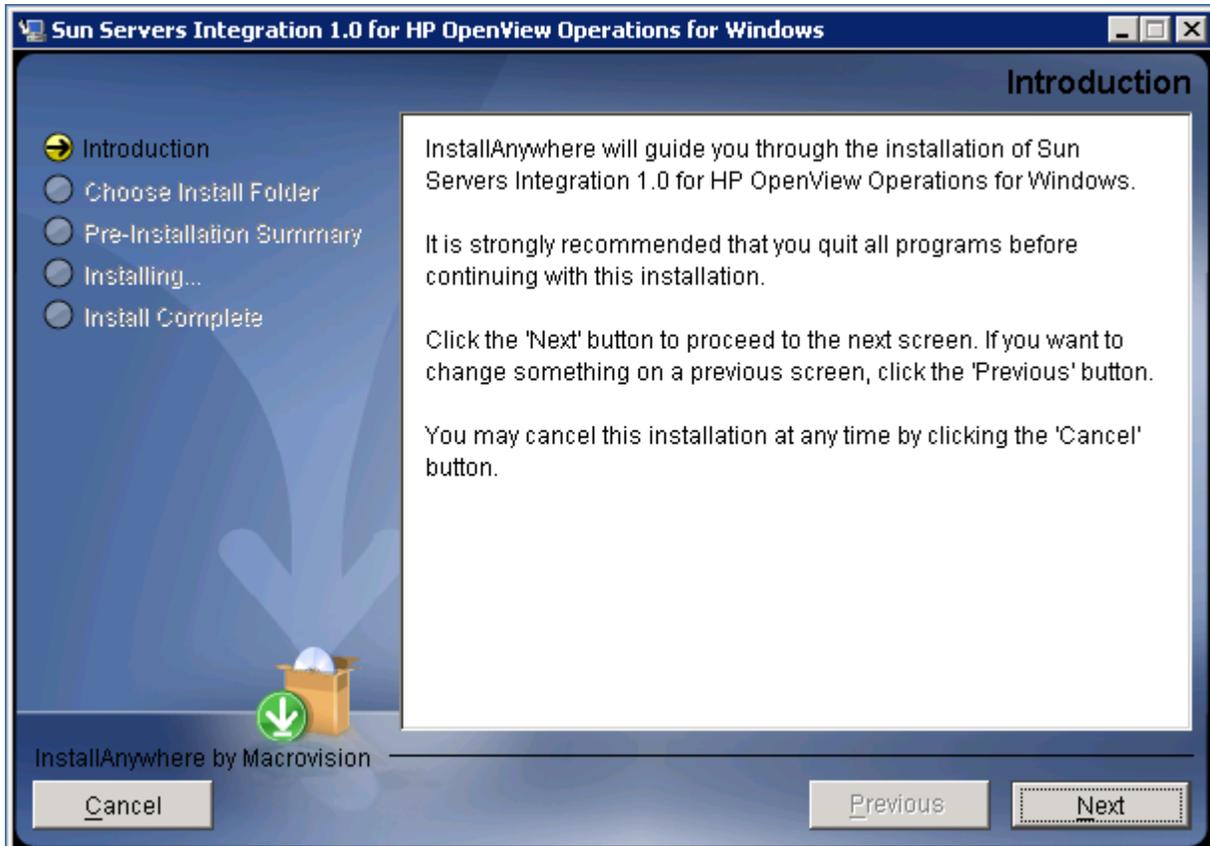
To install the Sun Servers Integration 1.0 for HP OVO for Windows, do the following:

1. Double-click the executable file appropriate for your version of the Sun Servers Integration 1.0 for HP OVO for Windows.

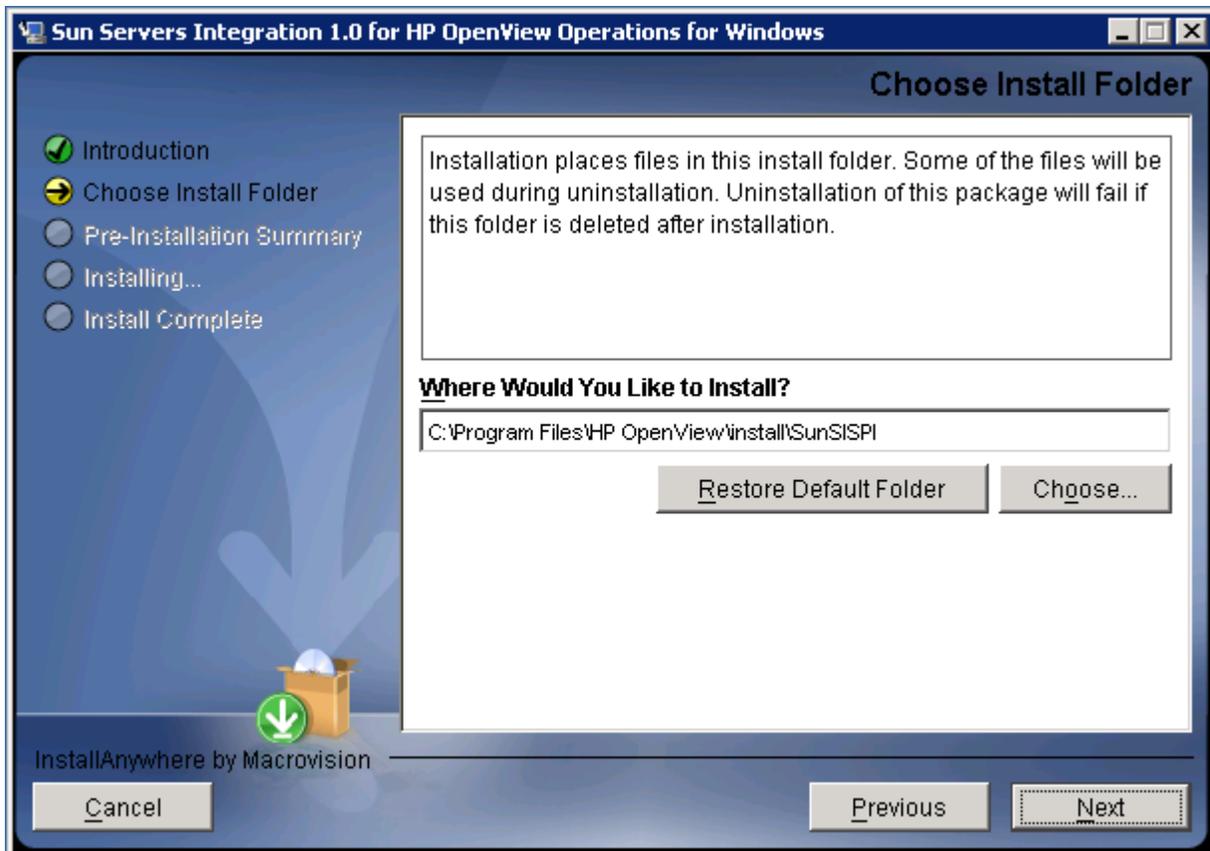
For the version of the Sun Servers Integration 1.0 for HP OVO for Windows documented in this manual, the executable file is named:

`install.exe`

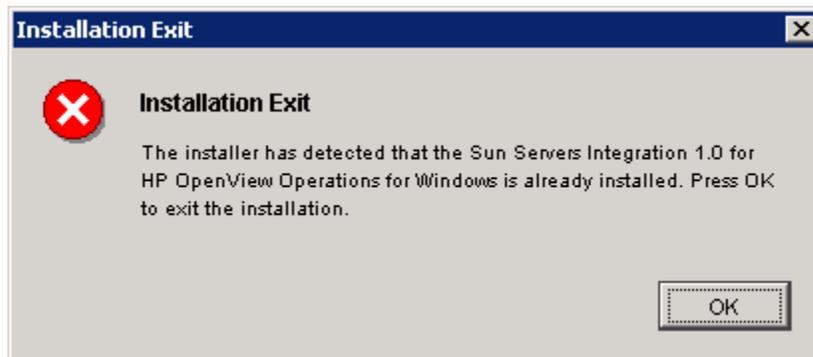
The Install Wizard displays its opening screen.



2. Click the Next button to display the following screen.



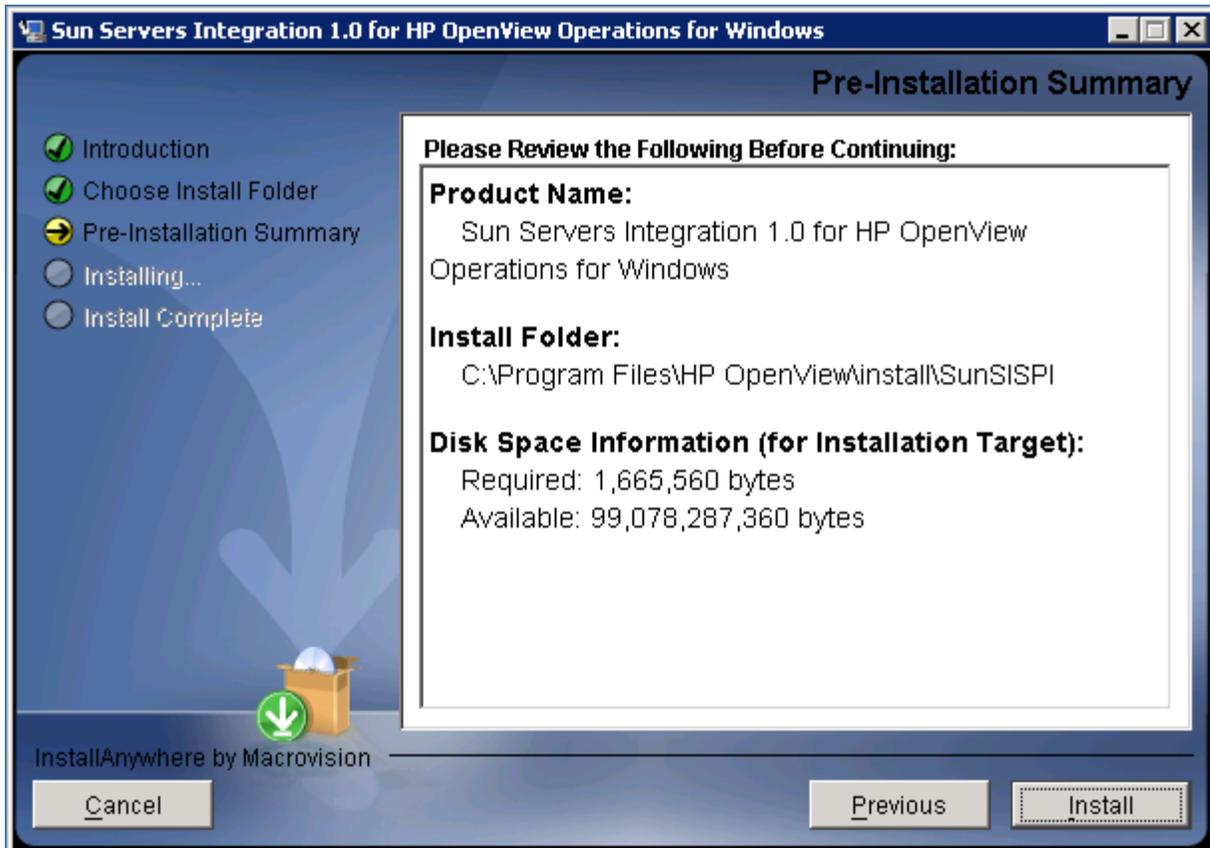
Note: The Install Wizard at this point checks the Windows Registry for entries verifying that the HP OVO for Windows management software has been installed and that the Sun Servers Integration 1.0 for HP OVO for Windows has *not* been installed. If the Install Wizard encounters one of these conditions, it displays an error message and exits the installation process.



3. Specify the name of the target installation directory or click the Choose ... button to browse for a target installation directory.

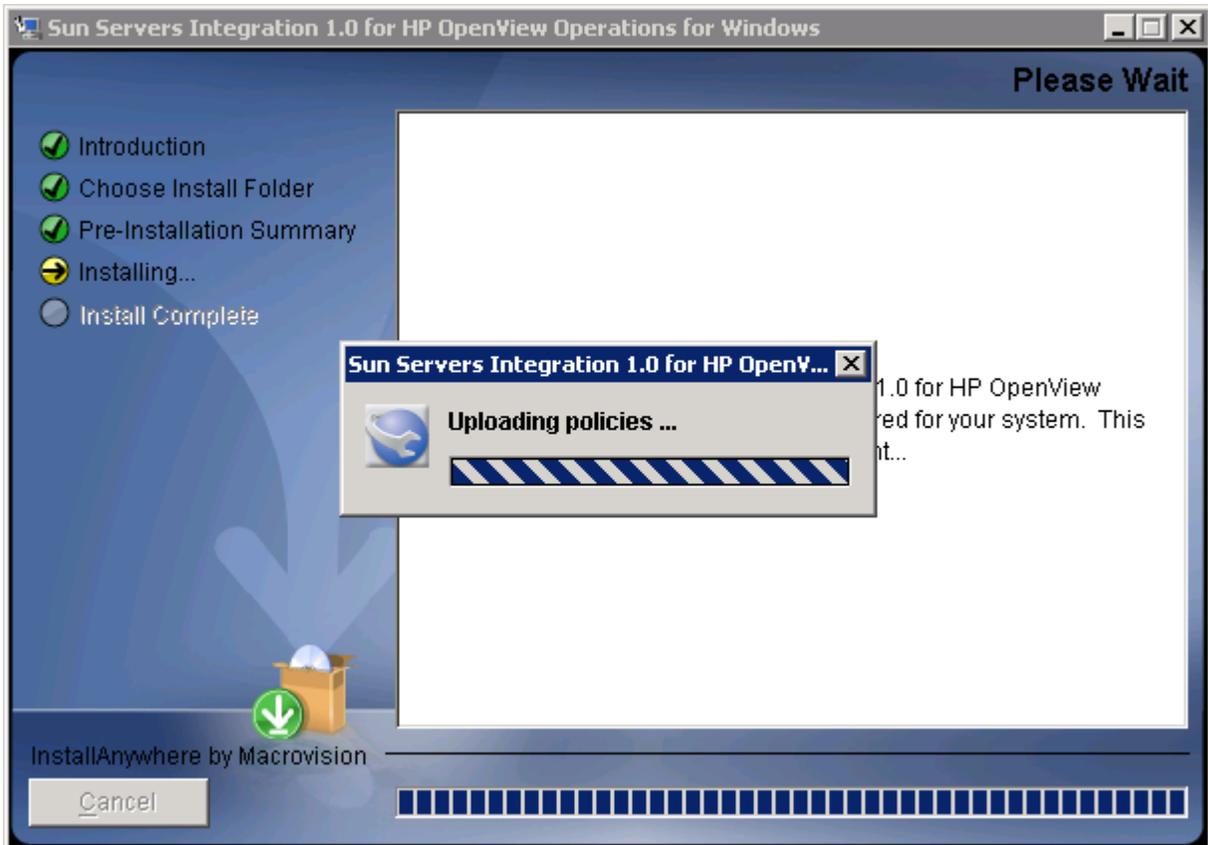


4. Click the Next button to display the following screen.

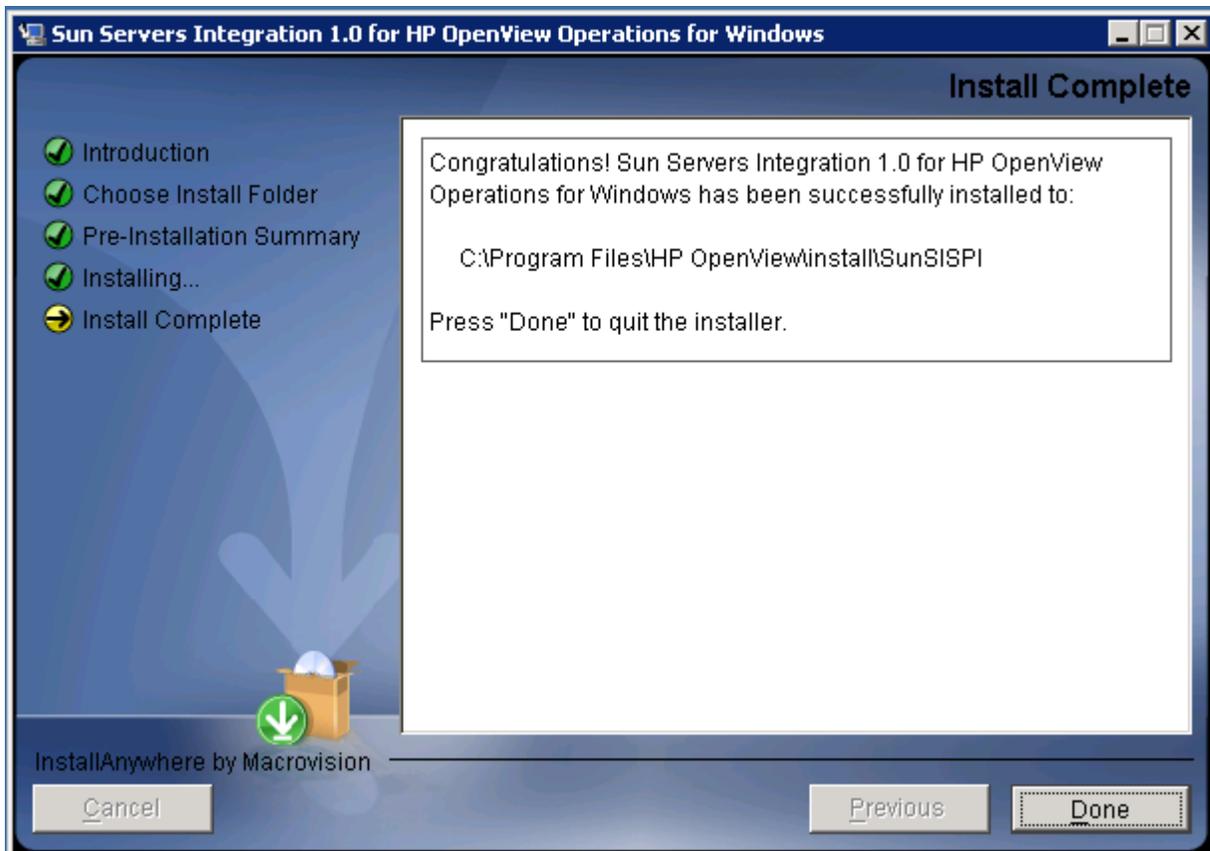


5. Review the information and click either the Previous button to change the location for installed files or the Install button to proceed with installation.

The Install Wizard begins to install files on your management server.

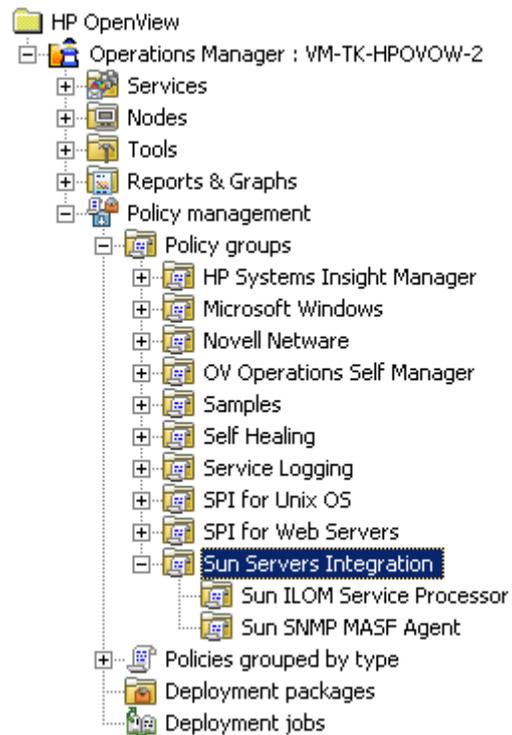


6. Click the Done button to complete the procedure.



Verifying Successful Installation

To verify that the Sun Servers Integration 1.0 for HP OVO for Windows has been successfully installed on your HP OVO for Windows server, verify that the Sun Servers Integration policy group appears in the HP OVO for Windows management console.



If you see a policy group named Sun Servers Integration, then the Sun Servers Integration 1.0 for HP OVO for Windows has been successfully installed on your HP OVO for Windows server.

See the next chapter for detailed information about configuring the Sun Servers Integration 1.0 for HP OVO for Windows on your HP OVO for Windows server.

Configuring the Sun Servers Integration 1.0 for HP OVO for Windows

Once you have installed the Sun Servers Integration 1.0 for HP OVO for Windows on your HP OVO for Windows management server, you need to perform at least one configuration procedure on the server:

- Deploy Sun-specific policy files on your HP OVO for Windows management server
 - [Optional] Configure the SNMP agent on your HP OVO for Windows management server to intercept SNMP v2 traps
-

Deploying Sun-Specific Policy Files to HP OVO for Windows

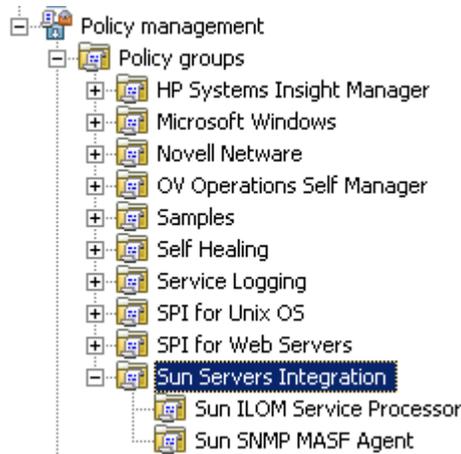
The Install Wizard adds two policy groups and their constituent policy files to your HP OVO for Windows management server:

- *Sun ILOM Service Processor*: This group of policy files supports Sun service processors.
 - SunSI-ILOM-HWTraps (for x64/ILOM and SPARC/ILOM)
 - SunSI-ILOM-PETTraps (x64/EmbeddedLOM)
- *Sun SNMP MASF Agent*: This group supports Solaris-based SPARC servers integrating with HP OVO for Windows at the operating system level.
 - SunSI-MASF-AgentStatus
 - SunSI-MASF-DeviceEvents
 - SunSI-MASF-AlarmEvents

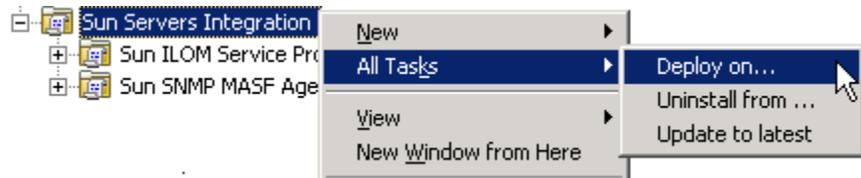
Before HP OVO for Windows can use any of the Sun-specific policy files to interpret SNMP traps received from Sun devices, they need to be deployed to the HP OVO for Windows management server.

To deploy Sun-specific policy files, do the following:

1. **Open the HP OVO for Windows Console.**
2. **Expand the Policy management – Policy groups tree in the Navigation pane.**

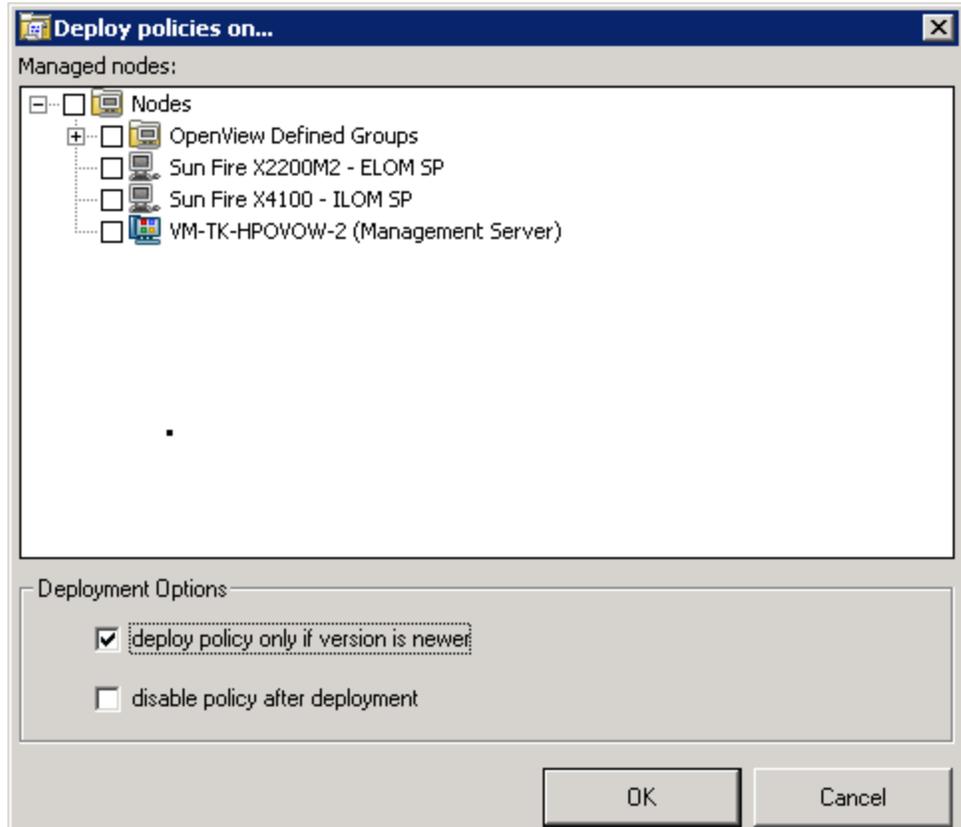


3. Right-click the Sun Servers Integration entry to display a context menu.



4. Choose All Tasks – Deploy on ... from that context menu.

HP OVO for Windows displays the Deploy policies on dialog box.



5. Check the name of the HP OVO for Windows management server and click OK to deploy the Sun-specific policies to the management server receiving SNMP traps from managed Sun devices.



Once you have deployed Sun-specific policy files to the HP OVO for Windows management server receiving SNMP traps from managed Sun devices, Sun-specific events will begin to appear in the HP OVO for Windows Management Console.

For more information on configuring Sun devices to send SNMP traps to the HP OVO for Windows management server, see the next chapter.

Configuring the HP OVO for Windows SNMP Agent to Receive SNMP v2 Traps

By default, the HP OVO for Windows SNMP Agent can intercept only SNMP v1 traps from SNMP devices. You can, optionally, configure the SNMP agent on your HP OVO for Windows management server to intercept SNMP v2 traps in addition to SNMP v1 traps.

To configure the HP OVO for Windows SNMP Agent to intercept SNMP v2 traps, consult the HP OVO for Windows help system and documentation.

Configuring Sun Devices to be Monitored by HP OVO for Windows

This chapter describes how to configure your Sun devices to be monitored by HP OVO for Windows.

A complete, current list of supported Sun servers, service processors, and service processor firmware is available at the following web site:

<http://www.sun.com/system-management/tools.jsp>

Please consult this web site before installing the Sun Servers Integration 1.0 for HP OVO for Windows.

Sun Device	Configuration Task(s)
SPARC/ALOM and SPARC/ILOM Servers	Configure the Sun SNMP Management Agent for Sun Fire and Netra Systems Note: You can monitor SPARC/ILOM servers at either the operating system level or at the service processor level. Configure the Sun SNMP Management Agent for Sun Fire and Netra Systems on your SPARC/ILOM servers only if you choose to monitor them at the operating system level.
SPARC/ILOM, x64/ILOM, and x64/EmbeddedLOM Service Processors	Enable and configure SNMP on the ILOM or Embedded LOM service processor

Configuring Sun Devices for Supported SNMP Traps

Before configuring SNMP on each monitored Sun device, decide whether you want to configure the SNMP Agent on your HP OVO for Windows management server to intercept SNMP v2 traps in addition to SNMP v1 traps (the default). See “Configuring the HP OVO for Windows SNMP Agent to Receive SNMP v2 Traps” in the previous chapter for details.

Configuring SPARC/ALOM and SPARC/ILOM Servers to Send SNMP Traps to HP OVO for Windows

To monitor supported SPARC servers at the operating system level in HP OVO for Windows, you must configure SNMP on those devices to send traps to the HP OVO for Windows management server.

SPARC Solaris SNMP Configuration

If you want HP OVO for Windows to use OS-based SNMP to monitor your SPARC Solaris servers, the Sun™ SNMP Management Agent for Sun Fire™ and Netra™ Systems (hereafter Hardware Management Agent) must be installed and configured on each of these SPARC Solaris nodes.

Installation

To evaluate SNMP system requirements for your SPARC Solaris server and to learn how to install the Hardware Management Agent on it, consult the following Sun manual:

- *Sun™ SNMP Management Agent Administration Guide for Sun Fire™ and Netra™ Servers* (Part Number 819-7978). You can download this manual from <http://docs.sun.com>.

Configuration

For integration between the Hardware Management Agent and HP OVO for Windows to work correctly, you must verify that the Hardware Management Agent configuration file on your managed SPARC Solaris nodes contains the following entries. To update that configuration file, do the following:

1. **On the managed server, open the following configuration file in a text editor:**

```
/etc/opt/SUNWmasf/conf/snmpd.conf
```

2. **Add an entry to specify whether you want to send SNMP v1 or SNMP v2 traps.**

SNMP format	Entry
v1	trapsink <destination_hostname>
v2c	trap2sink <destination_hostname>

where <destination_hostname> specifies the name or IP address of the destination server receiving the SNMP v1 (trapsink) or v2c (trap2sink) traps from the Hardware Management Agent.

Note: Adding both lines will result in the Hardware Management Agent sending HP OVO for Windows two traps for each alert and those redundant alerts appearing in the event console.

- (Optional and recommended) Uncomment (remove the # character) from the following line in the final section of the file.**

```
#####
# SECTION: Trap compatibility mode
.
.
SUNW_alwaysIncludeEntPhysName    yes
```

Enabling this mode for the Hardware Management Agent adds more detailed sensor and device names to traps and eliminates the need for generic messages for some sensors such as “A device has been disabled.”

- Save the modified file.**

For these changes to take effect, you must force the Hardware Management Agent to re-read the configuration file.

- Enter the following commands in a terminal window to force the Hardware Management Agent to re-read its configuration file.**

```
# ps -ef | grep SUNWmasf | grep -v grep
```

This command returns the process ID of the Hardware Management Agent daemon running on your SPARC Solaris system.

```
# kill -HUP <snmpd_pid>
```

where <snmpd_pid> is the process ID of the Hardware Management Agent obtained in the previous sub-step.

The Hardware Management Agent re-reads its configuration file automatically when it restarts.

Your managed SPARC Solaris servers are now ready to forward traps to HP OVO for Windows.

Configuring ILOM and Embedded LOM Service Processors to be Monitored by HP OVO for Windows

For a SPARC/ILOM, x64/ILOM, or x64/EmbeddedLOM service processor to be monitored by HP OVO for Windows, you must configure SNMP on it.

A complete, current list of supported Sun servers, service processors, and service processor firmware is available at the following web site:

<http://www.sun.com/system-management/tools.jsp>

Please consult this web site before installing the Sun Servers Integration 1.0 for HP OVO for Windows.

Sun Server	Configuration Tasks
SPARC/ILOM and x64/ILOM	Configure SNMP on your ILOM 2.0 service processor
x64/EmbeddedLOM	Configure SNMP on your Embedded LOM

Sun Server	Configuration Tasks
	service processor running firmware Version 2.91
	Configure SNMP on your Embedded LOM service processor running firmware Version 4.x

Configuring Sun ILOM 2.x Service Processors to be Monitored by HP OVO for Windows

To configure SNMP protocol settings on your Sun ILOM 2.x service processor, do the following:

1. **Launch the web GUI (ILOM) on the service processor to be configured and monitored.**
2. **Log in to the ILOM graphical interface as root.**
3. **Click the Configuration - Alert Management tab to display the Alert Settings screen.**



Alert Settings

This shows the table of configured alerts. To send a test alert to each of the configured alert destinations, click the *Send Test Alerts* button. IPMI Platform Event Traps (PETs), Email Alerts and SNMP Traps are supported. Select a radio button, then select Edit from the Actions drop down list to configure an alert. You can configure up to 15 alerts.

Send Test Alerts

Alerts

— Actions — ▾

<input type="checkbox"/>	Alert ID	Level	Alert Type	Destination Summary
<input type="radio"/>	1	minor	snmptrap	129.157.18.81, snmp v1, community 'public'
<input type="radio"/>	2	minor	snmptrap	129.157.18.82, snmp v2c, community 'public'
<input type="radio"/>	3	disable	ipmipet	0.0.0.0

4. **Click one of checkboxes for an entry that has no value for the Destination Summary field.**

Alerts				
— Actions — ▾				
	Alert ID	Level	Alert Type	Destination Summary
<input type="radio"/>	1	minor	snmptrap	129.157.18.81, snmp v1, community 'public'
<input type="radio"/>	2	minor	snmptrap	129.157.18.82, snmp v2c, community 'public'
<input checked="" type="radio"/>	3	disable	ipmipet	0.0.0.0

5. Click the Actions drop-down box and choose Edit.

Alerts				
— Actions — ▾				
— Actions — ▾				
Edit				
	Alert ID	Level	Alert Type	Destination Summary
<input type="radio"/>	1	minor	snmptrap	129.157.18.81, snmp v1, community 'public'
<input type="radio"/>	2	minor	snmptrap	129.157.18.82, snmp v2c, community 'public'
<input checked="" type="radio"/>	3	disable	ipmipet	0.0.0.0

ILOM 2.x displays the following screen.

Sun™ Integrated Lights Out Manager

To create or modify an Alert, select the alert level and type, then fill in the destination information for the alert type selected.

Level:

Type:

Fill in the IP address of the PET destination. Click Save to complete your action.

IP Address:

6. Set (or verify) the following configuration settings.

Field	Value
Level:	Minor (to view the maximum number of traps at all severity levels)

Field	Value
Type:	SNMP Trap (for the SUN-HW-TRAP-MIB) Note: Although ILOM 2.0 continues to support the SUN-ILOM-PET-EVENTS MIB, Sun strongly recommends configuring your service processors to use the more robust SUN-HW-TRAP-MIB MIB.
IP Address:	<i>IP_address_of_destination_server</i>
SNMP Version:	v1, v2c, or v3 (if supported) for your management configuration

7. Click the Save button to submit the change.

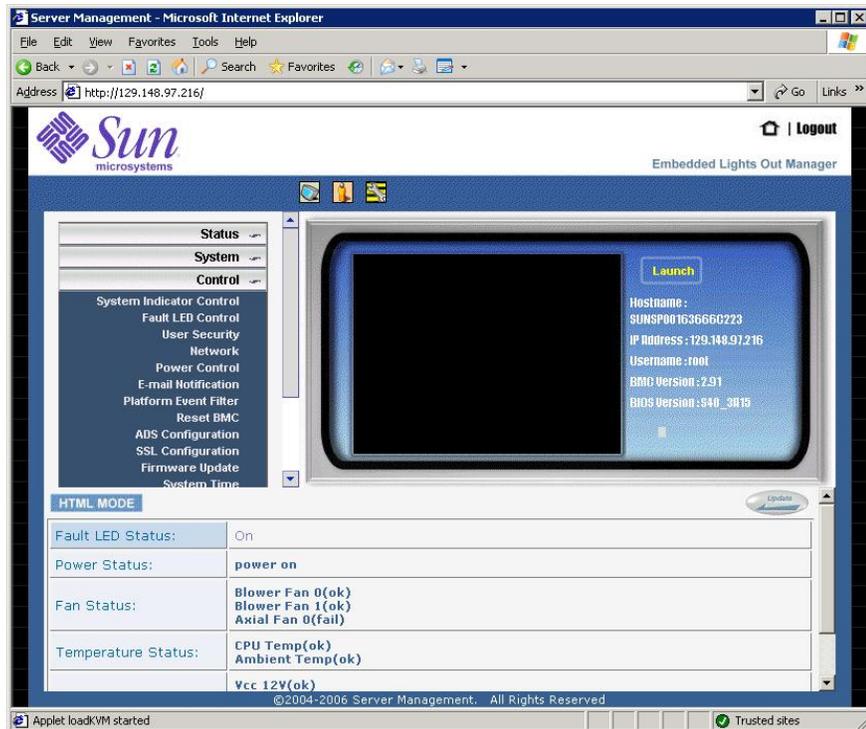
Tip: Verify that the information that you just entered in the dialog box appears in the updated Alert Management table.

Your Sun ILOM 2.x service processor is now configured to send SUN-HW-TRAP-MIB SNMP traps to all trap destinations.

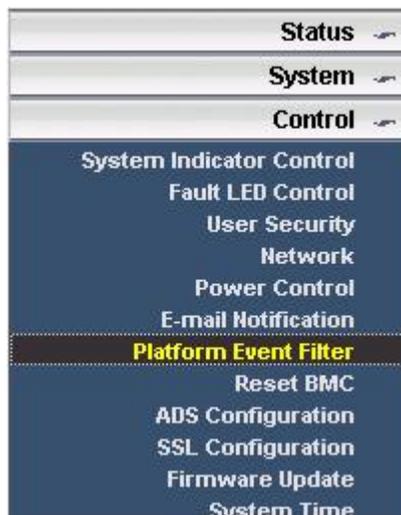
Configuring Sun Embedded LOM Version 2.91 Service Processors to be Monitored by HP OVO for Windows

To configure SNMP protocol settings on an Embedded LOM service processor, do the following:

1. Launch the Embedded LOM service processor web GUI (Server Management) on the service processor to be configured and managed.
2. Log in to the Server Management application as root.



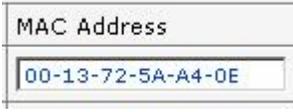
3. Click Control – Platform Event Filter in the menu pane.



The Embedded LOM GUI displays the Platform Event Filter form.

Platform Event Filter	
PEF Global Control :	<input checked="" type="radio"/> Enable PEF <input type="radio"/> Disable PEF
Community :	<input type="text" value="public"/>
Trap Receiver Destination Address	
IP Address	MAC Address
<input type="text" value="129.148.97.209"/>	<input type="text" value="00-13-72-5A-A4-0E"/>
<input type="text" value="129.148.97.117"/>	<input type="text" value="00-03-BA-F1-36-D8"/>

4. Verify or set the following settings:

Setting name	Setting value
PEF Global Control	Enable PEF is checked. 
IP Address	<i>IP_address</i> of the HP OVO for Windows management server, for example 129.148.97.209 
MAC Address	<i>Mac_address</i> of the HP OVO for Windows management server, for example 00-13-72-5A-A4-0E 

5. Scroll down to the next section of the form.

6. Set the options appropriate for your environment.

Note: The checkbox labeled Enable Send Alert Action must be checked.

PEF Action Global Control :	<input checked="" type="checkbox"/> Enable Power Off Action <input checked="" type="checkbox"/> Enable Power Cycle Action <input checked="" type="checkbox"/> Enable Power Reset Action <input checked="" type="checkbox"/> Enable Diagnostic Interrupt Action <input checked="" type="checkbox"/> Enable Send Alert Action <input checked="" type="checkbox"/> Enable Send Mail Action
-----------------------------	--

7. Click the Submit button to apply the settings.

8. Click SNMP - SNMP Settings in the menu pane.



9. Verify or enter the following settings:

Setting name	Setting value
Port	161 (the default)
v1 Protocol	Checked
v2 Protocol	Checked only if the v2 protocol is needed
v3 Protocol	Checked only if the v3 protocol is supported and needed

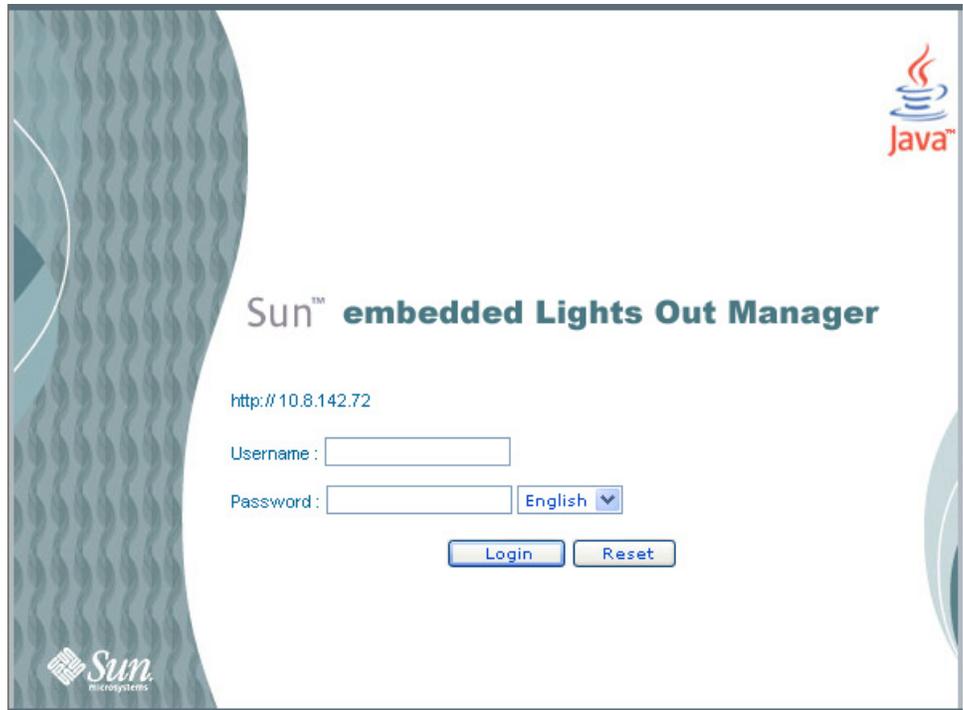
10. Click the Submit button to apply the settings.

Your Embedded LOM service processor is now configured to send IPMI PEs to all trap destinations listed.

Configuring Sun Embedded LOM Version 4.x Service Processors to be Monitored by HP OVO for Windows

To configure SNMP protocol settings on an Embedded LOM Version 4.x service processor, do the following:

- 1. Launch the Embedded LOM service processor web GUI (Server Management) on the service processor to be configured and managed.**
- 2. Log in to the Server Management application as root.**



3. Click Configuration - Platform Event Filter in the tabbed interface.

The Embedded LOM GUI displays the Platform Event Filter form.

Platform Event Filter	
PEF Global Control :	<input type="radio"/> Enable PEF <input checked="" type="radio"/> Disable PEF
Community :	<input type="text" value="public"/>
Trap Receiver Destination Address	
IP Address (Ex:192.168.1.33)	MAC Address (Ex:00-C0-9F-2A-65-AA)
<input type="text" value="129.148.97.117"/>	<input type="text" value="00-03-BA-F1-36-D8"/>
<input type="text" value="129.148.97.209"/>	<input type="text" value="FF-FF-FF-FF-FF-FF"/>
<input type="text" value="10.18.141.5"/>	<input type="text" value="FF-FF-FF-FF-FF-FF"/>
<input type="text" value="129.157.18.81"/>	<input type="text" value="00-14-4F-3A-59-72"/>

4. Verify or set the following settings:

Setting name	Setting value
PEF Global Control	Enable PEF is checked.

IP Address	<i>IP_address</i> of the server hosting HP OVO for Windows, for example 129.148.97.117 <input type="text" value="IP Address (Ex:192.168.1.33)"/> <input type="text" value="129.148.97.117"/>
MAC Address	<i>Mac_address</i> of the server hosting HP OVO for Windows, for example 00-03-BA-F1-36-D8 <input type="text" value="MAC Address (Ex:00-C0-9F-2A-65-AA)"/> <input type="text" value="00-03-BA-F1-36-D8"/>

5. Scroll down to the next section of the form.

6. Set the options appropriate for your environment.

Note: The checkbox labeled Enable Send Alert Action must be checked.

PEF Action Global Control :	<input type="checkbox"/> Enable Power Off Action <input type="checkbox"/> Enable Power Cycle Action <input type="checkbox"/> Enable Power Reset Action <input type="checkbox"/> Enable Diagnostic Interrupt Action <input checked="" type="checkbox"/> Enable Send Alert Action <input type="checkbox"/> Enable Send Mail Action
-----------------------------	---

7. Click the Submit button to apply the settings.

8. Click Configuration - SNMP - SNMP Settings in the tabbed interface.

SNMP SETTING	
Port	<input type="text" value="161"/>
Permit	<input checked="" type="checkbox"/> Set Requests <input checked="" type="checkbox"/> v1 Protocol <input checked="" type="checkbox"/> v2c Protocol <input type="checkbox"/> v3 Protocol
<input type="button" value="Submit"/> <input type="button" value="Reset"/>	

9. Verify or enter the following settings:

Setting name	Setting value
Port	161 (the default)
v1 Protocol	Checked

v2c Protocol	Checked only if the v2c protocol is needed
v3 Protocol	Checked only if the v3 protocol is supported for your management configuration

10. Click the **Submit** button to apply the settings.

Submit

Your Embedded LOM Version 4.x service processor is now configured to send IPMI PETs to all trap destinations listed.

Verifying Successful Configuration for HP OVO for Windows

To the extent that the Sun Servers Integration 1.0 for HP OVO for Windows employs a variety of system management technologies to monitor different types of Sun servers, there is no one procedure that exercises every interface on each managed system in order to verify that the entire integration has been installed and configured properly. If you are physically located with your managed systems, you could always manually remove and re-insert a non-critical component on one Sun server after another. See the topic “Verifying Configuration Manually” below for more information on manual verification. This manual procedure becomes impractical at large installations and impossible at remote locations. Performing remote verification is more convenient, but requires different procedures for OS-level or SP-level integrations and for different types of Sun servers (x64 or SPARC).

To determine which remote procedures are appropriate for your test plan and for the types of Sun servers supported by your management application, consult the following table.

CPU Type	SP Type	OS-level Procedure(s)	SP-level Procedure(s)
x64	ILOM	Not supported	See “Verifying Configuration Remotely Using IPMItool”
	Embedded LOM	Not supported	See “Verifying Configuration Remotely Using IPMItool”
SPARC	ILOM	See “Verifying Configuration Remotely Using <code>psradm</code> ”	See “Verifying Configuration Remotely Using IPMItool”
	ALOM	See “Verifying Configuration Remotely Using ALOM”	Not supported

The following sections describe how to perform each of these procedures.

Verifying Configuration Manually

If you are located physically near one or more of your Sun servers, you can always verify configuration by generating a physical event. The most reliable way to accomplish this is to remove and re-insert a non-critical component.

To test your configuration manually, do the following:

1. **Locate the Sun server or blade module in your data center.**
2. **Identify a component on that system that is non-critical and hot-pluggable (for example, a redundant power supply or fan tray).**

Note: Be certain that removal and re-insertion of this component will not affect the normal and routine operation of the server. Verify that the redundant component is, in fact, not critical to the current state of the system.

3. **Remove that non-critical component.**

Note: Be certain to follow all required software and firmware procedures required for the safe removal of any hot-pluggable component. Consult the Sun manual or online information system that ships with your Sun server for specific procedures related to removing that hot-pluggable component.

4. **After an appropriate amount of time, re-insert the non-critical component.**
5. **In the message or event console of your management package, verify that removing/re-inserting the non-critical component has generated one or more traps with the appropriate event summary and severity.**

If you do not see these traps in the console, review this manual for required configuration steps or consult the Troubleshooting section of this manual.

Verifying Configuration Remotely Using ALOM

To verify that a remote ALOM-based SPARC Solaris system is configured correctly, do the following:

1. **Identify the name and/or IP address of the ALOM-based SPARC Solaris server that you want to test.**
2. **Log in to the ALOM CMT command shell on that remote system via an Ethernet or serial connection.**
3. **Enter the following command to determine the current state of the system locator LED.**

```
sc> showlocator
```

ALOM returns one of the following messages:

- Locator led is ON
- Locator led is OFF

The following example assumes that the locator LED is currently OFF.

4. **Enter the following command to turn the locator LED on.**

```
sc> setlocator on
```

5. **In the message or event console of your management package, verify that it has received an event from ALOM indicating that the locator LED is on.**

6. Enter the following command to restore the locator LED to off.

```
sc> setlocator off
```

7. (Optional) In the message or event console of your management package, verify that it has received an event from ALOM indicating that the locator LED is off.

If you do not see these messages in the console, review this manual for required configuration steps or consult the Troubleshooting section of this manual.

Verifying Configuration Remotely Using IPMItool

Recent Sun servers support either an Integrated Lights Out Manager (ILOM) service processor (Sun Fire x64 servers, Sun SPARC Enterprise T5x20 servers) or an Embedded LOM service processor (Sun Fire x64 servers). You can communicate with these ILOM and Embedded LOM service processors via their IPMI interfaces to have them generate non-critical, simulated events. If HP OVO for Windows receives these non-critical, simulated events from ILOM or from Embedded LOM, it is configured properly for actual events.

IPMItool is an open-source utility for managing and configuring devices that support the Intelligent Platform Management Interface (IPMI) version 1.5 and version 2.0 specifications. Versions of IPMItool are available for the Solaris, Linux, and Windows operating systems.

Operating System	IPMItool Distribution(s)
Solaris	http://ipmitool.sourceforge.net/ Many software resource CDs distributed with Sun servers.
Linux	http://ipmitool.sourceforge.net/ Many software resource CDs distributed with Sun servers.
Windows	http://www.sun.com/system-management/tools.jsp Many software resource CDs distributed with Sun servers.

To verify that HP OVO for Windows is configured to receive traps from a Sun Fire x64 or a Sun SPARC Enterprise T5x20 server, do the following:

1. Collect the following information about the remote service processor that you want to test.

Field	Description
<SPname>	The name or IP address of the service processor Example: 192.168.1.1
<SPadminname>	The administrator login name for the service processor Example: root
<SPadminpassword>	The administrator password for the service processor

Field	Description
	Example: changeme

2. Open a command shell on the system that has IPMItool installed.
3. Enter the following IPMItool command to generate a list of all available sensors on that remote Sun server.

```
# ipmitool -U <SPadminname> -P <SPadminpassword> \
-H <SPname> -v sdr list
```

For example, to get the list of available sensors on a Sun SPARC Enterprise T5120 server at IP address 192.168.1.1 with ILOM SP login/password root/changeme, you would enter the following command:

```
# ipmitool -U root -P changeme -H 192.168.1.1 -v sdr list
```

4. In the output from IPMItool, identify the Sensor ID name of a sensor that has at least one entry in the Assertions Enabled or Deassertions Enabled fields.

In the following example, IPMItool returns the following information about the sensor named /MB/T_AMB.

```
Sensor ID           : /MB/T_AMB (0x9)
Entity ID          : 7.0 (System Board)
Sensor Type (Analog) : Temperature
. . .
Upper critical     : 55.000
. . .
Assertions Enabled : lnc- lcr- lnr- unc+ ucr+ unr+
Deassertions Enabled : lnc- lcr- lnr- unc+ ucr+ unr+
```

This sensor monitors ambient temperature on the motherboard of servers.

Note: Exercise caution in choosing a sensor to use for a simulated event. Simulating unrecoverably high or low temperature for some sensors may cause the server to shut down.

5. Enter the following IPMI command to generate a simulated event

```
# ipmitool -U <SPadminname> -P <SPadminpassword> \
-H <SPname> event <sensorname> <option>
```

For example, to generate a simulated event for exceeding the upper critical (ucr) ambient temperature on a Sun SPARC Enterprise T5120 server at IP address 192.168.1.1 with ILOM SP login/password root/changeme, you would enter the following command:

```
# ipmitool -U root -P changeme -H 192.168.1.1 \
event /MB/T_AMB ucr assert
```

In the command shell, IPMItool returns information like the following:

```
Finding sensor /MB/T_AMB ... ok
0 | Pre-Init Time-stamp | Temperature /MB/T_AMB | \
Upper Critical going high | Reading 56 > Threshold \
55 degrees C
```

6. In the message or event console of your management package, verify that it has received an event from ILOM or from Embedded LOM relevant to the sensor that you specified in your IPMItool command.

If you do not see these messages in the console, review this manual for required configuration steps or consult the Troubleshooting section of this manual.

7. (Recommended) Clear the simulated event with the following syntax:

```
# ipmitool -U <SPadminname> -P <SPadminpassword> \  
-H <SPname> event <sensorname> <option>
```

To clear (deassert) the simulated event in the previous example, enter the following command:

```
# ipmitool -U root -P changeme -H 192.168.1.1 \  
event /MB/T_AMB ucr deassert
```

If you do not see these messages in the console, review this manual for required configuration steps or consult the Troubleshooting section of this manual.

Verifying Configuration Remotely Using `psradm`

The Solaris utility `psradm(1M)` performs configuration on multiprocessor CPUs. When you use `psradm` to disable or to re-enable a CPU core, it generates a trap that should appear in the HP OVO for Windows event console. This procedure is appropriate if you are verifying configuration for a Sun SPARC Enterprise server supporting the ILOM service processor such as the SPARC Enterprise T5120 or T5220 server.

To use `psradm` to generate a trap for one of these supported systems, do the following:

- 1. Identify the name and/or IP address of the server that you want to test.**
- 2. Log in to that server as root or with administrator privileges.**
- 3. Enter the following command to disable a specific CPU core on that remote server.**

```
# psradm -f <CPU_Core_ID>
```

where `<CPU_Core_ID>` is the ID for one CPUcore. For example, to disable core 0 on a Sun SPARC Enterprise T5120, you would enter the following command:

```
# psradm -f 0
```

The trap generated by the T5120 should appear in the HP OVO for Windows event console in a format like the following:

```
CH/MB/CMP0/P0/CPU Device has been removed
```

- 4. (Recommended) Enter the following command to re-enable that same CPU core on that remote server.**

```
# psradm -n <CPU_Core_ID>
```

If you do not see these messages in the console, review this manual for required configuration steps or consult the Troubleshooting section of this manual.

Monitoring Sun Devices in HP OVO for Windows

Beyond the raw traps that HP OVO for Windows receives from Sun devices via SNMP, the Sun Servers Integration 1.0 for HP OVO for Windows adds value in two ways:

- It interprets the raw traps from each type of Sun device via the Sun-specific policies so the filtered messages appear in HP OVO for Windows Management Console with meaningful information about event sources, severity, and causes (Sun-specific product knowledge).
- It also provides a logic for automatically acknowledging warning and error messages received from the ILOM 2.x service processor or from the Sun SNMP Management Agent for Sun Fire and Netra Systems.

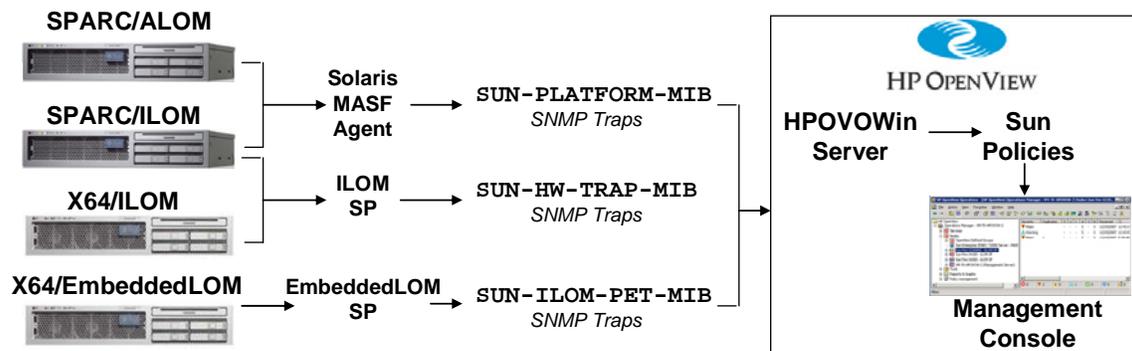
The Sun Servers Integration 1.0 for HP OVO for Windows does not provide custom reporting tools or views beyond those provided by HP OVO for Windows. The value-add with the Sun Servers Integration 1.0 for HP OVO for Windows is in the quality of the data that is being brought into the HP OVO for Windows environment.

This chapter focuses on one task:

- Interpreting Sun-specific messages in the HP OVO for Windows Management Console
-

Interpreting Sun-Specific Messages in HP OVO for Windows

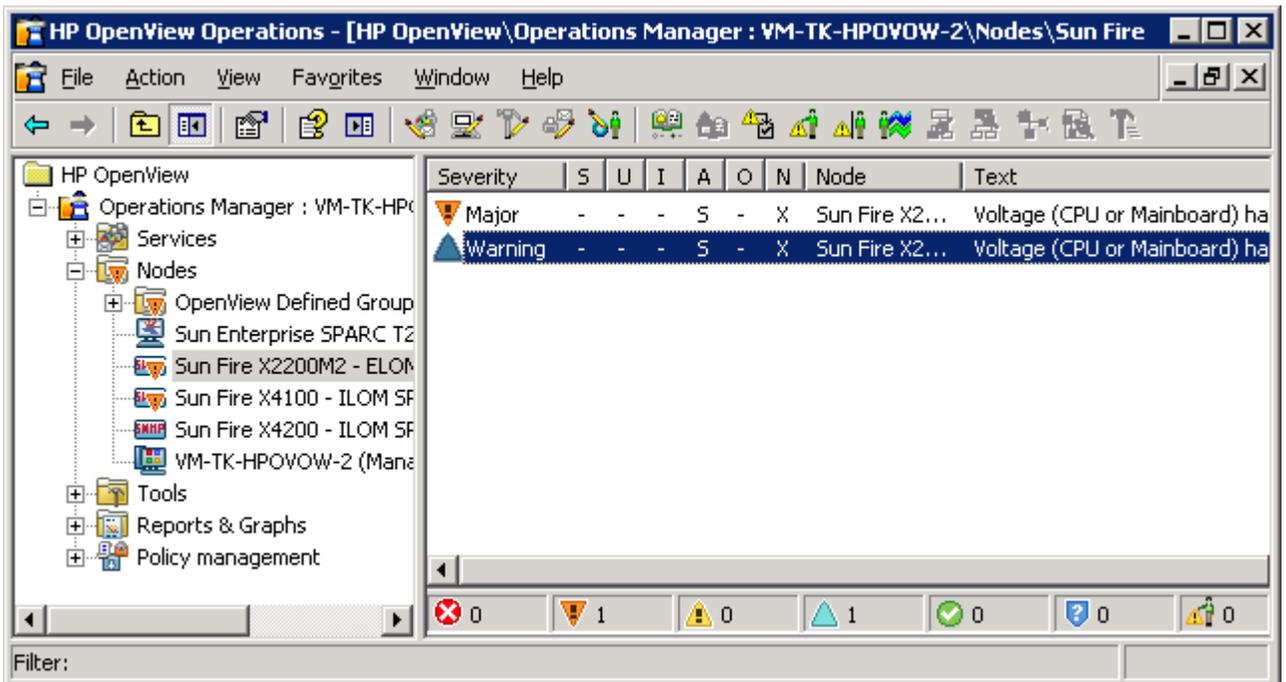
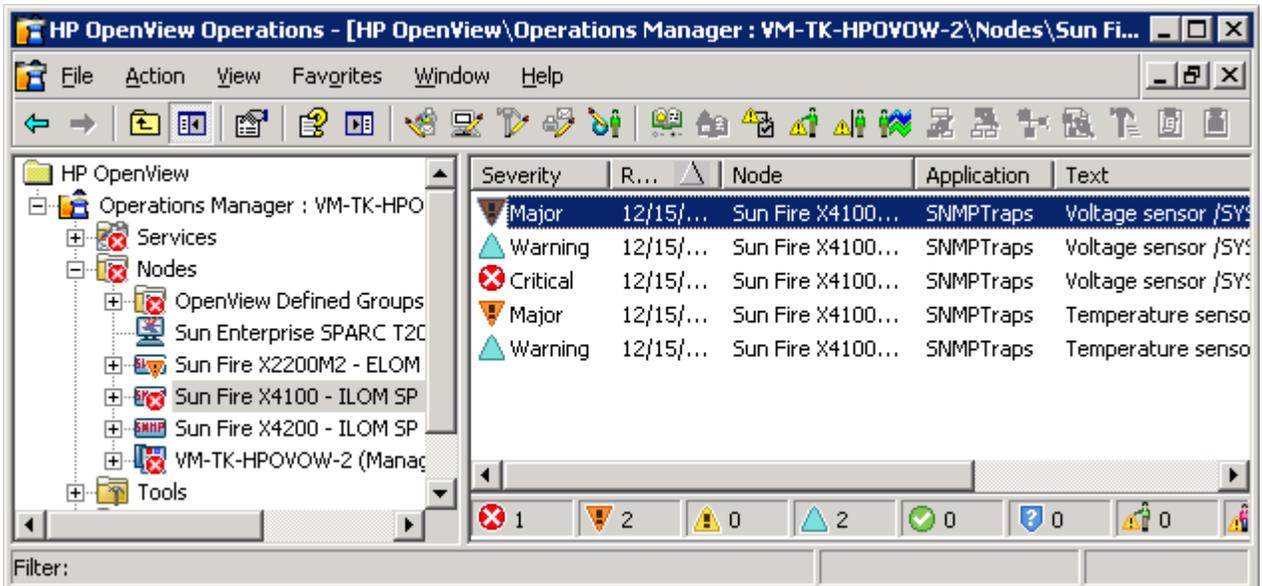
The Sun Servers Integration 1.0 for HP OVO for Windows relies on Sun-specific policies to interpret and prioritize raw SNMP traps sent to HP OVO for Windows from individual Sun devices.



SPARC/ALOM and SPARC/ILOM servers send HP OVO for Windows traps via the Sun SNMP Management Agent for Sun Fire and Netra Systems (MASF) installed on SPARC/Solaris servers. SPARC/ILOM, x64/ILOM, and x64/EmbeddedLOM servers send SNMP traps via their service processors. SPARC/ILOM servers can, therefore, send traps to HP OVO for Windows via the ILOM service processor or via the Sun SNMP Management Agent for Sun Fire and Netra Systems.

Viewing Messages in the Management Console

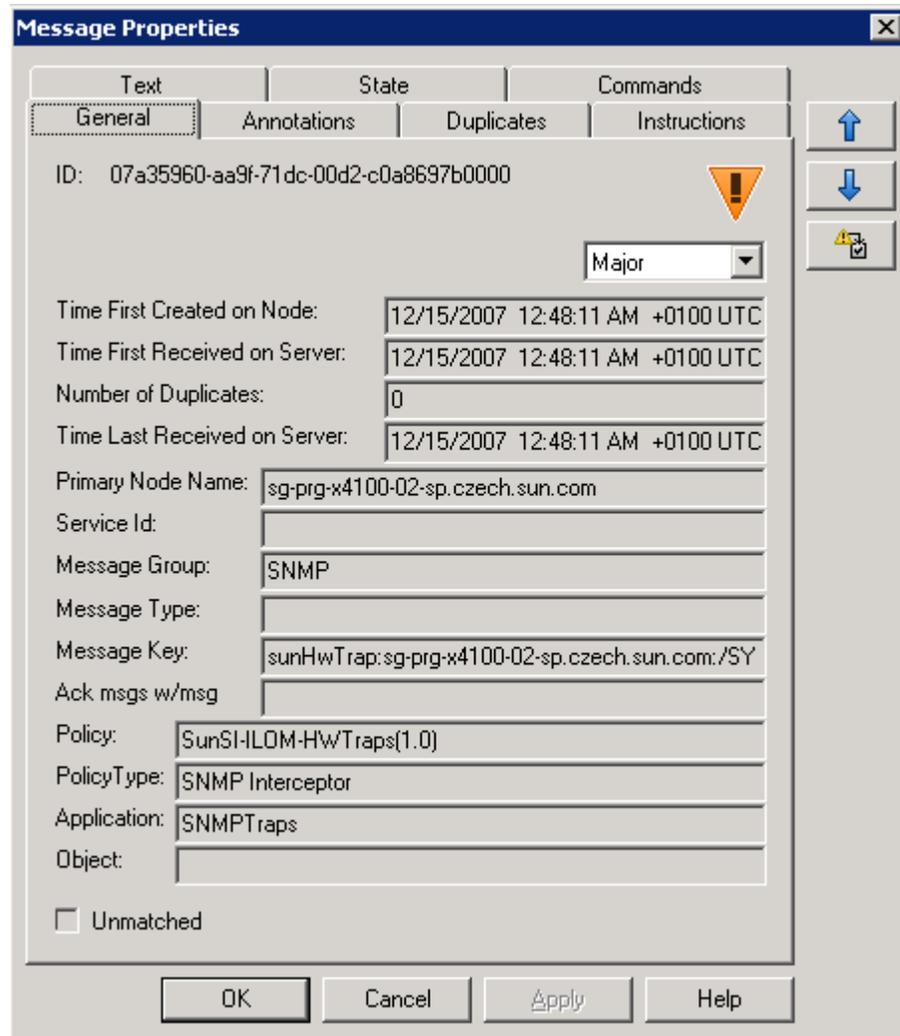
When the HP OVO for Windows Management Console receives a message that has been filtered by a Sun-specific policy file, it automatically categorizes that message. The most obvious category for incoming messages is by the managed node that forwarded the SNMP trap. The following screen shots depict the messages received from a Sun Fire X4100 ILOM service processor and a Sun Fire X2200 M2 Embedded LOM service processor.



Viewing Detailed Properties of Messages

To view detailed information about any message displayed in the Message Console, double-click it to display its multi-tabbed Message Properties sheet.

For example, the General tab in the Message Properties sheet displays basic information about the message, for example, the specific policy that interpreted it.



Interpreting Trap Sources

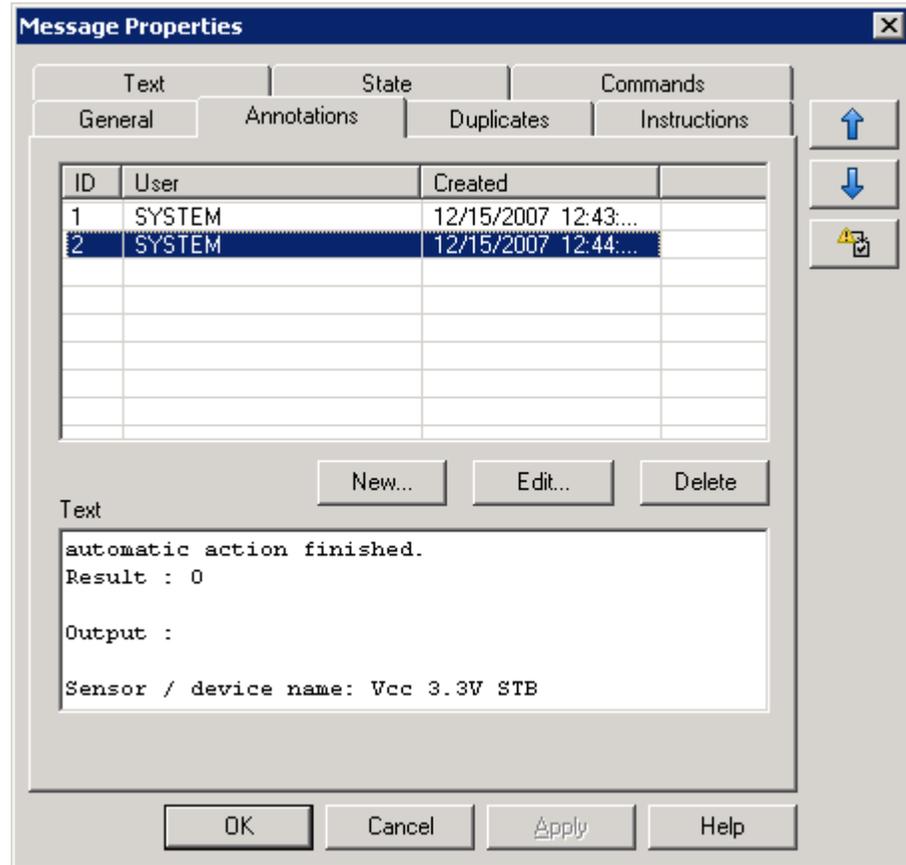
HP OVO for Windows uses several different policy files to interpret SNMP traps received from multiple trap sources.

Policy Name	Trap Source(s)
SunSI-ILOM-PETTraps	SNMP traps received from x64/EmbeddedLOM service processors
SunSI-MASF-AgentStatus SunSI-MASF-AlarmEvents SunSI-MASF-DeviceEvents	SNMP traps received from the Sun SNMP Management Agent for Sun Fire and Netra Systems installed on SPARC/ALOM and SPARC/ILOM servers
SunSI-ILOM-HWTraps	SNMP traps received from SPARC/ILOM and x64/ILOM service processors

The SunSI-ILOM-PETTraps policy is atypical. When some condition contained within the SunSI-ILOM-PETTrap policy matches the incoming SNMP trap, an automatic action is initiated to obtain the sensor name. This automatic action runs the

parsePET.vbs script on the HP OVO for Windows management server and the output of this script is appended to a generic message as an annotation. Hence, you see only generic messages are provided and the sensor name can be found as an annotation.

There is no automatic acknowledgment of messages based on this policy (i.e. no message acknowledgment for ELOM SP servers). The only exception is the test PET trap, where only the message “Test Trap Received” is produced without the execution of the PET parsing script.



Interpreting Message Severities

The HP OVO for Windows Management Console uses the following color-coded icons to represent the severity of the message as interpreted by the Sun-specific policies.

Icon	Severity
	Critical
	Major
	Minor
	Warning
	Normal

These messages, as interpreted by the Sun-specific policy files and displayed by the HP OVO for Windows Management Console, provide a useful view of the overall status on one or all of your managed Sun devices.

Uninstalling the Sun Servers Integration 1.0 for HP OVO for Windows

To uninstall the Sun Servers Integration 1.0 for HP OVO for Windows, you must perform two tasks:

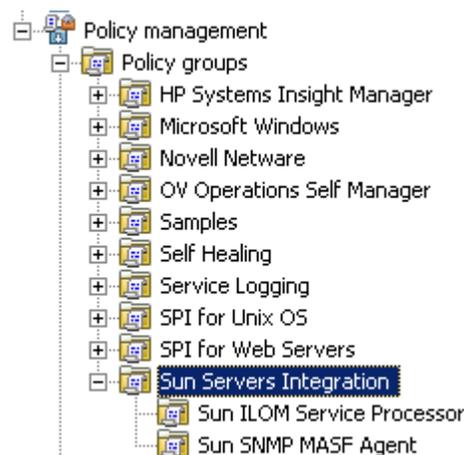
- Unregister and delete the Sun-specific policies from your HP OVO for Windows configuration.
- Uninstall the Sun Servers Integration 1.0 for HP OVO for Windows files from your management server.

This chapter addresses each of these tasks.

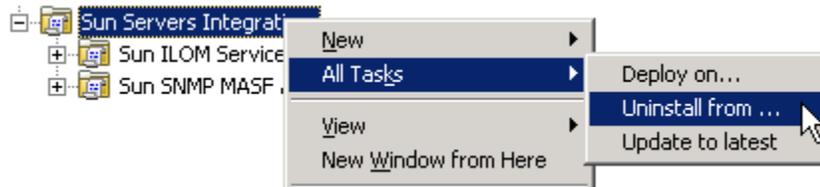
Unregistering and Deleting Sun-Specific Policies from HP OVO for Windows

To unregister and delete Sun-specific policies, do the following:

1. Open the HP OVO for Windows Management Console.
2. Expand the Policy management – Policy groups entry in the Navigation pane.

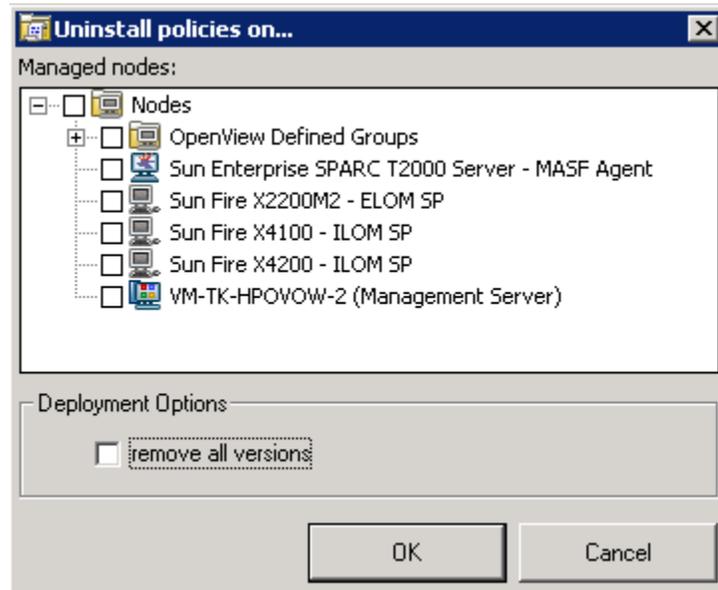


3. Right-click the Sun Servers Integration entry to display a context menu.

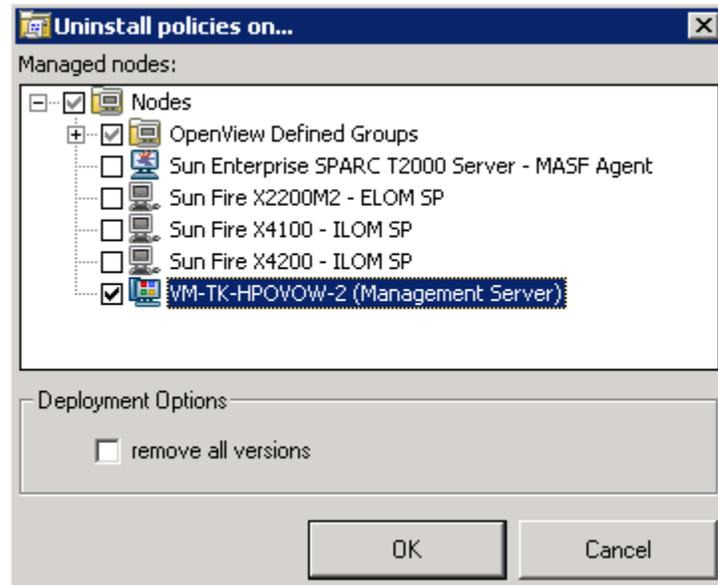


4. Choose All Tasks – Uninstall from ... in that context menu.

HP OVO for Windows displays the Uninstall policies on dialog box.

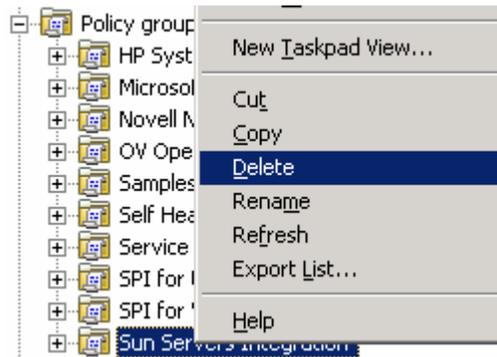


5. Check the name of the HP OVO for Windows management server and click OK.



Sun-specific policies have now been unregistered from your HP OVO for Windows configuration.

6. From the HP OVO for Windows Management Console, right-click the Sun Servers Integration policy group and choose Delete from the context menu.



HP OVO for Windows displays the following message box.



7. Click Yes to confirm deletion of the policy group hierarchy.

The policy hierarchy associated with the Sun Servers Integration 1.0 for HP OVO for Windows has now been deleted from your HP OVO for Windows configuration.

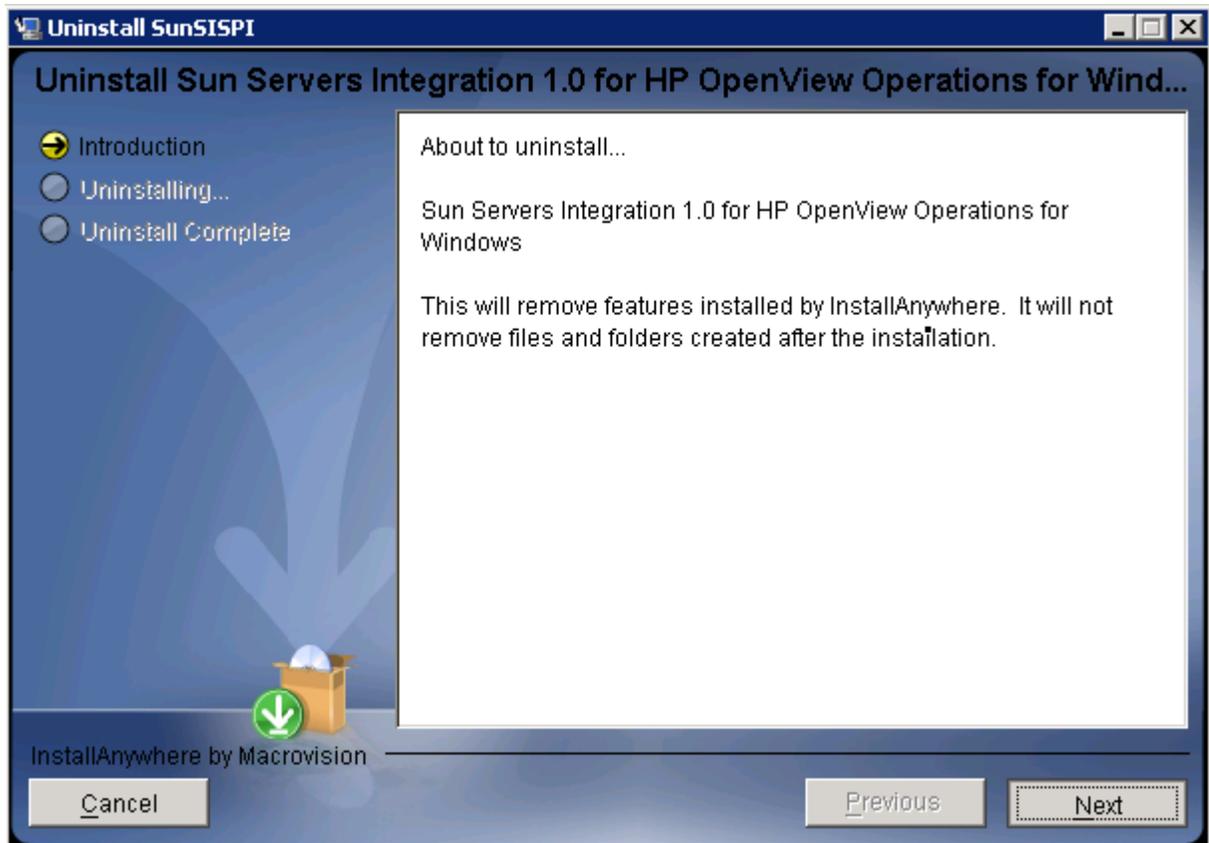
Uninstalling the Sun Servers Integration 1.0 for HP OVO for Windows

Once you have unregistered and deleted Sun-specific policies from your HP OVO for Windows configuration, you can uninstall the Sun Servers Integration 1.0 for HP OVO for Windows files from your management server.

To uninstall the Sun Servers Integration 1.0 for HP OVO for Windows in Windows, do the following:

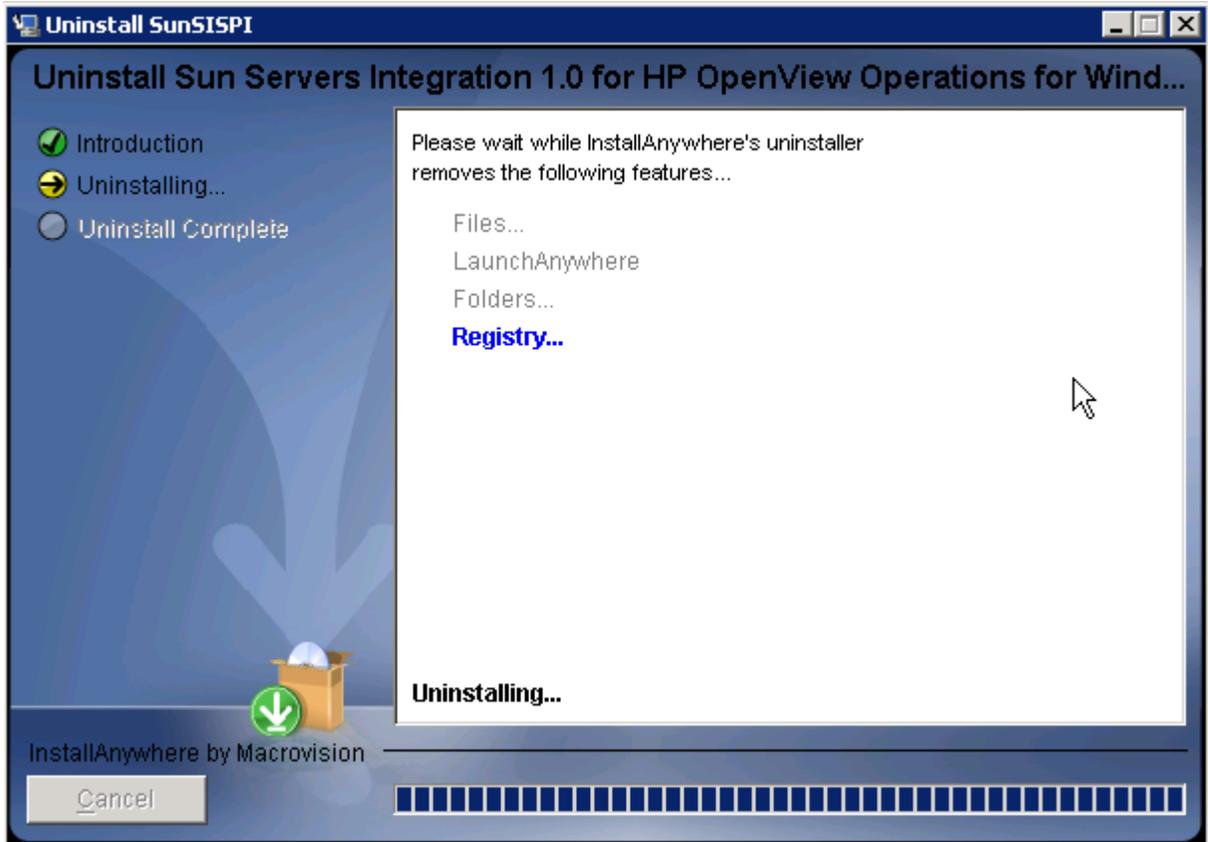
1. Open a Windows Explorer window.
2. Navigate to the directory on the management server into which you have installed the Sun Servers Integration 1.0 for HP OVO for Windows files.
3. In the subdirectory named `Uninstall SunSISPI`, double-click the executable named `Uninstall SunSISPI.exe` to launch the Uninstall Wizard.

The Uninstall Wizard displays the following screen.



4. **Click the Next button to proceed with uninstalling the Sun Servers Integration 1.0 for HP OVO for Windows.**

The Uninstall Wizard provides updates as it removes the Sun Servers Integration 1.0 for HP OVO for Windows files from the management server.



The Uninstall Wizard deletes from your HP OVO for Windows management server all Sun-specific files and registry entries created during the installation process.

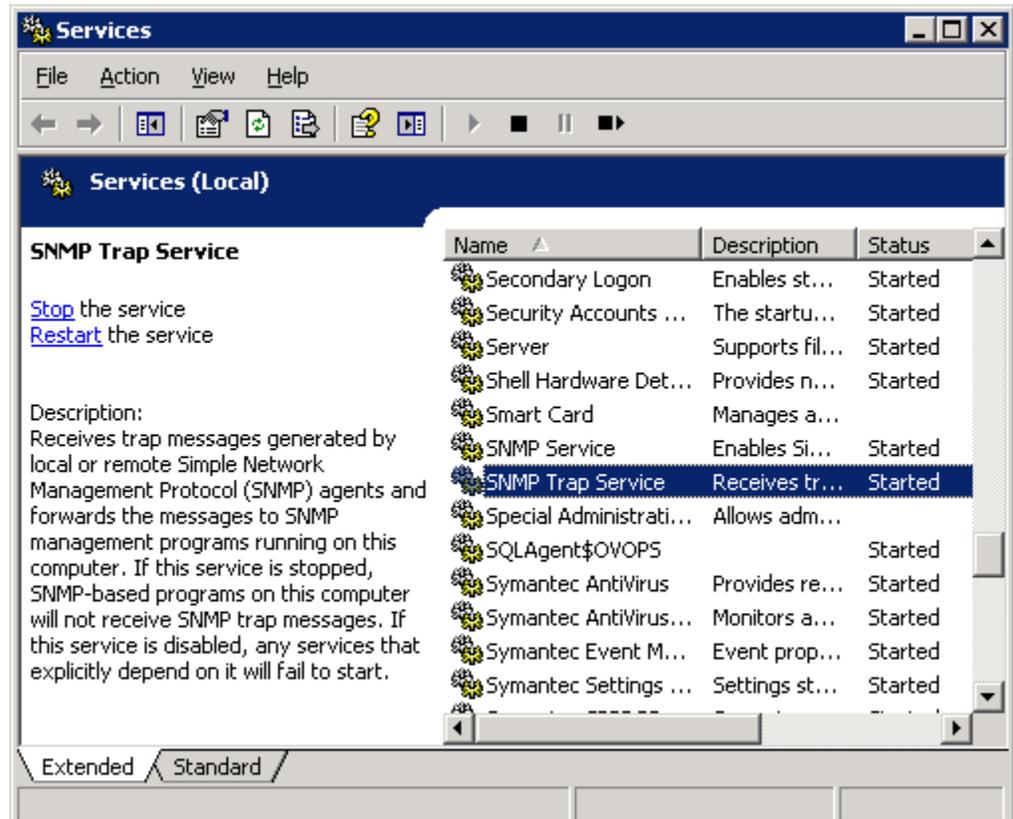
Troubleshooting

If your configuration does not work, consider the following troubleshooting tips.

The Windows SNMP Trap Service Must Be Installed and Started

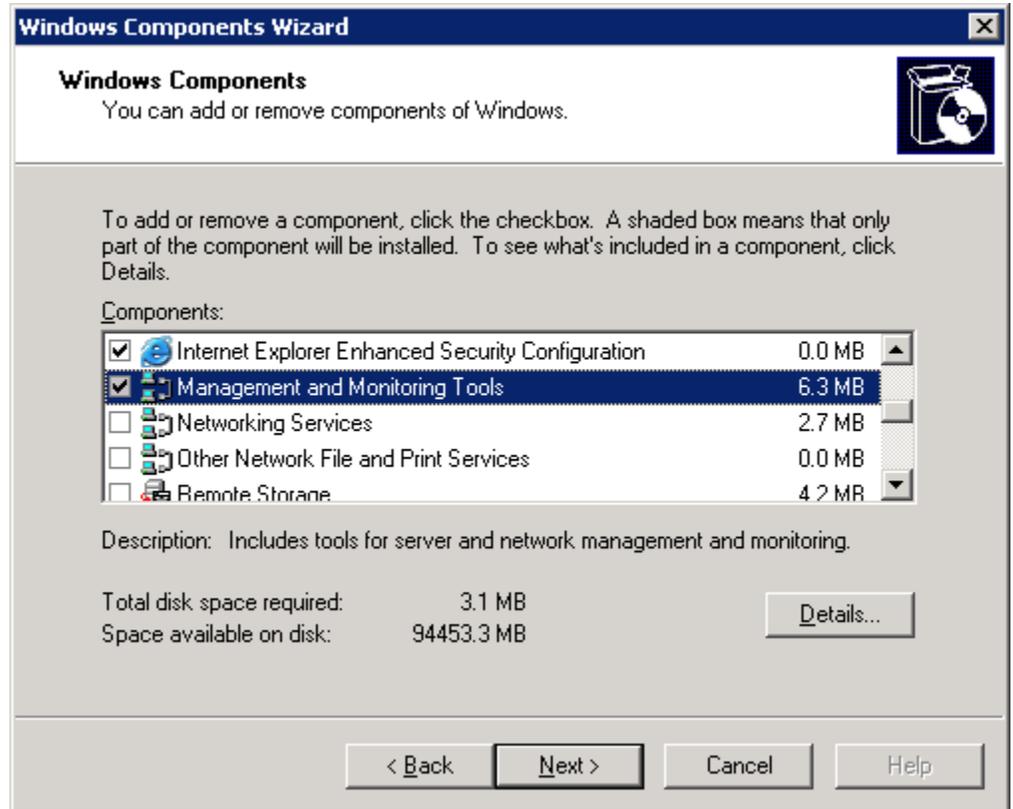
The SNMP Trap Service must be started and running on the HP OVOW MGMT server. To determine whether it is running, do the following:

1. **From the Windows Desktop on your HP OVO for Windows management server, choose Start – Control Panel – Administrative Tools -- Services.**
2. **Verify that the service named SNMP Trap Service is listed (installed) and has the status of Started.**

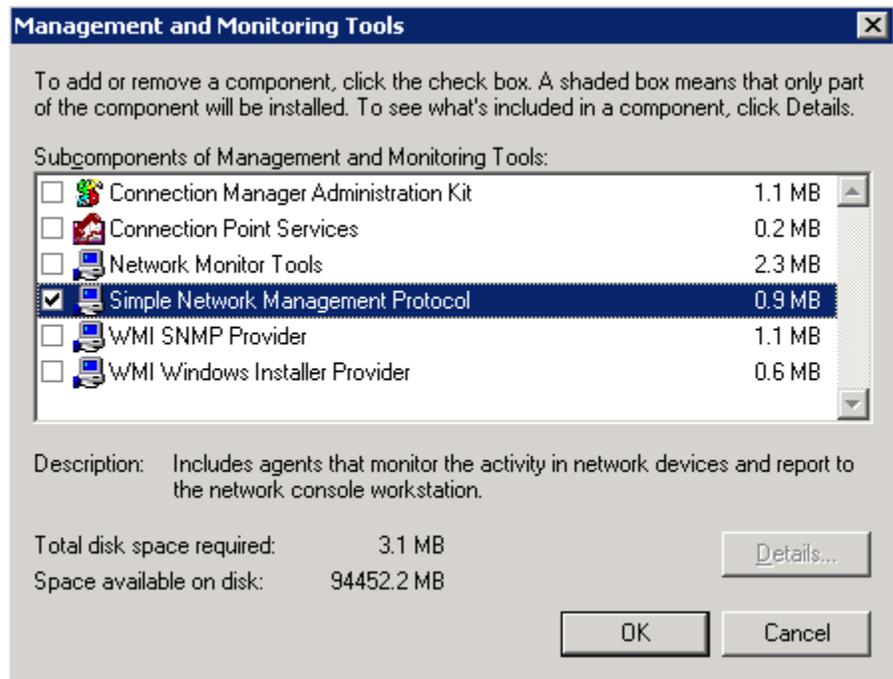


3. (If necessary) If the SNMP Trap Service is not listed (installed), choose Start – Control Panel – Add or Remove Programs – Add/Remove Windows Components.

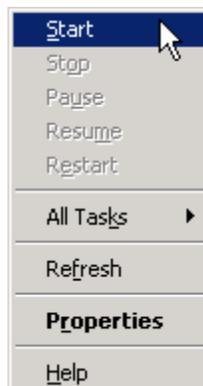
Windows displays the following dialog box.



4. (If necessary) Choose Management and Monitoring Tools – Details to display the following dialog box.



5. (If necessary) Check the entry named Simple Network Management Protocol and click the OK button to install the SNMP Trap Service.
6. (If necessary) If the SNMP Trap Service is installed, but is not started, right-click the SNMP Trap Service entry and choose Start for the context menu.



Server Firewall Settings Must Be Configured Properly

The firewall running on your HP OVO for Windows management server must be configured to allow incoming SNMP traps using the UDP protocol on port 162.

Installed Files

The Install Wizard copies Sun-specific files to the following high-level directories.

Directory	Default Path
<HPOVO_InstallDir>	C:\Program Files\HP OpenView
<SunSISPI_InstallDir>	<HPOVO_InstallDir>\install\SunSISPI

<HPOVO_InstallDir> specifies the base directory for the HP OVO for Windows application and <SunSISPI_InstallDir> specifies the base directory into which you installed the Sun Servers Integration 1.0 for HP OVO for Windows.

File Type	Installed Files
Policy files	<SunSISPI_InstallDir>\policies\config.mm
	<SunSISPI_InstallDir>\policies\SunSI-ILOM-HWTraps
	<SunSISPI_InstallDir>\policies\SunSI-ILOM-PETTraps
	<SunSISPI_InstallDir>\policies\SunSI-MASF-AgentStatus
	<SunSISPI_InstallDir>\policies\SunSI-MASF-AlarmEvents
	<SunSISPI_InstallDir>\policies\SunSI-MASF-DeviceEvents
PET traps parsing script	<HPOVO_InstallDir>\bin\SunSISPI\parsePET.vbs
Installation log file	<HPOVO_InstallDir>\Data\HPOVOInstall\SunSISPI_install.log
Uninstall files	<SunSISPI_InstallDir>\Uninstall SunSISPI

The Install Wizard also created the following Windows Registry keys:

- HKEY_LOCAL_MACHINE\SOFTWARE\Hewlett-Packard\OpenView\SunSISPI\Name
- HKEY_LOCAL_MACHINE\SOFTWARE\Hewlett-Packard\OpenView\SunSISPI\Version
- HKEY_LOCAL_MACHINE\SOFTWARE\Hewlett-Packard\OpenView\SunSISPI\Path

Sun System Management MIBs

Many Sun system management integration packages depend on the SNMP protocol and use one or more of the following Sun SNMP MIBs:

- **ENTITY-MIB:** This MIB is used by all SNMP agents to monitor and to describe the physical and logical elements of a managed system. The operation of this MIB is described in the Sun publication *Sun SNMP Management Agent Administration Guide for Sun Blade, Sun Fire and Netra Servers* (819-7978).

Filename: ENTITY-MIB.mib

Note: The ENTITY-MIB is not used with integrations based exclusively on SNMP traps. The Sun Servers Integration 1.0 for HP OpenView Operations for Windows is such an integration.

- **SUN-PLATFORM-MIB:** This MIB is used by Solaris-based servers to extend the ENTITY-MIB Physical Entity Table to represent new classes of component and the Logical Entity Table to represent high value platform and server objects. This MIB supplies the Sun™ SNMP Management Agent for Sun Fire™ and Netra™ Systems with traps. The operation of this MIB is described in the Sun publication *Sun SNMP Management Agent Administration Guide for Sun Blade, Sun Fire and Netra Servers* (819-7978).

Filename: SUN-PLATFORM-MIB.mib

- **SUN-ILOM-PET-MIB:** This MIB enables management platforms that are not IPMI compliant to partly decode standard IPMI Platform Event Traps (PETS) generated by the ILOM v1.x and Embedded LOM service processors.

Filename: SUN-ILOM-PET-MIB.mib

- **SUN-HW-TRAP-MIB:** This MIB replaces and enhances the SUN-ILOM-PET MIB for ILOM 2.x systems.

Filename: SUN-HW-TRAP-MIB.mib

To view a summary of the entries in these MIBs or to download them, consult the following Sun web site:

<http://www.sun.com/system-management/tools.jsp>

Glossary

This appendix provides terminology for both HP OVO for Windows and Sun system management technologies.

HP OVO for Windows Terminology

The following terminology references system management technologies specific to HP OVO for Windows.

Acronym	Term	Definition
	message browser	The console within which active and acknowledged messages are displayed.
MMC	Microsoft Management Console	MMC is a framework that hosts snap-ins such as administrative tools used to administer networks, nodes, services, and other system components. MMC does not perform administrative functions. It hosts programs, called snap-ins, that do.
	policy	A set of one or more specifications and/or rules that helps automate network and service administration, and provide consistent, automated administration across the network.
	policy group	A collection of HP OpenView Operations for Windows policies.
	SNMP Interceptor policy type	This policy type monitors Simple Network Management Protocol events, and responds when a character pattern that you choose is found in an SNMP message.

Sun System Management Terminology

The following terminology references Sun-specific system management technologies.

Acronym	Term	Definition
ALOM	Advanced Lights Out Manager	Sun Advanced Lights Out Manager (ALOM) consists of service processor hardware and firmware that supports the remote monitoring of Sun SPARC servers.
	Embedded Lights Out Manager	Sun Embedded Lights Out Manager consists of service processor hardware and firmware that supports the remote monitoring and management of Sun servers through IPMI and SNMP interfaces.
ILOM	Integrated Lights Out Manager	Sun ILOM consists of service processor hardware and firmware that supports the remote monitoring and management of Sun servers through IPMI and SNMP interfaces.
MASF	Sun SNMP Management Agent	The Sun MASF agent provides SNMP integration between Sun SPARC-based servers and management hosts.

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