Oracle® Hardware Management Pack Installation Guide

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Oracle Hardware Management Pack Installation Guide

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Using This Documentation

This section describes product information, documentation and feedback, and a document change history.

Documentation and Feedback

The following documentation is available related to the Oracle Hardware Management Pack.

Documentation	Link
All Oracle products	https://docs.oracle.com
Oracle Hardware Management Pack	http://www.oracle.com/goto/ohmp/docs
Oracle ILOM	http://www.oracle.com/goto/ilom/docs

Provide feedback on this documentation at:

http://www.oracle.com/goto/docfeedback

Support and Training

These web sites provide additional resources:

- Support: https://support.oracle.com
- Training: http://education.oracle.com

Contributing Authors

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Change History

The following changes have been made to the documentation set.

- May 2014. Initial publication.
- June 2014. Updated *Release Notes* to add issue 18866436. Updated the Hardware Management Agent overview description in the *Installation Guide* and *Management Agents User's Guide*. Updated the *CLI User's Guide* to add a procedure on checking the Host-to-ILOM Interconnect connection.
- August 2014. Added a note regarding Oracle Solaris 11.2 integration. Updated the *CLI User's Guide* to make editorial improvements. Updated the *Installation Guide* to document an installation issue and updated the *Management Agents User's Guide* to make minor technical updates.
- September/October 2014. Updated the *Installation Guide* and *Release Notes* to add support for Oracle Linux Fault Management Architecture (FMA) software.
- November 2014. Updated the *CLI User's Guide* and *Release Notes* to include NVMe controller support and additional Oracle Hardware Management Pack 2.3.1 updates.
- January 2015. Updated the *Release Notes* to include Oracle Hardware Management Pack 2.3.1.1 updates (issue fixes only, no new features).
- June 2015. Updated the *Release Notes* to include Oracle Hardware Management Pack 2.3.2.2 updates. Updated the *CLI User's Guide* to add error codes for the `ubiosconfig` command and added information on updating firmware on QLogic and Emulex fiber channel controllers. Updated the *Installation Guide*, *Management Agents User's Guide* and *CLI User's Guide* to make editorial improvements and other minor technical updates.
- July 2015. Updated *Release Notes* for minor editorial change. Updated the *Management Agents User's Guide* add additional information on Sun Storage 6 Gb SAS PCIe HBA disk events. Other minor editorlal updates made to library.
- September 2015. Updated *Release Notes* to include Oracle Hardware Management Pack 2.3.3 updates. Updated the *Installation Guide* and *Linux FMA User's Guide* to add information on disabling EDAC. Updated *CLI User's Guide* to describe manual power cycle requirement for remote service processor firmware updates. Updated *Management Agents User's Guide* snmpwalk and set examples. Other minor editorial updates made to library.
- November 2015. Updated *Release Notes* to include Oracle Hardware Management Pack 2.3.4 updates.

- December 2015. Updated the *Release Notes* to add information about feature releases and bug fixes per release. Updated the *CLI User's Guide* to add nvmeadm error codes. Updated the *Command Quick Reference* to add note about Oracle ILOM local host credential cache support.

- January 2016. Updated the *Release Notes* to include Oracle Hardware Management Pack 2.3.5 updates. Updated the *Installation Guide* to document for Linux FMA installation with Oracle Linux 7.

- February 2016. Updated the *Release Notes* for bugs 22673965 and 22667196. Updated the *Installation Guide* for bug 22673965.

- April 2016. Updated the *Release Notes* to list support for X6 series systems.

- May 2016. Updated the *Release Notes*, *Installation Guide* and *Management Agents User's Guide* for bug 23299302.

- July 2016. Updated the *Release Notes* to include Oracle Hardware Management Pack 2.3.6 updates. Updated the *CLI User's Guide* and *Command Quick Reference* to add firmware-check command and check subcommand for fwupdate. Updated the *Installation Guide* for Oracle Hardware Management Pack OS dependencies.

- December 2016. Updated the *Installation Guide* to specifically identify USB-to-Ethernet driver required for Oracle Solaris 10/09 and to correct installer command information.

Oracle Hardware Management Pack Installation Guide Overview

This guide provides instructions for installing Oracle Hardware Management Pack (HMP).

This documentation applies to servers running the Oracle Solaris 11.1 operating system (OS) and earlier **or** any other supported OS.

Beginning with Oracle Solaris 11.2, Oracle HMP is an integrated component of the OS and is called Oracle HMP for Oracle Solaris.

- On systems with the Oracle Solaris 11.2 OS or later, do **not** download and use any version of Oracle HMP that is not specifically qualified for the Oracle Solaris 11.2 (and later) OS. For details, see `http://www.oracle.com/goto/ohmp/solarisdocs`.
- On systems with Oracle Solaris 11.1 or earlier, or with any other OX, continue to use Oracle HMP, available as a separate download from `http://support.oracle.com`.

The following table shows the content of this document.

Description	Link
Introduction to the Oracle HMP	"Introduction to the Oracle Hardware Management Pack" on page 15
Enable the Host-to-ILOM Interconnect	"Enabling the Host-to-ILOM Interconnect" on page 21
Install the Oracle HMP components using the Oracle Hardware Management Installer	"Installing Components Using the Oracle Hardware Management Pack Installer" on page 25
Install Oracle HMP components using OS-specific commands.	"Installing Components Manually" on page 63
Install drivers necessary to enable Oracle HMP components.	"Installing Drivers Manually" on page 89

Introduction to the Oracle Hardware Management Pack

Oracle Hardware Management Pack (HMP) provides components that you install on your servers and use to manage and configure those servers. It includes:

Tool	Documentation	Description
Command line tools	*Oracle Server CLI Tools User's Guide*	Upgrade your server components' firmware. Configure BIOS, UEFI BIOS, RAID volumes and the Oracle Integrated Lights Out Manager (ILOM) service processors (SP) on your servers. View hardware configuration information and the status of your Oracle servers. Configure an ILOM trap proxy that forwards Simple Network Management Protocol (SNMP) traps from your Oracle ILOM SP over the Host-to-ILOM Interconnect. Configure zoning on supported servers running the Oracle Solaris operating system (OS).
Management agents	*Oracle Server Management Agents User's Guide*	Provide information about storage and domains to Oracle ILOM. Enable in-band monitoring of your Oracle hardware at the OS level over SNMP. You can use this information to integrate your Oracle servers into your data center management infrastructure.
Watchdog Timer	*Oracle Server Management Agents User's Guide*	Monitor the host and the SP and reset either if it becomes unresponsive.
IPMI	IPMItool and IPMIevd man pages	Access server SPs and perform management tasks using the IPMI protocol.
Fault monitoring in Linux systems	*Oracle Linux Fault Management Architecture Software User's Guide*	Manage faults on servers running Oracle Linux 6.5 and above using an agent and a command-line tool..

The following sections provide an overview of the Oracle Hardware Management Pack features:

Oracle Server Management Agents

Oracle Server Management Agents provide information about storage and domains to Oracle ILOM and enable in-band monitoring of your Oracle hardware at the OS level over SNMP. You can use this information to integrate your Oracle servers into your data center management infrastructure.

Oracle Server Management Agents include:

- Oracle Server Hardware Management Agent
- Oracle Server Hardware SNMP Plugins
- The `itpconfig` tool that enables you to configure a trap proxy to send traps between Oracle ILOM and the host server over the Host-to-ILOM Interconnect

The following sections describe these parts. For more information, see *Oracle Server Management Agents User's Guide* .

Oracle Server Hardware Management Agent

The Oracle Server Hardware Management Agent (Hardware Management Agent) and associated Oracle Server Hardware SNMP Plugins (Hardware SNMP Plugins) enable you to monitor and manage your server and server module hardware from the OS. In addition, the Hardware Management agent gathers host storage information and provides it to Oracle ILOM.

This in-band functionality enables you to use a single IP address (the host's IP) for monitoring your servers and blade server modules without having to connect the management port of the Oracle Integrated Lights Out Manager (ILOM) SP to the network.

The Hardware Management Agent and Hardware SNMP Plugins run on the host operating system of your Oracle servers, communicating with the Oracle ILOM SP. The Hardware

Management Agent daemon, called `hwmgmtd`, regularly polls the SP for information about the current state of the server. Hardware Management Agent can poll the SP for hardware information over either the Host-to-ILOM Interconnect, available on Oracle's latest servers, or keyboard controller-style (KCS) interface on previous generation servers. This information is then made available by Hardware Management Agent over SNMP using the Hardware SNMP Plugins.

Note - In previous versions of Hardware Management Pack (before version 2.3.0.0), the agent read the service processor's System Event Log (SEL) records, logged new events to syslog and generated SNMP traps using the host SNMP daemon.

In 2.3.0.0, SEL monitoring was removed from `hwmgmtd`. No traps or syslogs are generated by `hwmgmtd` for anything that appears in the SEL. The Hardware Management Agent still generates traps for sensor based issues such as voltage, presence, and temperature.

To log SEL events in the host syslog and generate the corresponding traps, use the `ipmievd` daemon, which is available as part of ipmitool with Oracle Hardware Management Pack. You can also use the Oracle ILOM Trap Proxy (`itpconfig`) to forward Oracle ILOM-generated SNMP traps over the Host-to-ILOM interconnect to a configurable destination.

Deploying Hardware Management Agent on Oracle VM for SPARC

When using the Hardware Management Agent on a SPARC server running Oracle VM which has multiple logical domains set up, the Hardware Management Agent can be installed on each logical domain. This enables you to monitor storage devices found in the logical domain using the Hardware Management Agent in a primary domain.

When installing into such a configuration, Hardware Management Agent requires direct access to the hardware that you want to monitor. Oracle VM for SPARC defines an Input / Output (I/O) domain as a domain that has direct ownership and access to the physical devices. Running Hardware Management Agent on a non-I/O domain host does not provide any physical device information because it does not have access to physical I/O devices. As a result, Hardware Management Agent installation is recommended on a I/O Domain or a Control domain. A Control domain is an I/O Domain by default in Oracle VM for SPARC.

Oracle Server Hardware SNMP Plugins

The Oracle Server Hardware SNMP Plugins consists of OS-native SNMP plugins and hardware-specific Management Information Base (MIB) files which have been designed to enable you to monitor your Oracle servers effectively using SNMP.

The sunHwMonMIB describes the state of sensors and alarms on your servers and provides the following information:

- Overall system alarm status
- Aggregate alarm status by device type
- FRU Alarm status
- Lists of sensors, sensor types, sensor readings, and sensor thresholds
- Indicator states
- System locator control
- Inventory including basic manufacturing information
- Product and chassis inventory information (such as serial number and part numbers)
- Per-sensor alarm status

The sunHwTrapMIB describes a set of traps for hardware events that can be generated by an Oracle server and provides the following information:

- Conditions affecting the environmental state of the server (such as temperature, voltage, and current out-of-range conditions)
- Error conditions affecting the hardware components in the server, such as FRU insertion and removal and security intrusion notification

The sunStorageMIB provides the following information about system storage:

- Basic manufacturing information, properties, and alarm status for controllers
- Properties and alarm status for disks
- Properties and alarm status for RAID volumes
- Status of logical components

itpconfig and the ILOM Trap Proxy

The `itpconfig` command-line interface (CLI) tool configures Oracle ILOM to forward SNMP traps to the host over the Host-to-ILOM Interconnect, available on servers with the necessary

hardware. See your server documentation to check if your server supports Host-to-ILOM Interconnect. You can also use `itpconfig` to configure the Host-to-ILOM Interconnect between Oracle ILOM SP and the host.

Oracle Server CLI Tools

Oracle Server CLI Tools (CLI Tools) are command-line interface tools that you can use to configure Oracle servers. CLI Tools consists of the following:

- `biosconfig` – enables you to configure your server's BIOS settings, found on the previous generation of servers.
- `fwupdate` – enables you to upgrade the firmware of your server components.
- `hwmgmtcli` – enables you to view hardware configuration information and the status of your Oracle servers.
- `ilomconfig` – enables you to configure Oracle ILOM Host Watchdogs, and can also configure Host-to-ILOM Interconnect settings.
- `nvmeadm` – enables you to view information on and configure NVM express controllers and their storage devices.
- `raidconfig` – enables you to configure RAID volumes on your servers.
- `ubiosconfig` – enables you to configure your server's UEFI BIOS, found on the latest Oracle servers.
- `zoningcli` – enables you to configure the Oracle SPARC T3-1 platform with the 16-disk backplane (SAS-2 expander) running Oracle Solaris OS into two separate zones.

For more information, see *Oracle Server CLI Tools User's Guide*

Host and ILOM Watchdogs

The host and ILOM watchdogs enable you to monitor the host server and the ILOM SP to ensure that they are operating correctly. In the eventuality that either the host or the ILOM SP encounters a problem, you can configure the watchdog to either trigger a warning message or restart the host or ILOM SP.

Oracle Linux Fault Management Architecture

You can use the Oracle Linux Fault Management Architecture (FMA) software to manage server faults from the host OS in much the same way you manage faults in the Oracle ILOM fault management shell. In addition, CPU and memory faults processed by the Oracle Linux mcelog are included in a common fault management database. As a result, it provides a similar set of fault management commands to view and act on faults whether from the host OS or Oracle ILOM. For more information on Oracle Linux FMA, see *Oracle Linux Fault Management Architecture Software User's Guide* .

Host-to-ILOM Interconnect

Host-to-ILOM Interconnect provides a high speed internal interconnect between the Oracle ILOM SP and the host server. It is supported by Management Pack version 2.1 onwards.

For more information, see .

IPMItool

IPMItool is a command-line application run on the host which enables you to manage and configure devices that support the IPMI protocol, such as Oracle ILOM. A version of IPMItool is provided as part of the Hardware Management Pack. It can be installed if your system does not already have IPMItool installed.

For information about using the IPMItool command, refer to the command line help and the man page.

IPMIflash

IPMIflash is a command-line application that provides an alternative method to update Oracle ILOM SP firmware and BIOS remotely over the management network or locally from the server. A version of IPMIflash is provided as part of the Hardware Management Pack. It can be installed if your system does not already have IPMIflash installed. This utility is available for Oracle Solaris, Linux based and Windows operating systems. For more information on IPMIflash, refer to the man page.

Enabling the Host-to-ILOM Interconnect

As of Oracle ILOM 3.0.12, a communication channel known as the Host-to-ILOM Interconnect allows you to communicate locally with Oracle ILOM from the host operating system (OS) without the use of a network management connection (NET MGT) to the server. The Host-to-ILOM Interconnect, which is available on the latest Oracle servers, can be used to perform the following Oracle ILOM tasks locally:

- All server management functions in Oracle ILOM that you typically perform from the command line, web, or IPMI interfaces through the network management (NET MGT) port on the server.
- All data transfers, such as firmware upgrades, to Oracle ILOM that you typically perform from the host over a Keyboard Controller Style (KCS) interface using IPMI flash tools. For these types of data transfers, the Host-to-ILOM Interconnect provides a more reliable and faster data transfer rate than traditional KCS interfaces.
- All future server monitoring and fault detection operations that you typically perform from the host OS through the use of Oracle enabled software tools and agents installed on the server.

Note - The Oracle Hardware Management Pack (HMP) refers to this feature as Host-to-ILOM Interconnect. The Oracle ILOM interface refers to this feature as Local Host Interconnect.

▼ Configure ILOM for Host-to-ILOM Interconnect

Check that the Host-to-ILOM interconnect on the service processor (SP) and set to true for "hostmanaged" (this is the default).

1. **Log into Oracle ILOM command line interface by typing the command:**

   `ssh root@`*sp_ip_address*

   where *sp_ip_address* represents the IP address of the SP for the server.

2. **Check the status of the interconnect by typing the command:**

    `show /SP/network/interconnect`

    You should see output similar to:

    ```
    -> show

     /SP/network/interconnect
        Targets:

        Properties:
            hostmanaged = true
            type = USB Ethernet
            ipaddress = 169.254.182.76
            ipnetmask = 255.255.255.0
            spmacaddress = 02:21:28:57:47:16
            hostmacaddress = 02:21:28:57:47:17

        Commands:
            cd
            set
            show

    ->
    ```

3. **If the interconnect is not set to "`hostmanaged = true`" reset it using the Oracle ILOM `set` command. Type the commands:**

    `cd /SP/network/interconnect`

    `set hostmanaged=true`

4. **Log out when you are finished.**

See Also   For more information, refer to the Oracle Integrated Lights Out Manager Documentation Collection at: http://www.oracle.com/goto/ILOM/docs

Platform Server Support and ILOM Access Through the Host-to-ILOM Interconnect

Oracle servers supporting the Host-to-ILOM Interconnect are supplied with an internal LAN-over-USB device installed.

The Host-to-ILOM Interconnect provides two network connection points known as the Oracle ILOM SP (SP) connection point and the host OS (OS) connection point. These must each have a non-routable IPv4 address for the Host-to-ILOM Interconnect to work. Non-routable IPv4 addresses are considered secured private addresses that prevent external internet users from navigating to your system.

Note - By default, Oracle provides non-routable IPv4 addresses for each connection point (Oracle ILOM SP and host OS). Oracle recommends not changing these addresses unless a conflict exists in your network environment with the provided non-routable IPv4 addresses.

Host-to-ILOM Interconnect Configuration Options

You can choose to either have the Host-to-ILOM Interconnect automatically configured for you or manually configured. Details about both of these configuration options are provided below.

- **Automatic Configuration (Recommended)**

  For Oracle HMP 2.1 (or later) to automatically configure the Host-to-ILOM Interconnect connection points, the Local Interconnect settings in Oracle ILOM must be in the Host Managed state. In order to automatically configure the Host-to-ILOM Interconnect connection points, you must:

  1. Accept the default settings provided in Oracle ILOM for Local Host Interconnect before installing Oracle HMP.
  2. Install Oracle HMP 2.1 or later on the server and accept the installation defaults provided for Host-to-ILOM Interconnect.

- **Manual Configuration (Advanced users only)**

  If you prefer not to automatically configure the Host-to-ILOM Interconnect, you can manually configure the connection points on the Oracle ILOM SP and host OS. In order to manually configure the Host-to-ILOM Interconnect connection points, you must:

  - Ensure your OS recognizes the internal LAN-over-USB device, which requires an Ethernet driver. For instructions on installing the driver, see "Installing the Host-to-ILOM Interconnect Driver" on page 92.
  - You must manually configure an IPv4 address for the connection points. There are two ways to do this:
    - Use the `itpconfig` tool or the `ilomconfig` tool to configure the Host-to-ILOM Interconnect connection points on the Oracle ILOM SP and the host OS.
    - Use the Oracle ILOM interface to configure the connection point in the Oracle ILOM SP and separately configure the host side connection point.

For more information, refer to the Oracle Integrated Lights Out Manager Documentation Collection at: `http://www.oracle.com/goto/ILOM/docs`

Installing Components Using the Oracle Hardware Management Pack Installer

This section describes how to install and uninstall Hardware Management Pack components on an Oracle server using the supplied Oracle Hardware Management Pack Installer. This section contains the following:

Getting Started

The following methods are available for installing the Hardware Management Pack components:

- GUI mode
- Console mode
- Silent mode

Regardless of the installation method you choose, you must be logged on with administrative privileges, such as root on the Oracle Solaris operating system (OS) or a Linux based OS and Administrator on Microsoft Windows.

Getting the Software

Before you start, check that your target server and OS are supported. For more information on the supported servers, see:

http://www.oracle.com/goto/ohmp

The following procedure explains how to use My Oracle Support to download server firmware and software.

▼ Download Firmware and Software Using My Oracle Support

1. **Navigate to the following site:**
   http://support.oracle.com

2. **Sign in to My Oracle Support.**

3. **At the top of the page, click the Patches and Updates tab.**
   The Patches and Updates screen appears.

4. **In the Search screen, click Product or Family (Advanced Search).**
   The screen appears with search fields.

5. **In the Product is field, type a full or partial product name. Select the product of interest when it appears in the list.**

   - **To search for the latest Hardware Management Pack, type Hardware Management Pack.**

   - **To search for firmware for a specific server, type the product name, for example Sun Server X2–8.**

6. **In the Release field, select a software release from the drop-down list.**
   Expand the folders to see all available software releases.

7. **Click Search.**
   The software release comprises a set of downloads (patches).

8. **To select a patch, click the check box next to the patch name (you can select more than one patch).**
   A popup action panel appears. The panel contains several action options.

9. **To download the patch, click Download in the popup panel.**
   The download begins automatically.

Prerequisites

- The Oracle Hardware Management Pack installer cannot be used for upgrading older versions of Oracle Hardware Management Pack. If you have previous versions of Hardware Management Pack or Component Manager installed, you must remove these before installing the new Oracle Hardware Management Pack components. For more information, refer to the documentation supplied with the version of Hardware Management Pack you have installed.

  When installing Oracle Hardware Management Pack components manually, you can upgrade existing packages with the newer version of those packages.

- Different Hardware Management Pack components are supported by different servers and operating systems, so ensure that your target platform is supported by all of the components you intend to install. Before proceeding make sure that you have consulted the support matrix for the version that you plan to install. The support matrix is available at:

  http://www.oracle.com/goto/ohmp

- Depending on the target server's OS, you should note the following:

  - Oracle Solaris 11 OS - Setup the Oracle Solaris repository if you have not yet done so. Setting up the repository will allow the Oracle Hardware Management Pack installation program to obtain any required OS packages not already installed. For example, if you are using the Oracle repository, enter the following command:

    `pkg set-publisher -g http://pkg.oracle.com/solaris/release`

    If you are using a local repository, specify the appropriate URI as described in the Oracle Solaris 11 documentation.

  - Oracle Solaris 10/11 OS - For the Oracle Server Hardware SNMP Plugins to function correctly, you must have System Management Agent (SMA). SMA is installed by default on Oracle Solaris OS. For more information about SMA, see `snmpd`(1M). When installing Hardware Management Pack components, you must be in the global zone, and Hardware Management Pack can only be installed on the global zone. The device `/dev/bmc` must be present on your system for the Hardware Management Agent to function correctly.

  - Linux OS - For the Oracle Server Hardware SNMP Plugins to function correctly, you must have Net-SNMP installed. For more information about Net-SNMP, see the `snmpd` documentation. The device `/dev/ipmi#` (where # is a digit) must be present on your system for the Hardware Management Agent to function correctly. You must also ensure that the IPMI interface between the Oracle server service processor (SP) and host OS is enabled, and that the IPMI service is started. When using the Hardware Management Agent, you must ensure the root user has read/write access to the IPMI device in order for the Hardware Management Agent to function correctly.

- Windows OS - For the Oracle Server Hardware SNMP Plugins to function correctly, you must have an IPMI device installed and the SNMP service enabled. For more information about the IPMI devices available for your version of Windows, see your Windows product documentation.

Installation Issues

Review the following topics before performing the Hardware Management Pack installation.

Note - There might be additional installation issues in the Oracle Hardware Management Pack Release Notes. Review the Release Notes, along with the following issues, before installing Hardware Management Pack.

Check the State of Modules If Your System Is Running Oracle Linux Fault Management Software On Oracle Linux

If Oracle Linux Fault Management (FMA) software is not working correctly, check that the following modules and services are in the correct state:

Oracle Linux Version	Service or Module	Required State
Oracle Linux 6.5 or later and 7.0 or later	IPMI service	Installed and running
Oracle Linux 6.5 or later and 7.0 or later	dmidecode	Installed and available
Oracle Linux 6.5 or later	EDAC module	Disabled
Oracle Linux 6.5 or later	mcelog service	Installed and running
Oracle Linux 7.0 or later	mcelog service	Installed and running in daemon mode only

To check the following services and modules, see "Install the Required Linux Components Before Installing Oracle Linux FMA Software" on page 74.

Unix Installer Issue (CR 6977584)

The installer aborts when the DISPLAY variable is set on a server running Oracle Solaris OS or Linux OS. To avoid this issue, unset the DISPLAY variable before installing Hardware Management Pack.

Error Reported When Launching Installer on a Solaris System (6982393)

When launching the Oracle Hardware Management Pack Installer on a Oracle Solaris OS system, the following error might appear:

```
./install.bin: !: not found
```

You can ignore this error and the Installer should launch normally.

Running Installer on Solaris With SUNWCreq Cluster Fails (6982718)

Before installing Oracle Hardware Management Pack on a server running Oracle Solaris OS installed with the SUNWCreq (Core System Support) metacluster, you must install SUNWxcu4 (contains POSIX `df` command) or set the following environment variable:

```
IATEMPDIR=$HOME
```

Sun Fire X4170 M2 Requires Tools and Driver Installation for Correct ICH10 Slot Information (6992155)

For a Sun Fire X4170 M2 system running Windows Server 2008 R2, install the drivers from the X4170 M2 Tools and Drivers CD before using the RAIDconfig tool. Failure to install the drivers might result in the slot information for the HDDs attached to the internal ICH10 controller to be reported incorrectly.

You can also use the Oracle Hardware Installation Assistant to install Windows Server 2008 R2 to avoid this problem.

Oracle Solaris OS Servers with SUNWipmi Installed Cannot Complete the Install (7070692)

On Oracle Solaris OS 10 servers with SUNWipmi installed, the Hardware Management Pack cannot be successfully installed. The only workaround is to stop the current install

using **control-c**, remove the installed version of SUNWipmi, and then restart the Hardware Management Pack installation.

Unable to Launch Installer in GUI Mode on Oracle Linux 6 (7129501)

When using the GUI mode Oracle Hardware Management Pack installer on Oracle Linux 6, the graphical installer can not be started. This is because the `libXtst.i686` package is not installed by default. Either install this package before using the GUI mode, or use the console mode.

Installing the QLogic Support on Linux Takes a Long Time (7115215)

If you choose to install the QLogic support on Linux using the Oracle Hardware Management Pack installer, the process can take a long time. To make this process more efficient, install the QLogic package manually.

Error returned as Available space in Summary Screen (15820240)

During the install process, the summary screen might display

```
Disk Space Information (for Installation Target):
   Required:  169,082,111 bytes
   Available: Error!
```

This can be safely ignored.

Host-to-ILOM Interconnect Feature Might be Left in a Disabled State When Solaris Automated Installer is Used (18696723)

When using the Solaris Automated Installer (introduced with Solaris 11) to deploy software on a server, the server's Host-to-ILOM interconnect feature (required for many Oracle

Hardware Management Pack features) might be left in a disabled state after the Automated Installer performs a reboot during installation. If this happens, a second server reboot after the installation has completed should fix the problem.

To determine if your server was setup by the Automated Installer, type the following command:

```
# netadm list | grep ncp
ncp         Automatic    online      <-- Automated Installer was used
ncp         DefaultFixed disabled
```

Oracle Linux FMA Installation Can Fail When Using Either Anaconda or Oracle System Assistant to Install the OS (19182604)

Installation of Oracle Linux FMA software can fail when using the Linux Anaconda installer or the Oracle System Assistant assisted OS installation (which calls the Anaconda installer). The OS installation will complete successfully and the software will be installed; however, after installation and server reboot, the required Oracle Linux FMA services will not be automatically started. Consequently, none of the Oracle Linux FMA fault events will be recorded or observed on the host.

If this happens, perform the following procedure.

Note - This procedure only needs to be performed once and does not need to be repeated on subsequent reboots.

---

1. Complete the OS installation process, ignoring any Oracle Linux FMA software install failure messages.

2. After the system reboots, login as root and make a directory for the man pages.

   # mkdir -p /usr/local/share/man/man1m

3. Create soft links to the installed man pages.

   # ln -s -t /usr/local/share/man/man1m /opt/fma/share/man/man1m/fmadm.1m /opt/fma/ share/man/man1m/fmdump.1m /opt/fma/share/man/man1m/fmd.1m /opt/fma/share/man/man1m/ intro.1m

4. Enable the appropriate services.

   # chkconfig --add ksyseventd.init

   # chkconfig --add fmd.init

5. Then, start the services.

```
# service ksyseventd.init start
# service fmd.init start
```

6. Use the fmadm config command to ensure that all Oracle Linux FMA software components are installed and ready.

    For example:

    ```
    [root@testserver16 ~]# fmadm config

    MODULE               VERSION STATUS   DESCRIPTION
    ext-event-transport   0.2    active   External FM event transport
    fmd-self-diagnosis    1.0    active   Fault Manager Self-Diagnosis
    ip-transport          1.1    active   IP Transport Agent
    mce                   1.0    active   Machine Check Translator
    sysevent-transport    1.0    active   SysEvent Transport Agent
    syslog-msgs           1.1    active   Syslog Messaging Agent
    ```

Defaults for mcelog in Oracle Linux 7 Prevent Oracle Linux FMA From Working Properly (19731891)

For Oracle Linux FMA to work properly with Oracle Linux 7, the mcelog service must be running in daemon mode only. However, by default, the mcelog service in Oracle Linux 7 runs with arguments: --ignorenodev --daemon --foreground. Therefore, before installing Oracle Linux FMA 2.3.1 on a system with Oracle Linux 7 you need to reconfigure the mcelog service.

1. Ensure the mcelog service is installed and running by typing the command:

    `systemctl status mcelog`

    If mcelog is not installed, you will see:

    ```
    [root@testserver16 ~]# systemctl status mcelog
    mcelog.service
       Loaded: not-found (Reason: No such file or directory)
       Active: inactive (dead)
    ```

2. If mcelog is not installed, install mcelog using yum by typing the command:

    `yum install mcelog`

    After successful installation, proceed to the next step.

3. Edit the /etc/mcelog/mcelog.conf file to do the folllowing:

    - Uncomment the "raw=yes" entry.

- ■ Comment out the existing "memory-ce-threshold" entry and create a new one that reads "memory-ce-threshold = 3 / 72h".

4. Edit the /etc/mcelog/mcelog.setup file and comment out the existing "/usr/sbin/mcelog --ignorenodev --syslog --foreground" entry and make a new one that reads "/usr/sbin/mcelog --daemon".

5. Edit the /etc/systemd/system/multi-usr.target.wants/mcelog.service file to change the "[Service]" section from:

```
[Service]
ExecStartPre=/etc/mcelog/mcelog.setup
ExecStart=/usr/sbin/mcelog --ignorenodev --daemon --foreground
StandardOutput=syslog
```

to:

```
[Service]
Type=forking
ExecStartPre=/etc/mcelog/mcelog.setup
ExecStart=/usr/sbin/mcelog --daemon
StandardOutput=syslog
```

6. Apply the changes you have made by typing the command:

systemctl daemon-reload

7. Restart the mcelog service by typing the command:

systemctl restart mcelog

8. Confirm that mcelog is running in daemon mode by typing the command:

systemctl status mcelog

You should see the output similar to:

```
[root@testserver16 ~]# systemctl status mcelog
mcelog.service - Machine Check Exception Logging Daemon
   Loaded: loaded (/usr/lib/systemd/system/mcelog.service; enabled)
   Active: active (running) since Fri 2014-10-03 12:52:13 EDT; 6s ago
  Process: 3939 ExecStart=/usr/sbin/mcelog --daemon (code=exited,
status=0/SUCCESS)
  Process: 3935 ExecStartPre=/etc/mcelog/mcelog.setup (code=exited,
status=0/SUCCESS)
 Main PID: 3940 (mcelog)
   CGroup: /system.slice/mcelog.service
               |__3940 /usr/sbin/mcelog --daemon
```

Uninstall Location Changed For Oracle Hardware Management Pack 2.3.2.2 and Later (23299302)

For Oracle Solaris or Linux installations of Oracle Hardware Management Pack beginning with version 2.3.2.2, the uninstall directory path is: `/opt/ssm/setup/uninstall`. For versions of Oracle Hardware Management Pack earlier than 2.3.2.2, the uninstall directory path is: `/opt/sun-ssm/setup/uninstall`.

After running uninstall on a Solaris or Linux system, there might still be directories listed under `/opt/sun-ssm`. The reason for this is that when Oracle Hardware Management Pack is upgraded, the `/opt/sun-ssm` directory (if it exists) is retained for compatibility with other versions of Oracle Hardware Management Pack. If you are completely removing Oracle Hardware Management Pack and all of its components, these directories can be safely deleted.

Installing Hardware Management Pack Components

This section includes the following topics:

- "Using GUI Mode to Install and Uninstall Components" on page 34
- "Using Console Mode to Install or Uninstall Components" on page 49
- "Using Silent Mode to Install and Uninstall Components" on page 56

Using GUI Mode to Install and Uninstall Components

This section includes the following procedures:

- "Install Hardware Management Components Using GUI Mode" on page 34
- "Uninstall Hardware Management Components Using GUI Mode" on page 44

▼ Install Hardware Management Components Using GUI Mode

Before You Begin
- To install Management Pack components with Oracle Hardware Management Pack Installer, you must be logged into your system with administrative privileges.
- Before installing Oracle Hardware Management Pack, refer to the "Prerequisites" on page 27 and "Installation Issues" on page 28 sections for information pertaining to your installed OS.

- Download and extract the Hardware Management Pack. See "Getting the Software" on page 25.

  The directory that you extract the files to is referred to as *extract-directory* in this procedure.

- For Windows Server 2003 SP2 or earlier, you must first install the Sun IPMI System Management Driver. See "Installing the Sun IPMI System Management Driver 2.1" on page 89. This driver is included with other operating systems.

- The packages for Hardware Management Pack have dependencies that must be satisfied for a successful installation. See "Software Dependencies" on page 95 for more information.

- On the Oracle Solaris OS, due to the restrictions of pkgadd(1M), the path that you extract the Hardware Management Pack to must not contain any spaces for the installation process to proceed.

1. **To start the installer, type one of the following commands:**

   - **For Oracle Solaris 10 and Linux systems:** */extract-directory/*`oracle-hmp-`*version*`/install.bin`

   - **For Oracle Solaris 11 or 11.1 systems:** */extract-directory/*`oracle-hmp-`*version*`/install.`*arch*`.bin`

     where *arch* is SPARC or x86 depending on your processor.

   - **For Windows systems:** */extract-directory/*`oracle-hmp-`*version*`/install.exe`

   The splash screen appears.

2. **If any of the following dialogs appears, perform the appropriate action.**

   - **If the following dialog appears, click Quit and log into the system with administrative privileges.**

■ **If the following dialog appears, click Quit and remove the previously installed version of the software.**

■ **If the following dialog appears, click Quit and then check that you have the correct software version for your processor architecture.**

If the installation is ready to proceed, the Introduction screen appears.

When you are ready to proceed, click Next.

3. **From the Install Set drop-down menu, select either Standard or Custom.**

■ **If you select Standard, the Hardware Management Agents and CLI Tools components are automatically selected.**

■ **If you select Custom, the Choose Install Set screen appears.**
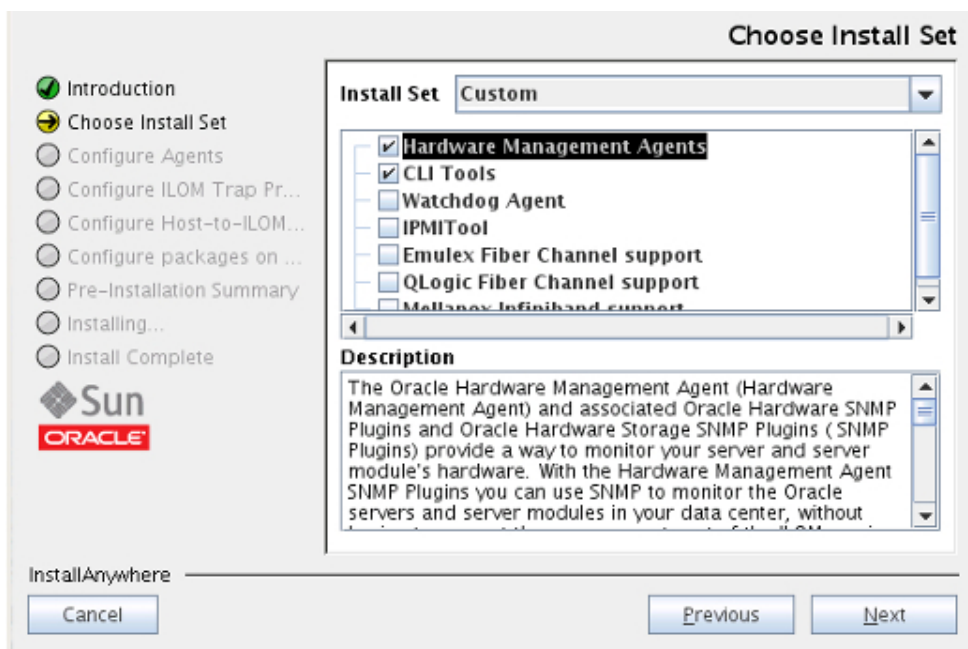
4. **For information on the available components, click the component name.**

The Description field displays information about the component.

Note - Some components of Hardware Management Pack are hardware or OS specific and are available in the installer only on compatible systems.

The Fibre Channel support options should only be selected on servers with compatible hardware. Selecting these options on a server without the supported hardware makes the installation process slower.

---

5. **Select the components that you want to install using the check boxes and then click Next.**

6. **If one of the following dialogs appears, take the appropriate action:**

- **Click OK and deselect the Hardware Management Agent feature from the Choose Install Set screen.**
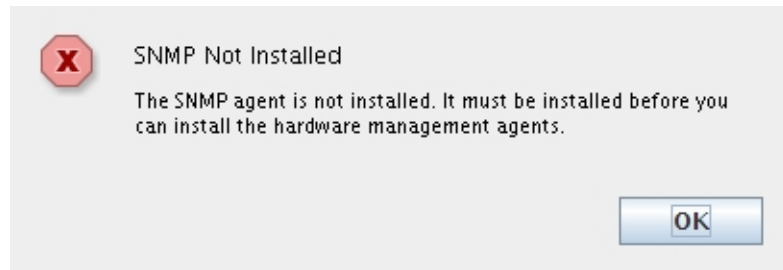
- **Click Feature Selection and install the listed dependencies.**
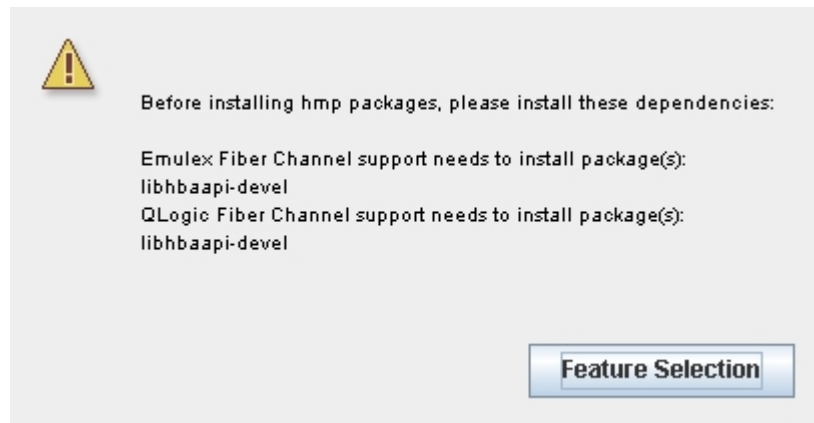
The Configure Agents screen appears.
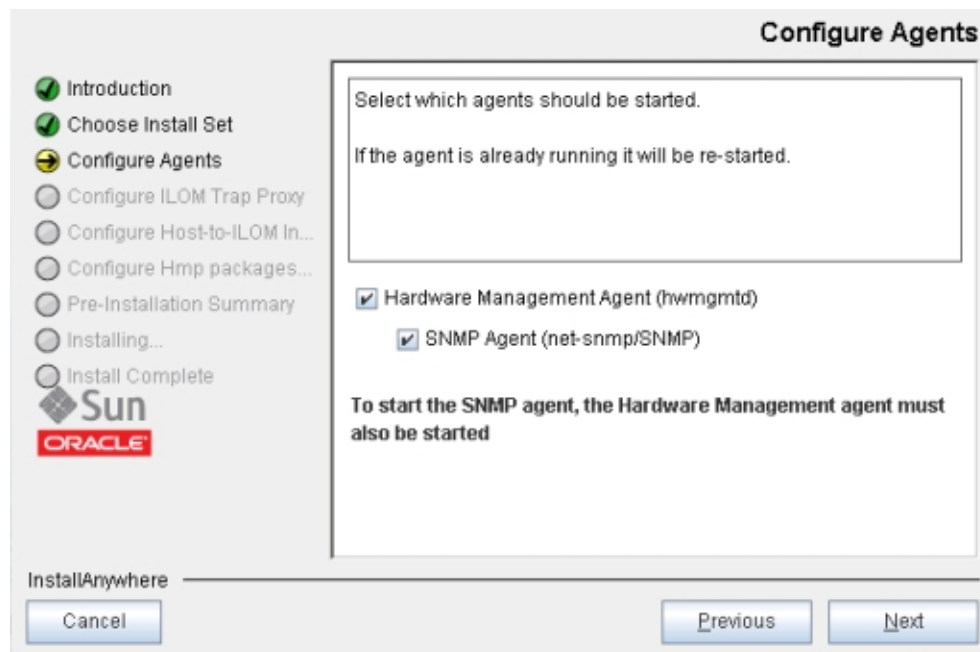
7. **Select the Hardware Management Agent and SNMP Agent and click Next.**

   Note - If you select SNMP Agent, you must also select Hardware Management Agent.

8. **Choose one of the following:**

   ■ **If you did not select the Hardware Management Agent, or your server does not support the Host-to-ILOM Interconnect, then go to the next step.**

   ■ **If you selected the Hardware Management Agent, and your server supports the Host-to-ILOM Interconnect, then you can choose to enable the ILOM trap proxy.**

   The ILOM trap proxy enables you to forward fault traps generated by an Oracle ILOM SP to a network destination over the Host-to-ILOM Interconnect. When enabling the ILOM

trap proxy, you must configure the IP, port and SNMP community that your destination is listening on.
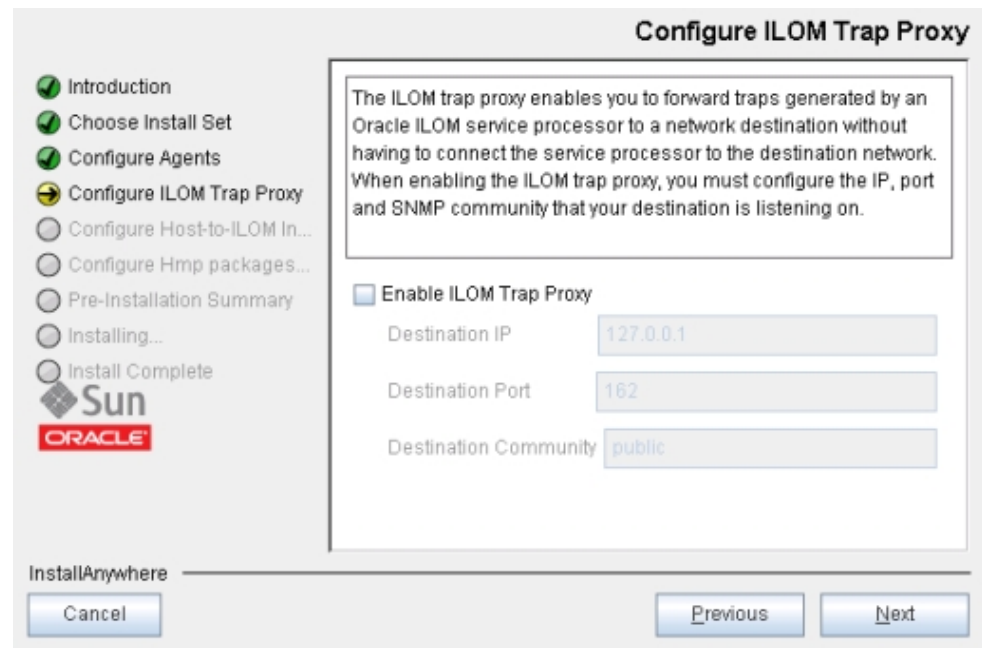
9. **If your server supports the Host-to-ILOM Interconnect, then you can choose to configure the interconnect during installation. For more information on Host-to-ILOM Interconnect, see "Enabling the Host-to-ILOM Interconnect" on page 21.**

   ■ On servers without the Host-to-ILOM Interconnect, go to the next step.
   ■ On supported platforms, the Configure Host-to-ILOM Interconnect screen appears.

Note - The Host-to-ILOM Interconnect must be enabled for the ILOM trap proxy to function. It is also required for the Oracle Linux Fault Management Architecture (FMA) component.
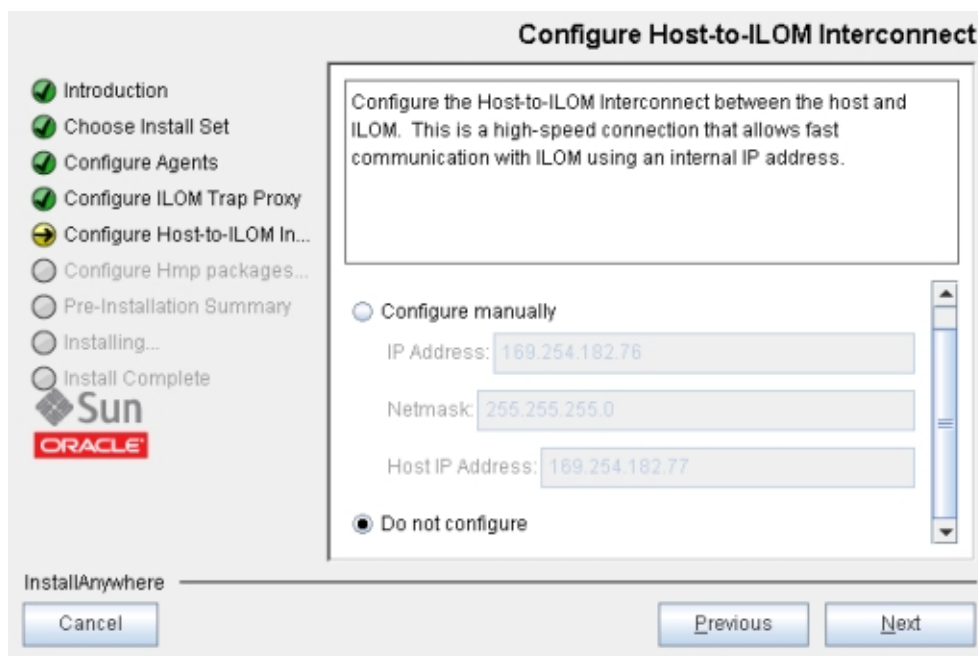
By default the Host-to-ILOM Interconnect is disabled and unconfigured. Select one of the options for configuring the Host-to-ILOM Interconnect:

■ **If you select the Configure automatically option, the Host-to-ILOM Interconnect is configured using default settings.**

■ **If you select the Configure manually option, you need to type the IP Address, Netmask, and Host IP Address information.**

Note - Automatic configuration is recommended, manual configuration is provided for expert use.

10. **A Pre-Installation Summary screen appears with information similar to the following screen.**
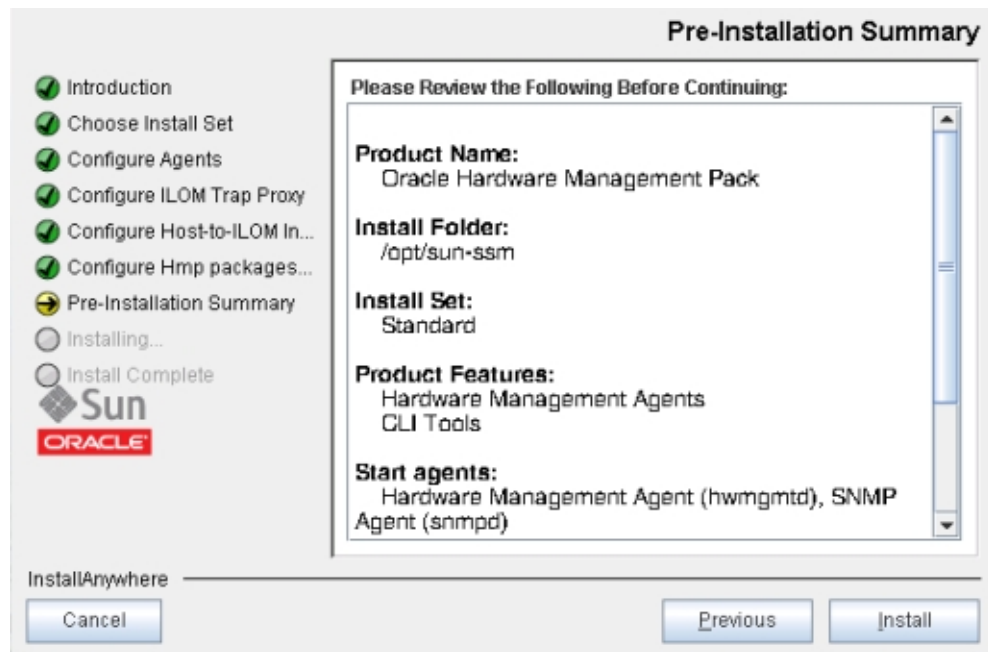
Verify that the information in the Pre-Installation Summary is correct.

■ **If you want to change any of the installation items, click the Previous button until you get back to the screen where you want to make the changes.**

■ **If the information is correct, click Install.**

The Install Complete screen appears when the installation has completed.
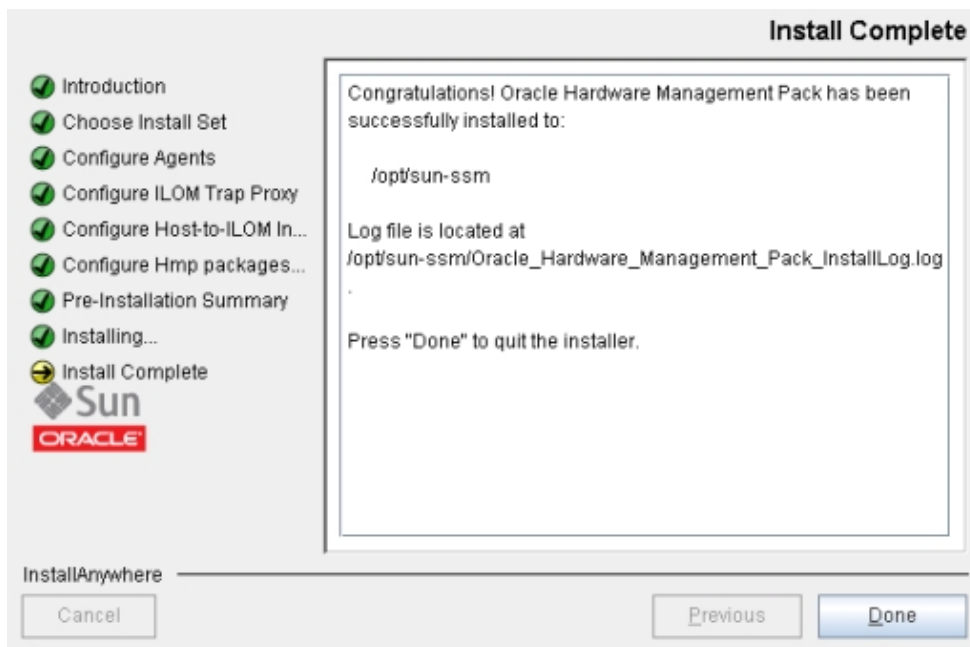
11. **Click Done to complete the installation.**

12. **(Optional) To verify that Oracle Hardware Management Pack is installed correctly, run a command. For example, enter the following CLI command as root:**

    # `ilomconfig --version`

If it is installed correctly, Oracle Hardware Management Pack displays version information.

▼ Uninstall Hardware Management Components Using GUI Mode

Before You Begin ■ To uninstall Management Pack components with Oracle Hardware Management Pack Installer, you must be logged into your system with administrative privileges.

1. **To start the uninstaller, type one of the following commands:**

   ■ **For Oracle Solaris OS or Linux systems with Oracle Hardware Management Pack version 2.3.2.2 or later:**

   `/opt/ssm/setup/uninstall`

   ■ **For Oracle Solaris OS or Linux systems with an Oracle Hardware Management Pack version earlier than 2.3.2.2:**

   `/opt/sun-ssm/setup/uninstall`

   ■ **For Windows systems:**

   Program Files`\Oracle\Oracle Hardware Management Pack\setup\uninstall.exe`

   where *Program Files* is the folder where your version of Windows stores programs.

   The splash screen appears.

2. **If the following dialog appears, click Quit and log into the system with administrative privileges.**
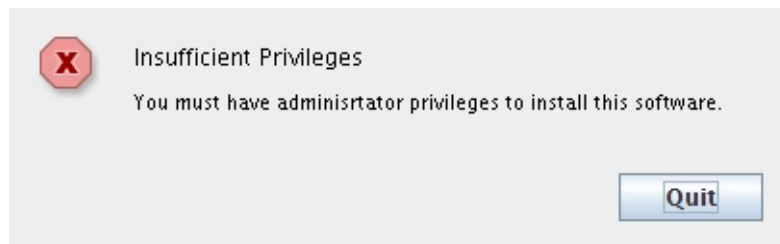
The Uninstall Oracle Management Pack screen appears.
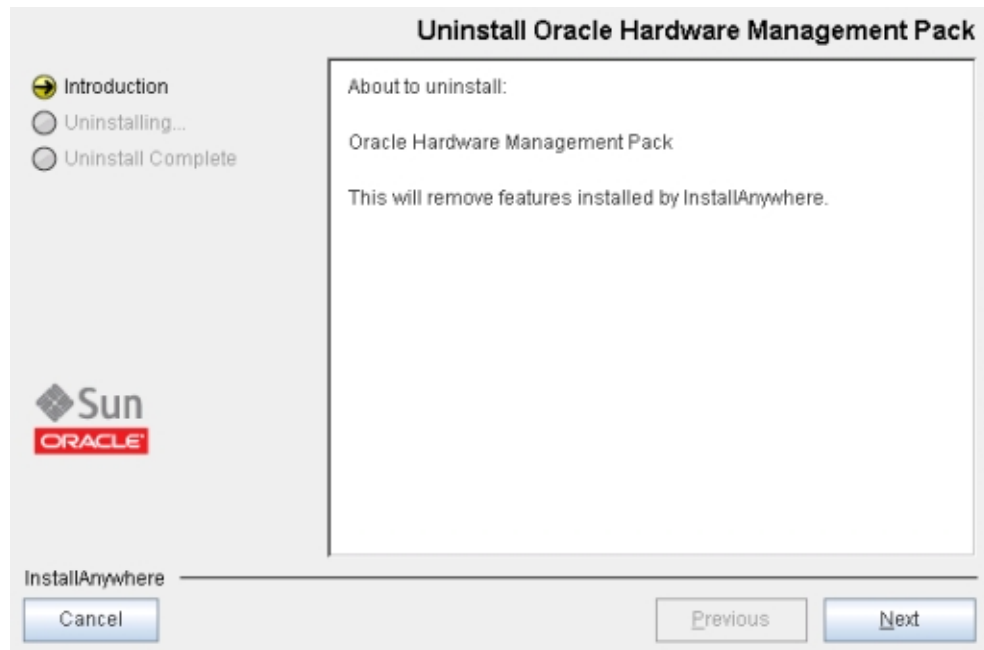
3. **Click Next.**

The Uninstall Options screen appears.
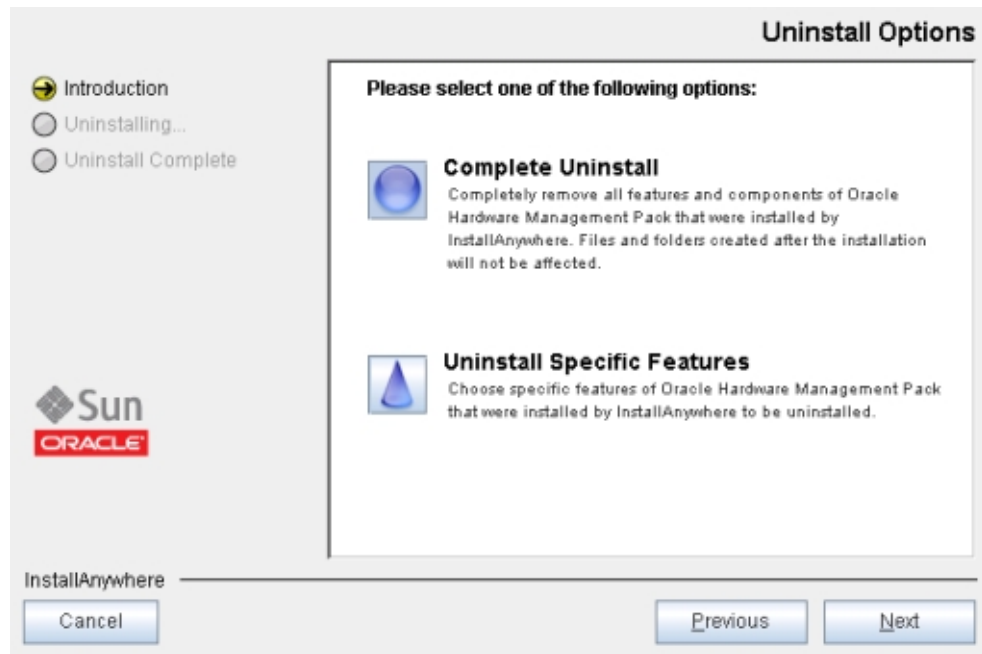
4.   **Select Complete Uninstall or Uninstall Specific Features and click Next.**

If you selected Uninstall Specific Features, the Choose Product Features screen appears.
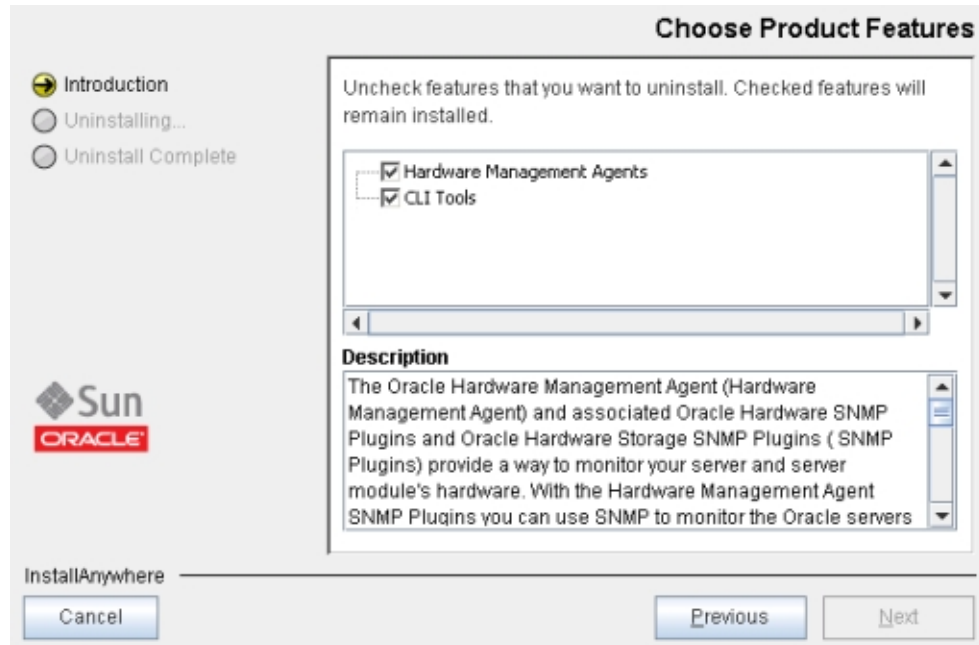
If the Host-to-ILOM Interconnect was enabled during installation, the following screen appears.
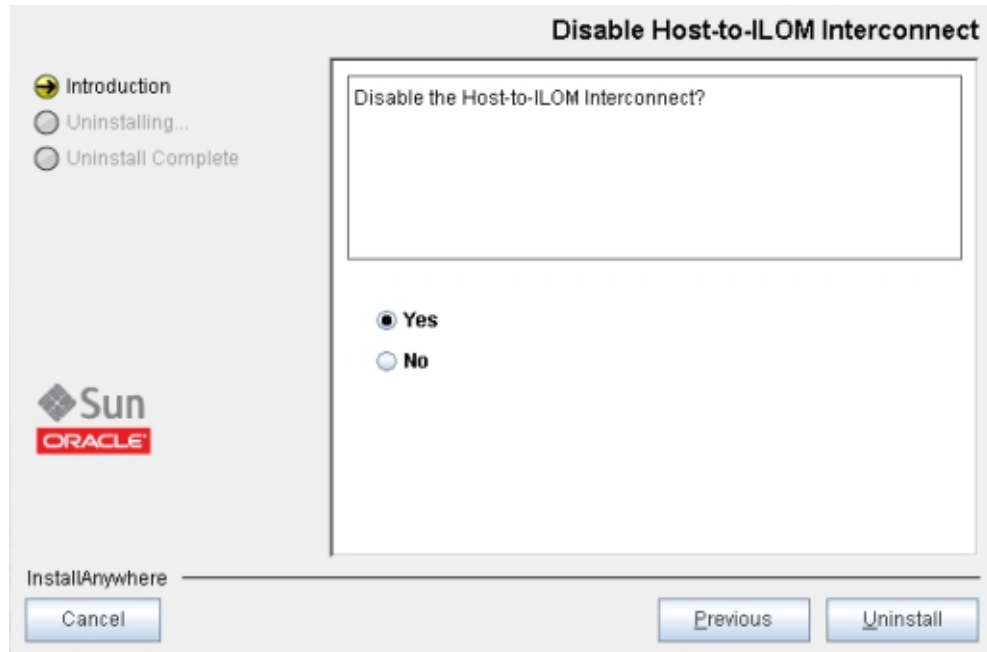
5. **Select Yes or No and click Uninstall.**

6. **Select any features that you want to uninstall and click Uninstall.**

   The Uninstall Oracle Hardware Management Pack screen appears.

   When the components have been uninstalled, the Uninstall Complete screen appears.

7. **Click Done.**

   Note - After running uninstall on a Solaris or Linux system, there might still be directories listed under /opt/sun-ssm. If you are completely removing Oracle Hardware Management Pack and all of its components, these directories can be safely deleted. In an upgrade scenario (where you will be updating components manually, not using the installer), the /opt/sun-ssm directory is required for compatibility with other versions of Oracle Hardware Management Pack.

See Also
- "Install Hardware Management Components Using GUI Mode" on page 34
- "Using Console Mode to Install or Uninstall Components" on page 49
- "Using Silent Mode to Install and Uninstall Components" on page 56

Using Console Mode to Install or Uninstall Components

This section includes the following procedures:

- "Install Hardware Management Components Using Console Mode" on page 49
- "Uninstall Hardware Management Pack Components Using Console Mode" on page 54

▼ Install Hardware Management Components Using Console Mode

Before You Begin
- To install Management Pack components with Oracle Hardware Management Pack Installer, you must be logged in to your system with administrative privileges.
- Before installing Oracle Hardware Management Pack, refer to the "Prerequisites" on page 27 and "Installation Issues" on page 28 sections for information pertaining to your installed OS.
- Download and extract the Hardware Management Pack. See "Getting the Software" on page 25.

  The directory where you extract the files is referred to as *extract-directory* in this procedure.
- For Windows Server 2003 SP2 or earlier, you must first install the Sun IPMI System Management Driver. See "Installing the Sun IPMI System Management Driver 2.1" on page 89.
- The packages for Hardware Management Pack have dependencies that must be satisfied for a successful installation. See "Software Dependencies" on page 95 for more information.
- On the Oracle Solaris OS, due to the restrictions of `pkgadd`(1M), the path that you extract the Hardware Management Pack to must not contain any spaces for the installation process to proceed.
- On servers running the Windows Server OS, when installing the Host-to-ILOM Interconnect, it is necessary to import the security certificate. See "Import the Security Certificate on a Windows Server" on page 94 for more information.

1. **Set up a console session with the server.**

2. **To start the installer, type one of the following commands:**

- **For Oracle Solaris 10 and Linux systems:** */extract-directory/***oracle-hmp-***version***/install.bin -i console**

- **For Oracle Solaris 11 or 11.1 systems:** */extract-directory/***oracle-hmp-***version***/install.***arch***.bin -i console**

  where *arch* is SPARC or x86 depending on your processor.

- **For Windows systems:** *extract-directory***oracle-hmp-***version***install.exe -i console**

The system displays output similar to the following:

```
Preparing to install...
Extracting the installation resources from the installer archive...
Configuring the installer for this system's environment...

Launching installer...

Preparing CONSOLE Mode Installation...


===============================================================================
Oracle Hardware Management Pack                (created with InstallAnywhere)
-------------------------------------------------------------------------------




===============================================================================
Introduction
------------


InstallAnywhere will guide you through the installation of Oracle Hardware
Management Pack.

It is strongly recommended that you quit all programs before continuing with
this installation.

Respond to each prompt to proceed to the next step in the installation.  If you
want to change something on a previous step, type 'back'.

You may cancel this installation at any time by typing 'quit'.
```

3. **The system displays:**

```
ENTER A COMMA_SEPARATED LIST OF NUMBERS REPRESENTING THE FEATURES YOU WOULD
LIKE TO SELECT, OR DESELECT. TO VIEW A FEATURE'S DESCRIPTION, ENTER
```

```
'?<NUMBER>'.  PRESS RETURN WHEN YOU ARE DONE:

    1- [X] Hardware Management Agents
    2- [X] CLI Tools
    3- [X] HMP Watchdog Agent
    4- [ ] IPMITool
    5- [ ] Emulex Fiber Channel support
    6- [ ] QLogic Fiber Channel support
    7- [ ] Mellanox Infiniband support

Please choose the Features to be installed by this installer.:
```

Options 1, 2 and 3 are preselected.

To toggle options, type a comma separated list of numbers. Any number toggles the corresponding option. For example, in the default selection shown above, typing 1,4 deselects Hardware Management Agents and selects IPMItool.

Note - Some components of Hardware Management Pack are hardware or OS specific and are available in the installer only on compatible systems.

The Fibre Channel support options should only be selected on servers with compatible hardware. Selecting these options on a server without the supported hardware makes the installation process slower.

---

4. **When you have typed the features you want to install, press return.**

   If the system displays:

```
===============================================================================
Dependency requirement for feature selection.
----------------------------------------------

Before installing hmp packages, please resolve these requirements:

Emulex Fibre Channel support requires package(s):  elxocmcore
libhbaapi-devel
QLogic Fibre Channel support requires package(s):  libhbaapi-devel

1- Exit and resolve the dependencies.
2- Continue and de-select unresolved packages.
```

   Choose one of the options and press Enter.

5. **Depending on your choices in Step 3:**

- **If you did not choose to install Hardware Management Agents, go to Step 6.**

- **If you chose to install Hardware Management Agents, the system displays:**

```
Configure Hardware Management Agent
-----------------------------------

Start the Hardware Management Agent? This agent's short name is hwmgmtd.

->1- Yes
2- No
```

Type the number for your choice or press Enter to select Yes.

The following screen appears:

```
Configure SNMP Agent
--------------------

Start the SNMP agent? This agent's short name is snmpd on Linux, sma on Solaris,
and SNMP on Windows.
->1- Yes
2- No
```

Type the number for your choice or press Enter to select Yes.

6. **Perform one of the following:**

- **If you did not choose to install Hardware Management Agents in Step 3, or your server does not support the Host-to-ILOM Interconnect, go to Step 10.**

- **If you chose to install Hardware Management Agents in step 3, and your server supports the Host-to-ILOM Interconnect, then you can configure the ILOM trap proxy:**

```
===============================================================
Configure ILOM  Trap Proxy
--------------------------

The ILOM trap proxy enables you to forward traps generated by an Oracle ILOM service
processor to a network destination without having to connect the service processor
to the destination network. When enabling the SNMP trap proxy, you must configure
 the
IP, port and SNMP community that your destination is listening on.

Do you want to enable ILOM Trap Proxy?
```

```
    1- Yes
->2- No
```

If you want to enable the fault trap proxy, type 1. The system offers options to configure the SNMP fault trap proxy, or to accept the defaults:

```
Destination IP (DEFAULT: 127.0.0.1):


Destination Port (DEFAULT: 162):


Destination Community (DEFAULT: public):
```

7. **If you did not choose to install CLI Tools in Step 3, go to Step 10. If you chose CLI Tools in Step 3, the system displays:**

```
Configure Host-to-ILOM Interconnect
-----------------------------------


Configure the Host-to-ILOM Interconnect between the host and ILOM.
This is a high-speed connection that allows fast communication with
ILOM using an internal IP address.

1- Configure automatically
->2- Configure manually
```

Note - The Host-to-ILOM Interconnect must be enabled for the ILOM trap proxy to function. It is also required for the Oracle Linux Fault Management Architecture (FMA) component. For more information on Host-to-ILOM Interconnect, see "Enabling the Host-to-ILOM Interconnect" on page 21.

8. **By default the Host-to-ILOM Interconnect is disabled and unconfigured. If the server you are installing on supports the Host-to-ILOM Interconnect, you can select one of these options:**

Type the number for your choice or Enter to select Configure automatically.

If you choose 1 or 3, go to Step 11. If you choose 2–`Configure manually`, the system displays:

```
Configure Host-to-ILOM Interconnect Manually
--------------------------------------------


Specify the following parameters.

IP Address: (DEFAULT: 169.254.182.76):


Netmask: (DEFAULT: 255.255.255.0):
```

```
Host IP Address: (DEFAULT: 169.254.182.77):
```

9. **Type the appropriate values for the IP Address, Netmask, and Host IP Address and press Enter.**

The Pre-Installation Summary appears.

10. **Verify that the information displayed on the Pre-Installation Summary is correct.**

■ **If the information is not correct, type `back` until you return to the screen you want to change.**

■ **If the information shown in the screen is correct, press Enter to continue.**

The following output appears:

```
Ready To Install
----------------

InstallAnywhere is now ready to install Oracle Hardware Management Pack onto
your system at the following location:
```

11. **Press Enter to begin the installation.**

The installation takes about 2 minutes.

12. **(Optional) To verify that Oracle Hardware Management Pack is installed correctly, run a command. For example, enter the following CLI command as root:**

`ilomconfig --version`

If it is installed correctly, Oracle Hardware Management Pack displays version information.

See Also
-
-
-

▼ Uninstall Hardware Management Pack Components Using Console Mode

Before You Begin
■ To uninstall Management Pack components with Oracle Hardware Management Pack unInstaller, you must be logged in to your system with administrative privileges.

1. **To start the uninstaller, type one of the following commands:**

- **For Oracle Solaris OS or Linux systems with Oracle Hardware Management Pack version 2.3.2.2 or later:**

  `/opt/ssm/setup/uninstall -i console`

- **For Oracle Solaris OS or Linux systems with an Oracle Hardware Management Pack version earlier than 2.3.2.2:**

  `/opt/sun-ssm/setup/uninstall -i console`

- **For Windows systems:**

  Program Files`\Oracle\Oracle Hardware Management Pack\setup\uninstall -i console`

  where *Program Files* is the folder where your version of Windows stores programs.

The following output appears:

```
Uninstall Oracle Hardware Management Pack
-----------------------------------------

About to uninstall...

Oracle Hardware Management Pack

This will remove features installed by InstallAnywhere.  It will not remove
files and folders created after the installation.
```

2. **Press Enter.**

    The following output appears.

    ```
    Uninstall Options
    -----------------

    ENTER THE NUMBER FOR YOUR CHOICE, OR PRESS <ENTER> to select the default.
    ->1- Completely remove all features and components.
    2- Choose specific features that were installed by InstallAnywhere.

    Please choose one of the following options:
    ```

3. **Type the number that represents your choice or press Enter to completely remove all features and components.**

    The uninstall begins. When the uninstall is complete, the following output appears.

    ```
    Uninstall Complete
    ------------------
    ```

> All items were successfully uninstalled.

4. Press Enter to exit the uninstaller.

Note - After running uninstall on a Solaris or Linux system, there might still be directories listed under `/opt/sun-ssm`. If you are completely removing Oracle Hardware Management Pack and all of its components, these directories can be safely deleted. In an upgrade scenario (where you will be updating components manually, not using the installer), the `/opt/sun-ssm` directory is required for compatibility with other versions of Oracle Hardware Management Pack.

See Also
- "Install Hardware Management Components Using Console Mode" on page 49
- "Using GUI Mode to Install and Uninstall Components" on page 34
- "Using Silent Mode to Install and Uninstall Components" on page 56

Using Silent Mode to Install and Uninstall Components

This section includes the following topics:

- "Silent Mode Installation Options" on page 56
- "Install Hardware Management Pack Components Using Silent Mode" on page 57
- "Uninstall Hardware Management Pack Component Using Silent Mode" on page 60

Silent Mode Installation Options

Silent mode is a non-interactive installation method. You navigate to the *extract-directory* and execute the `install.bin` (Oracle Solaris OS or Linux) or `install.exe` (Windows) at the command line. You can execute silent mode in one of two ways:

- A silent installation can be directed by supplying a properties file. The properties file contains parameters and properties that define the installation choices for the Installer.

  A properties file must first be created by running a GUI or console mode installation using the `-r` option as shown in the following example:

  `# ./install.bin -i GUI -r /path/filename.properties`

  where *path* must be an absolute path to the directory where your properties file will be created, and *filename* is the name of your properties file (suggested name: `installer.properties`).

Once the properties file is created, you can use the file to do an identical silent installation using the following command:

./install.bin -i silent -f */path/filename***.properties**

where *path* can be either an absolute path or a path relative to the location of the properties file.

Note - You don't need to use the **-f** option if you created a file named `installer.properties` in the same directory as `install.bin`. The installer will, by default, look for a file named `installer.properties` in that directory.

■ If no properties file is supplied, a default installation of the Management Pack components is performed with no post-installation configuration steps. When using the default silent install, all Management Pack components are installed, except IPMItool.

Note - On a server without SNMP configured, Management Agents is not installed. On a server with a previous version of Management Pack installed, the software is upgraded. The Host-to-ILOM Interconnect is not configured or enabled by default.

▼ Install Hardware Management Pack Components Using Silent Mode

Before You Begin
■ To install Management Pack components with Oracle Hardware Management Pack Installer, you must be logged in to your system with administrative privileges.

■ Before installing Oracle Hardware Management Pack, refer to the "Prerequisites" on page 27 and "Installation Issues" on page 28 sections for information pertaining to your installed OS.

■ Download and extract the Hardware Management Pack Software. See "Getting the Software" on page 25.

The directory where you extract the files is referred to as *extract-directory* in this procedure.

■ For Windows Server 2003 SP2 or earlier, you must first install the Sun IPMI System Management Driver. See "Installing the Sun IPMI System Management Driver 2.1" on page 89.

■ The packages for Hardware Management Pack have dependencies that must be satisfied for a successful installation. See "Software Dependencies" on page 95 for more information.

- On the Oracle Solaris OS, due to the restrictions of `pkgadd`(1M), the path that you extract the Hardware Management Pack to must not contain any spaces for the installation process to proceed.

- Refer to "Silent Mode Installation Options" on page 56 before performing the installation.

- On servers running Windows Server OS, when installing the Host-to-ILOM Interconnect, it is necessary to import the security certificate. See "Import the Security Certificate on a Windows Server" on page 94 for more information.

1. **To start the silent mode installation process, use one of the following commands:**

   - **For Oracle Solaris 10 or Linux systems:**

     - **To perform a typical silent installation:**

       */extract-directory/***oracle-hmp-***version***/install.bin -i silent**

     - **To perform an installation directed by a properties file:**

       */extract-directory/***oracle-hmp-***version***/install.bin -i silent -
       f** */path/filename***.properties**

       where *path* can be either an absolute path or a path relative to the location of the properties file.

   - **For Oracle Solaris 11 or 11.1 systems:**

     - **To perform a typical silent installation:**

       */extract-directory/***oracle-hmp-***version***/install.***arch***.bin -i silent**

       where *arch* is SPARC or x86 depending on your processor.

     - **To perform an installation directed by a properties file:**

       */extract-directory/***oracle-hmp-***version***/install.***arch***.bin -i silent -
       f** */path/filename***.properties**

       where *arch* is SPARC or x86 depending on your processor and *path* can be either an absolute path or a path relative to the location of the properties file.

   - **For Windows systems:**

     - **To perform a typical silent installation:**

`\`*extract-directory*`\`**`oracle-hmp-`***version*`\`**`install.exe -i silent`

- **To perform an installation directed by a properties file:**

  `\`*extract-directory*`\`**`oracle-hmp-`***version*`\`**`install.exe -i silent -f`
  `\`*path*`\`*filename*`.`**`properties`**

  where *path* can be either an absolute path or a path relative to the location of the properties file.

Note - On a server without SNMP configured, Management Agents is not installed. On a server with a previous version of Management Pack installed, the software is upgraded.

Output similar to the following appears:

```
Preparing to install...
Extracting the installation resources from the installer archive...
Configuring the installer for this system's environment...

Launching installer...

Preparing SILENT Mode Installation...


===========================================================================
Oracle Hardware Management Pack                   (created with InstallAnywhere)
---------------------------------------------------------------------------
```

The installation takes about two minutes. A progress bar is displayed as the installation proceeds.

When the installation is complete, the following output appears:

```
Installation Complete.
```

2. **(Optional) To verify that Oracle Hardware Management Pack is installed correctly, run a command. For example, enter the following CLI command as root:**

   `#` **`ilomconfig --version`**

   If it is installed correctly, Oracle Hardware Management Pack displays version information.

See Also
-
-
-

▼ **Uninstall Hardware Management Pack Component Using Silent Mode**

Before You Begin ■ To uninstall Management Pack components with Oracle Hardware Management Pack Installer, you must be logged in to your system with administrative privileges.

● **To start the silent mode installation process, use one of the following commands:**

■ **For Oracle Solaris OS or Linux systems with Oracle Hardware Management Pack version 2.3.2.2 or later:**

`/opt/ssm/setup/uninstall -i silent`

■ **For Oracle Solaris OS or Linux systems with an Oracle Hardware Management Pack version earlier than 2.3.2.2:**

`/opt/sun-ssm/setup/uninstall -i silent`

■ **For Windows systems:**

Program Files`\Oracle\Oracle Hardware Management Pack\setup\uninstall.exe -i silent`

where *Program Files* is the folder where your version of Windows stores programs.

The following output appears:

```
Preparing SILENT Mode Uninstallation...

===============================================================================
Oracle Hardware Management Pack                  (created with InstallAnywhere)
-------------------------------------------------------------------------------


===============================================================================
Uninstalling...
```

The installation should take about 2 minutes. A progress bar is displayed as the installation proceeds.

When the installation is complete, the following output displays:

```
Uninstallation Complete.
```

Note - After running uninstall on a Solaris or Linux system, there might still be directories listed under `/opt/sun-ssm`. If you are completely removing Oracle Hardware Management Pack and all of its components, these directories can be safely deleted. In an upgrade scenario (where you will be updating components manually, not using the installer), the `/opt/sun-ssm` directory is required for compatibility with other versions of Oracle Hardware Management Pack.

See Also
- "Install Hardware Management Pack Components Using Silent Mode" on page 57
- "Using GUI Mode to Install and Uninstall Components" on page 34
- "Using Console Mode to Install or Uninstall Components" on page 49

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Installing Components Manually

This section describes how to manually install and uninstall Hardware Management Pack components on an Oracle server using operating system (OS)-specific commands.

The section includes:

- "Installing and Uninstalling Components Manually on an Oracle Solaris Server" on page 63
- "Installing and Uninstalling Components Manually on a Linux Server" on page 71
- "Installing and Uninstalling Components Manually on a Windows Server" on page 84

Installing and Uninstalling Components Manually on an Oracle Solaris Server

This section includes the following topics:

- "Installing and Uninstalling Components Manually on an Oracle Solaris 10 Server" on page 63
- "Installing and Uninstalling Components Manually on an Oracle Solaris 11 Server" on page 66
- "Manually Configure Hardware Management Pack on an Oracle Solaris Server" on page 70

Installing and Uninstalling Components Manually on an Oracle Solaris 10 Server

This section includes the following topics:

- "Available Packages for Oracle Solaris 10" on page 64
- "Manually Install Components on an Oracle Solaris 10 Server" on page 64
- "Manually Uninstall Components on an Oracle Solaris 10 Server" on page 66

Available Packages for Oracle Solaris 10

This section provides details on the packages included with the Hardware Management Pack. For information on the software dependencies for these packages, see "Software Dependencies" on page 95. The following packages are available on Intel x86 and SPARC architecture servers running Oracle Solaris 10:

- `ORCLhmp-hwmgmt` - Oracle Server Hardware Management Agents.
- `ORCLhmp-libs` - Libraries required by Oracle Hardware Management Pack.
- `ORCLhmp-snmp` - Oracle Server Hardware SNMP plugins.
- `ORCLhmp-tools` - Oracle Server CLI Tools.
- `ORCLhmp-uecm` - CDC ECM USB-to-Ethernet driver. Only compatible with systems running Oracle Solaris 10 10/09 (update 8). For later versions of Oracle Solaris 10, use the CDC ECM USB driver that comes with Oracle Solaris.
- `ORCLhmp-tools-biosconfig` - Oracle Server CLI Tools `biosconfig`. Only compatible with x86 systems using Legacy BIOS.
- `ORCLhmp-tools-ubiosconfig` - Oracle Server CLI Tools `ubiosconfig`. Only compatible with x86 systems using UEFI BIOS.
- `ORCLhmp-zoningcli` - Zoning CLI Tool. Only compatible with Oracle SPARC T3-1 servers that have the 16 disk backplane.
- `ELXocmcore` and `EMLXemlxu` - Emulex Fibre Channel support and drivers.
- `SUNWfirmwareflash` - Oracle Solaris Generic Firmware Flash Tool for InfiniBand Host Channel Adapters.
- `QConvergeConsoleCLI` - QLogic Fibre Channel Host Bus Adapter command line interface.

Note - The QLogic Fibre Channel Host Bus Adapter command line interface, part of Hardware Management Pack since version 2.2.1, was previously provided as `QLScli` and `QLSclix`.

- `ipmiflash` - IPMIflash utility.
- `ipmitool` - IPMItool utility.

▼ Manually Install Components on an Oracle Solaris 10 Server

Before You Begin   ■   To install Management Pack components with Oracle Hardware Management Pack Installer, you must be logged in to your system with administrative privileges.

- Download and extract the Hardware Management Pack. See "Getting the Software" on page 25.

  The directory where you extract the files is referred to as *extract-directory* in this procedure.

- The packages for Hardware Management Pack have dependencies that must be satisfied for a successful installation. See "Software Dependencies" on page 95 for more information.

- On the Oracle Solaris OS, due to the restrictions of `pkgadd`(1M), the path that you extract the Hardware Management Pack to must not contain any spaces for the installation process to proceed.

- If your system includes adapters using technology from QLogic or Emulex, you must install the appropriate third-party utilities included with Hardware Management Pack. See "Available Packages for Oracle Solaris 10" on page 64.

1. **If you want to install only IPMItool or IPMIflash, see the following steps. If you also want to install the other Hardware Management Pack components, go to Step 3.**

   - **To install `ipmiflash`, run the following command:**

     `pkgadd -d` */extract-directory/*`packages ipmiflash`

   - **To install `ipmitool`, run the following command:**

     `pkgadd -d` */extract-directory/*`packages ipmitool`

2. **If you see the prompt to install conflicting files, type `y` to continue the installation.**

3. **Determine which Hardware Management Pack components that you want to install, see "Available Packages for Oracle Solaris 10" on page 64.**

4. **To install the packages, use the following command:**

   `pkgadd -d` */extract-directory/*`packages ORCLhmp-libs` *additional components*

   For example, to install just the Hardware Management agent and SNMP plugins:

   `pkgadd -d` */extract-directory/*`packages ORCLhmp-libs ORCLhmp-hwmgmt ORCLhmp-snmp`

5. **Follow the on screen instructions to continue the installation.**

   The selected components are installed.

▼ Manually Uninstall Components on an Oracle Solaris 10 Server

Before You Begin
- To uninstall Hardware Management Pack components manually, you must be logged in to your system with root privileges.
- The packages for Hardware Management Pack have dependencies that must be observed for a successful uninstallation. See "Software Dependencies" on page 95 for more information.
- The packages for Hardware Management Pack have dependencies that must be observed for a successful uninstallation. See "Software Dependencies" on page 95 for more information.

1. **Determine which components you want to uninstall. See "Available Packages for Oracle Solaris 10" on page 64.**

   Note - The following package dependencies exist.

   - `ORCLhmp-libs` must be uninstalled after all other Hardware Management packages have been uninstalled.
   - `ORCLhmp-snmp` must be uninstalled before `ORCLhmp-hwmgmt` is uninstalled.

2. **Run the following command:**

   `pkgrm` *package name(s)*

   For example, to remove the hardware agent with SNMP plugins:

   `pkgrm ORCLhmp-snmp ORCLhmp-hwmgmt`

3. **Follow any on screen prompts to complete the uninstallation.**

Installing and Uninstalling Components Manually on an Oracle Solaris 11 Server

This section contains the following:

- "Available Packages for Oracle Solaris 11" on page 67
- "Manually Install Components on Oracle Solaris 11 Without Zones" on page 67
- "Manually Install Components on Oracle Solaris 11 With Zones" on page 68
- "Manually Uninstall Components on an Oracle Solaris 11 Server" on page 69

Available Packages for Oracle Solaris 11

This section provides details on the packages included with the Hardware Management Pack. For information on the software dependencies for these packages, see "Software Dependencies" on page 95. The following packages are available:

Note - For installation, the package name specified must include the full package path listed below (for example, `system/management/hmp/hmp-ipmitool`).

- `system/management/hmp/hmp-libs` - libraries required by Oracle Hardware Management Pack.
- `system/management/hmp/hmp-snmp` - Oracle Server Hardware SNMP plugins.
- `system/management/hmp/hmp-hwmgmt` - Oracle Server Hardware Management Agents.
- `system/management/hmp/hmp-tools` - Oracle Server CLI Tools.
- `system/management/hmp/hmp-ipmiflash` - IPMIflash utility.
- `system/management/hmp/hmp-ipmitool` - IPMItool utility.
- `system/management/hmp/hmp-tools-biosconfig` - BIOS configuration utility
- `system/management/hmp/hmp-tools-ubiosconfig` - UEFI BIOS configuration utility
- `hmp-zoningcli` - zoning CLI Tool for Oracle SPARC T3-1 servers that have the 16 disk backplane.
- `system/management/hmp/ELXocmcore` and `EMLXemlxu` - Emulex Fibre Channel support and drivers, part of Hardware Management Pack since version 2.2.1.
- `system/management/hmp/QConvergeConsoleCLI` - QLogic Fibre Channel Host Bus Adapter command line interface, part of Hardware Management Pack since version 2.2.6.

Note - `hmp-hwmgmt` must be installed before `hmp-snmp` is installed.

The QLogic Fibre Channel Host Bus Adapter command line interface, part of Hardware Management Pack since version 2.2.1 was previously provided as `QLScli` and `QLSclix`.

▼ Manually Install Components on Oracle Solaris 11 Without Zones

Before You Begin
- To install Hardware Management Pack components manually, you must be logged in to your system with root privileges.
- Before installing Oracle Hardware Management Pack, refer to the "Prerequisites" on page 27 and "Installation Issues" on page 28 sections for information pertaining to your installed OS.

- Download and extract the Hardware Management Pack. See "Getting the Software" on page 25.

  The directory that you extract the files to is referred to as *extract-directory* in this procedure.

- The packages for Hardware Management Pack have dependencies that must be satisfied for a successful installation. See "Software Dependencies" on page 95 for more information.

- On the Oracle Solaris OS, due to the restrictions of `pkgadd`(1M), the path that you extract the Hardware Management Pack to must not contain any spaces for the installation process to proceed.

- If your system includes adapters using technology from QLogic or Emulex, you must install the appropriate third-party utilities included with Hardware Management Pack. See "Available Packages for Oracle Solaris 11" on page 67.

1. **Determine which Hardware Management Pack components that you want to install. See "Available Packages for Oracle Solaris 11" on page 67.**

2. **To list the available packages:**

   `pkg list -g file:///`*extract-directory*`/oracle-hmp-2.3.2.2-SunOS-5.11.p5p`

3. **To install the packages, use the following command:**

   `pkg install -g file:///`*extract-directory*`/oracle-hmp-2.3.2.2-SunOS-5.11.p5p pkg:/mp-re/`*package-name*

   where *package-name* is one or more of the packages listed in "Available Packages for Oracle Solaris 11" on page 67.

   The selected packages are installed.

▼ Manually Install Components on Oracle Solaris 11 With Zones

Before You Begin
- To install Hardware Management Pack components manually, you must be logged in to your system with root privileges.

- Before installing Oracle Hardware Management Pack, refer to the "Prerequisites" on page 27 and "Installation Issues" on page 28 sections for information pertaining to your installed OS.

- Download and extract the Hardware Management Pack. See "Getting the Software" on page 25.

  The directory that you extract the files to is referred to as *extract-directory* in this procedure.

- The packages for Hardware Management Pack have dependencies that must be satisfied for a successful installation. See "Software Dependencies" on page 95 for more information.

■ On the Oracle Solaris OS, due to the restrictions of `pkgadd`(1M), the path that you extract the Hardware Management Pack to must not contain any spaces for the installation process to proceed.

■ If your system includes adapters using technology from QLogic or Emulex, you must install the appropriate third-party utilities included with Hardware Management Pack. See "Available Packages for Oracle Solaris 11" on page 67.

■ This procedure applies to servers with zones. See "Manually Install Components on Oracle Solaris 11 Without Zones" on page 67 for a server without zones.

1. **Determine which Hardware Management Pack components that you want to install. See "Available Packages for Oracle Solaris 11" on page 67.**

2. **Create a package repository at a suitable path.**

   `pkgrepo create` *path*

   where *path* is a path such as `/var/tmp/OHMP`

3. **Publish the repository using the install files.**

   `pkgrecv -s` *extraction_directory*`/oracle-hmp-2.3.2.2-SunOS-5.11.p5p -d` *path* `'*'`

   where *path* is the path used in the previous step.

4. **Set the publisher for the repository.**

   `pkg set-publisher -g file://`*path* *mp-re*

   where *path* is the path used in the previous step and *mp-re* is a name for the repository.

5. **To install the packages, use the following command:**

   `pkg install -g file:///`*extract-directory*`/oracle-hmp-2.3.2.2-SunOS-5.11.p5p pkg:/mp-`
   `re/`*package-name*

   where *package-name* is one or more of the packages listed in "Available Packages for Oracle Solaris 11" on page 67.

   The selected packages are installed.

▼ Manually Uninstall Components on an Oracle Solaris 11 Server

Before You Begin   ■ To uninstall Hardware Management Pack components manually, you must be logged in to your system with root privileges.

- The packages for Hardware Management Pack have dependencies that must be observed for a successful uninstallation. See "Software Dependencies" on page 95 for more information.

1. **Determine which components you want to uninstall. See "Available Packages for Oracle Solaris 11" on page 67.**

Note - The following package dependencies exist.

- `hmp-libs` must be uninstalled after all other Hardware Management packages have been uninstalled.
- `hmp-snmp` must be uninstalled before `hmp-hwmgmt` is uninstalled.
- `hmp-zoningcli` is only available for SPARC servers running Oracle Solaris OS.

---

2. **To uninstall the packages, use the following command:**

   `pkg uninstall` *package-name*

   where *package-name* is one of the packages listed in "Available Packages for Oracle Solaris 11" on page 67.

▼ Manually Configure Hardware Management Pack on an Oracle Solaris Server

● **Run the appropriate commands for the features that you want to configure.**

- **If Oracle Server Management Agents are installed, restart the Hardware Management Agent using the following commands:**

  `/usr/sbin/svcadm disable hwmgmtd`

  `/usr/sbin/svcadm enable hwmgmtd`

- **If Oracle Hardware SNMP Plugins are installed, restart the SNMP daemon.**

  On Oracle Solaris 10 OS, use the following command:

  `/usr/sbin/svcadm restart sma`

  On Oracle Solaris 11 OS, use the following command:

  `/usr/sbin/svcadm restart net-snmp`

- **If itpconfig is installed on a server that supports Host-to-ILOM Interconnect, enable the Host-to-ILOM Interconnect using the following steps:**

  a. **Verify the server's Oracle ILOM service processor (SP) supports this feature using the following command:**

     /opt/_ssm_directory_**/bin/itpconfig list interconnect**

     Where _ssm_directory_ is either sun-ssm or ssm, depending on your version of Oracle Hardware Management Pack.

     If SUBCOMMAND NOT SUPPORTED appears, then this feature is not supported by your server.

  b. **On Oracle Solaris OS 10 10/09, install the usbecm driver.**

     pkgadd -d /_extract-directory_**/packages ORCLhmp-drvs**

  c. **Do one of the following:**

     - **If you want to enable the interconnect automatically, use the following command:**

        /opt/_ssm_directory_**/bin/itpconfig enable interconnect**

        Where _ssm_directory_ is either sun-ssm or ssm, depending on your version of Oracle Hardware Management Pack.

        This is the preferred method for configuring the interconnect.

     - **If you want to enable the interconnect manually, use the following command:**

        /opt/_ssm_directory_**/bin/itponfig enable interconnect --ipaddress=x.x.x.x -- netmask=x.x.x.x --hostipaddress=x.x.x.x**

        Where _ssm_directory_ is either sun-ssm or ssm, depending on your version of Oracle Hardware Management Pack.

Installing and Uninstalling Components Manually on a Linux Server

This section includes the following procedures:

Available Packages for Linux

The Hardware Management Pack download contains packages that can be used to install the components manually. For information on the software dependencies for these packages, see "Software Dependencies" on page 95. The following list provides the names of these packages.

- `hmp-libs` - libraries required by Oracle Hardware Management Pack.
- `hmp-snmp` - Oracle Server Hardware SNMP plugins.
- `hmp-hwmgmt` - Oracle Server Hardware Management Agents.
- `hmp-tools` - Oracle Server CLI Tools.
- `hmp-tools-biosconfig`- Oracle Server CLI Tools `biosconfig`.
- `hmp-tools-ubiosconfig`- Oracle Server CLI Tools `ubiosconfig`. Only compatible with servers that have a UEFI BIOS and is part of Hardware Management Pack since version 2.2.1.
- `hmp-wdt` - Oracle Hardware Management Pack Watchdog Agent.
- `fm` - Oracle Linux Fault Management Architecture.
- `ipmiflash` - IPMIflash utility.
- `ipmitool` - IPMItool utility.
- `elxocmcore` - Emulex Fibre Channel support and drivers, part of Hardware Management Pack since version 2.2.1.
- `QConvergeConsoleCLI` - QLogic Fibre Channel Host Bus Adapter command line interface, part of Hardware Management Pack since version 2.2.1.
- `mstflint` - Mellanox InfiniBand Host Channel Adapter firmware burning and diagnostics tools, part of Hardware Management Pack since version 2.2.1.

The file names for the packages generally follow the following format:

component-version.distribution.architecture.rpm

where:

- *component* is one of component names listed above.

- *version* is the software version number.
- *distribution* is one of el4, el5, el6, ovm3.3, sl10 or s11.
- *architecture* is either i386 (32-bit) or x86_64 (64-bit).

For example, for Oracle Enterprise Linux 5 32-bit, the Hardware Management Pack version 2.2.1 CLI Tools file name is `oracle-hmp-tools-2.2.1-1.el5.i386.rpm`.

Note - Unlike previous releases of Management Pack, there is not a specific package for Oracle VM 3.2 or earlier. Use the oel5 package for servers running Oracle VM 3.2 or earlier and the ovm3.3 package for servers running Oracle VM 3.3.

▼ Install Components on a Linux Server

Before You Begin
- To install Hardware Management Pack components manually, you must be logged in to your system with root privileges.
- Download and extract the Hardware Management Pack. See "Getting the Software" on page 25.

  The directory to which you extract the files is referred to as *extract-directory* in this procedure.
- The packages for Hardware Management Pack have dependencies that must be satisfied for a successful installation. See "Software Dependencies" on page 95 for more information.
- If your system includes adapters using technology from QLogic, Emulex or Mellanox, you must install the appropriate third-party utilities included with Hardware Management Pack. See "Available Packages for Linux" on page 72.
- These instructions also apply to Oracle VM, see "Software Dependencies" on page 95 for OS-specific package dependencies information.
- For instructions on installing Oracle Linux Fault Management Architecture software on Oracle Linux, see "Installing the Oracle Linux FMA Software" on page 74.

1. **If you want to install only `ipmitool` or `ipmiflash`, see the following steps. If you also want to install the other Hardware Management Pack components, go to Step 3.**

   - **To install `ipmiflash`, type the following command:**

     ```
     rpm -i /extract-directory/packages/ipmiflash*.rpm
     ```

   - **To install `ipmitool`, type the following command:**

```
rpm -i /extract-directory/packages/ipmitool*.rpm
```

By default, no output opens after the installation.

2. **Determine which Hardware Management Pack components to install.**

   See "Available Packages for Linux" on page 72 for an overview of which packages are
   available for installation.

   Note - You must install oracle-hmp-libs with all packages. If you are installing oracle-hmp-
   snmp you must also install oracle-hmp-hwmgmt.

   ---

3. **Use the following command to install the packages:**

   ```
   rpm -i /extract-directory/packages/oracle-hmp-libs*.rpm additional components
   ```

   For example, to install just the Hardware Management Agent and SNMP plugins:

   ```
   rpm -i /extract-directory/packages/oracle-hmp-libs*rpm /extract-directory/packages/oracle-hmp-
   hwmgmt*rpm /extract-directory/packages/oracle-hmp-snmp*rpm
   ```

   No output appears by default.

Installing the Oracle Linux FMA Software

This section describes how to manually install the required Oracle Linux components and
Oracle Linux FMA software on the server.

1. "Install the Required Linux Components Before Installing Oracle Linux FMA
   Software" on page 74
2. "Install the Oracle Linux FMA Software as an Independent Component" on page 80
3. "Confirm That the Oracle Linux FMA Software is Running" on page 82

For more information on Oracle Linux FMA, see *Oracle Linux Fault Management Architecture
Software User's Guide* .

▼ Install the Required Linux Components Before Installing Oracle Linux FMA Software

The procedures in this section assume that your system is configured with access to Oracle
Linux Software Repositories. By default, Oracle Linux configures the Oracle Linux repositories
for the system through network access to the Oracle Linux Public site::

http://public-yum.oracle.com/

If your site does not permit this access, then you need another means of acquiring the required software package(s). Your site might provide its own internal "mirror" repository, or you might even have to manually download (for example, using HTTP, FTP, and manually mounting the installation DVD) and copy the appropriate package file(s) to your system and manually install them.

Unless you are an expert user familiar with manual installation of Linux components, use the Yum utility or its corresponding GUI counterpart 'gpk-application' available from the GNOME desktop (Menu: System > Administration > Add/Remove Software) to deal with software installation and updates.

Before You Begin   To perform this procedure, you must be logged in to your system with root privileges.

1. **Check to see if the IPMI service is installed and running by typing the command:**

   `service ipmi status`

   You should see output similar to:

   ```
   [root@hostname ~]# service ipmi status
   ipmi_msghandler module loaded.
   ipmi_si module loaded.
   ipmi_devintf module loaded.
   /dev/ipmi0 exists.
   ```

   - **If the service is installed but is not running, start the service:**

     a. **Type the command:**

        `service ipmi start`

     b. **To have the service automatically start after a server reboot (so that you do not have to manually start it each time), also type the command:**

        `chkconfig --levels 345 ipmi on`

   - **If the IPMI service is not installed, you see an "unrecognized service" error. If so, you will need to install the IPMI service software package first, and then start it.**

     Oracle Linux provides the OpenIPMI software distribution for use as the standard (or default) IPMI service.

     a. **Install the service by typing the command:**

```
yum install OpenIPMI
```

> **Note -** If you are not using Yum, you will have to download and install the OpenIPMI package (Oracle Linux 6.5 base version: `OpenIPMI-2.0.16-14.el6.x86_64.rpm`) and the ancillary OpenIPMI-libs package (Oracle Linux 6.5 base version: `OpenIPMI-libs-2.0.16-14.el6.x86_64.rpm`). Other dependencies could include glibc and openssl, install them as needed.

    b. After successful installation, start the service by typing the command:

```
service ipmi start
```

    c. To have the service automatically start after a server reboot so that you do not have to manually start it each time, type:

```
chkconfig --levels 345 ipmi on
```

2. Check to see if the dmidecode package is installed and available by typing the command:

```
dmidecode -V
```

- **If dmidecode is available, you should see its version listed as output, similar to:**

```
[root@hostname ~]# dmidecode -V
2.11
```

- **If dmidecode is not available, install it by typing the command:**

```
yum install dmicode
```

3. If your system is running Oracle Linux 6.5 or later, disable the EDAC module.

If your system is running Oracle Linux 7 or later, skip to **step 5**.

    a. Check to see if the EDAC module is enabled. Type the command:

```
lsmod | grep edac
```

If you see output like this, then the EDAC module is enabled, and you must disable it.

```
[root@ban25uut190 ~]# lsmod | grep edac
     @ sb_edac              3341  0
     @ edac_core           54168  0
```

If the `grep` does not find an instance of EDAC, skip to **step 4**.

b. To disable the EDAC module, type the commands:

```
rmmod sb_edac
rmmod edac_core
```

The EDAC module is disabled.

c. To prevent the EDAC module from restarting when the server is booted:

i. Add the following lines to the file `/etc/modprobe.d/blacklist.conf`:

```
blacklist sb_edac
blacklist edac_core
```

ii. Save the file.

4. If your system is running Oracle Linux 6.5, check to see if the mcelog service is installed and running.

If your system is running Oracle Linux 7, skip to **Step 5**.

Type the command:

`service mcelogd status`

You should see output similar to:

```
[root@hostname ~]# service mcelogd status    [ OK ]
Checking for mcelog
mcelog (pid 44912) is running...
```

- **If the service is installed and running, edit the mcelog.conf file and then restart the service, as follows:**

    a. Edit the `/etc/mcelog/mcelog.conf` file to uncomment the "`raw = yes`" entry.

    This provides the log information detail that Oracle Linux FMA requires.

    b. Edit the `/etc/mcelog/mcelog.conf` file to uncomment the "`memory-ce-threshold`" entry and change it to "`memory-ce-threshold = 3 / 72h`".

    This specifies when meclog should offline a memory page.

    c. Restart the service by typing the command:

    `service mcelogd restart`

- **If the service is installed but is not running, you need to edit the mcelog.conf file and then start the service, as follows:**

  a. **Edit the `/etc/mcelog/mcelog.conf` file to uncomment the "`raw = yes`" entry.**

     This provides the log information detail that Oracle Linux FMA requires.

  b. **Edit the `/etc/mcelog/mcelog.conf` file to uncomment the "`memory-ce-threshold`" entry and change it to "`memory-ce-threshold = 3 / 72h`".**

     This specifies when meclog should take a memory page offline.

  c. **Start the service by typing the command:**

     `service mcelogd start`

  d. **To have the service automatically start after a server reboot (so that you do not have to manually start it each time), also type the command:**

     `chkconfig --levels 345 mcelogd on`

- **If the mcelog service is not installed, you see an "unrecognized service" error. If so, you must install the mcelog service software package, edit the mcelog.conf file, and then start the service.**

  Oracle Linux provides the mcelog software distribution for use.

  a. **Install the service by typing the command:**

     `yum install mcelog`

  Note - If you are not using Yum, you must download and install the mcelog package (Oracle Linux 6.5 base version: `mcelog-1.0pre3_20120814_2-0.13.el6.x86_64.rpm`).

  ---

  b. **After successful installation, edit the `/etc/mcelog/mcelog.conf` file to uncomment the "`raw = yes`" entry.**

     This provides the log information detail that Oracle Linux FMA requires.

  c. **Edit the `/etc/mcelog/mcelog.conf` file to uncomment the "`memory-ce-threshold`" entry and change it to "`memory-ce-threshold = 3 / 72h`".**

     This specifies when meclog should take a memory page offline.

  d. **Start the service by typing the command:**

```
service mcelogd start
```

   e. **To have the service automatically start after a server reboot (so that you do not have to manually start it each time), also type the command:**

```
chkconfig --levels 345 mcelogd on
```

5. **If your system is running Oracle Linux 7, the mcelog service must be running in daemon mode only.**

   a. **Ensure the mcelog service is installed and running by typing the command:**

```
systemctl status mcelog
```

If mcelog is not installed, you see:

```
[root@testserver16 ~]# systemctl status mcelog
mcelog.service
   Loaded: not-found (Reason: No such file or directory)
   Active: inactive (dead)
```

   b. **If mcelog is not installed, install mcelog using yum by typing the command:**

```
yum install mcelog
```

After successful installation, proceed to the next step.

   c. **Edit the `/etc/mcelog/mcelog.conf` file to do the folllowing:**

      i. **Uncomment the "raw=yes" entry.**

      ii. **Comment out the existing "memory-ce-threshold" entry and create a new entry that reads "memory-ce-threshold = 3 / 72h".**

   d. **If the file `/etc/mcelog/mcelog.setup` exists, edit it and comment out the existing "/usr/sbin/mcelog --ignorenodev --syslog --foreground" entry and make a new entry that reads "/usr/sbin/mcelog --daemon".**

   e. **Edit the `/etc/systemd/system/multi-usr.target.wants/mcelog.service` file to remove the "--syslog" from the "ExecStart" field. When this is done, the field should look like this:**

```
[Service]
Type=forking
ExecStartPre=/etc/mcelog/mcelog.setup
ExecStart=/usr/sbin/mcelog --daemon
```

```
StandardOutput=syslog
```

f. Apply the changes you have made by typing the command:

   `systemctl daemon-reload`

g. Restart the mcelog service by typing the command:

   `systemctl restart mcelog`

h. Confirm that mcelog is running in daemon mode by typing the command:

   `systemctl status mcelog`

   You should see the output similar to:

```
[root@testserver16 ~]# systemctl status mcelog
mcelog.service - Machine Check Exception Logging Daemon
   Loaded: loaded (/usr/lib/systemd/system/mcelog.service; enabled)
   Active: active (running) since Fri 2014-10-03 12:52:13 EDT; 6s ago
  Process: 3939 ExecStart=/usr/sbin/mcelog --daemon (code=exited,
status=0/SUCCESS)
  Process: 3935 ExecStartPre=/etc/mcelog/mcelog.setup (code=exited,
status=0/SUCCESS)
 Main PID: 3940 (mcelog)
   CGroup: /system.slice/mcelog.service
               |__3940 /usr/sbin/mcelog --daemon
```

Next Steps ■

■

▼ Install the Oracle Linux FMA Software as an Independent Component

Before You Begin ■ To install Oracle Linux FMA software, you must be logged in to your system with root privileges.

■ You must have already installed the required Oracle Linux packages as described in .

■ You must have downloaded and extracted the Oracle Hardware Management Pack software as described in

■ You must enable the "Host-to-ILOM Interconnect" feature on both the SP (using Oracle ILOM) and the host. See .

1. **Install the Oracle Hardware Management Pack software required to obtain `ilomconfig` and enable the Host-to-ILOM interconnect on the host.**

    Note - If you have already installed the hmp-libs and hmp-tools packages, you can skip to step c.

    a. **Install the hmp-libs package by typing the following command:**

        `rpm -ivh` /*extract-directory*/**packages/oracle-hmp-libs*rpm**

        where the *extract-directory* is where you extracted Oracle Hardware Management Pack software. The install script will install the required libraries.

    b. **Install the hmp-tools package by typing the following command:**

        `rpm -ivh` /*extract-directory*/**packages/oracle-hmp-tools*rpm**

        where the *extract-directory* is where you extracted Oracle Hardware Management Pack software. The install script will install the CLI tools.

    c. **Enable the Host-to-ILOM interconnect feature by typing the following command:**

        `/usr/sbin/ilomconfig enable interconnect`

2. **Install the Oracle Linux FMA software by typing the following command:**

    `rpm -ivh` /*extract-directory*/**packages/fm-***version***.el6.x86_64.rpm**

    where the *extract-directory* is where you extracted Oracle Hardware Management Pack software. The Linux install script installs and starts the Oracle Linux FMA software. The following is an output example of a successful installation:

    ```
    testsystem 214 #>rpm -ivh fm-2.0.4.0.0-1.el6.x86_64.rpm
    Preparing...######################################### [100%]
       1:fm ######################################### [100%]
    Host-to-ILOM interconnect is enabled
    /sbin/chkconfig --add fmd.init
    /sbin/chkconfig --add ksyseventd.init
    [  OK  ] ksyseventd: [  OK  ]
    [  OK  ] fmd: [  OK  ]
    testsystem 215 #>
    ```

    Note - If required, the Fault Manager installer prompts you for any missing OS components. Use Yum to install any OS components that are missing.

Next Steps

▼ **Confirm That the Oracle Linux FMA Software is Running**

■ You must be logged in to your system with root privileges to run Oracle Linux FMA commands.

■ You must have already installed the required Oracle Linux packages and Oracle Linux FMA software as described in the previous sections.

● **To confirm that the Linux Fault Manager is running, type the following command from the prompt:**

`# /opt/fma/fm/sbin/fmadm config`

You should see output listing the required fault management components and their status. For example:

```
MODULE   VERSION STATUS  DESCRIPTION
ext-event-transport  0.2 active  External FM event transport
fmd-self-diagnosis   1.0 active  Fault Manager Self-Diagnosis
ip-transport 1.1 active  IP Transport Agent
mce  1.0 active  Machine Check Translator
sysevent-transport   1.0 active  SysEvent Transport Agent
syslog-msgs  1.1 active  Syslog Messaging Agent
```

See Also *Oracle Linux Fault Management Architecture Software User's Guide*

▼ **Uninstall Components on a Linux Server**

1. **Determine which components you want to uninstall.**

   See "Available Packages for Linux" on page 72 for an overview of which packages are available for uninstallation.

   Note - You must uninstall `oracle-hmp-libs` after uninstalling all other packages. If you are uninstalling `oracle-hmp-snmp` you must also uninstall `oracle-hmp-hwmgmt`.

2. **Run the following command:**

   `rpm -e` *package name(s)*

   For example, to remove the hardware agent with SNMP plugins:

   `rpm -e oracle-hmp-snmp oracle-hmp-hwmgmt`

   No output appears by default.

▼ Configure the Software After Installation

● **Run the appropriate commands for the features that you want to configure.**

■ **On Oracle VM, the ipmi service must be started manually with the following command:**

`/sbin/service hmp-ipmi start`

■ **If `oracle-hmp-hwmgmt` is installed, enable and start the Hardware Management Agent with the following commands:**

`/sbin/chkconfig hwmgmtd on`

`/sbin/service hwmgmtd start`

■ **If `oracle-hmp-snmp` is installed, enable and start the SNMP daemon with the following commands:**

a. **To enable the SNMP daemon, run the following command:**

`/sbin/chkconfig snmpd on`

b. **To determine whether or not the daemon is running, run the following command:**

`/sbin/service snmpd status`

■ **If snmpd is running, type the following command to restart it:**

`/sbin/service snmpd restart`

■ **If snmpd is not running, type the following command to start it:**

`/sbin/service snmpd start`

■ **If `oracle-hmp-tools` is installed, enable the Host-to-ILOM Interconnect with the following steps:**

a. **Verify the system SP supports this feature with the following command.**

`/usr/sbin/ilomconfig list interconnect`

If SUBCOMMAND NOT SUPPORTED opens than this feature is not supported by your SP.

b. **Do one of the following:**

- **If you want to enable the interconnect automatically, use the following command:**

  `/usr/sbin/ilomconfig enable interconnect`

  This is the preferred method for configuring the interconnect.

- **If you want to enable the interconnect manually, use the following command:**

  `/usr/sbin/ilomconfig enable interconnect --ipaddress=`*x.x.x.x*` --netmask=x.x.x.x --hostipaddress=x.x.x.x`

- **If `oracle-hmp-tools` is installed, start the IPMI driver if not already running:**

  a. **Run the following command to see if IPMItool is running:**

     `/sbin/service ipmi status`

  b. **If IPMItool is not running, type the following command to start it:**

     `/etc/init.d/ipmi start`

Installing and Uninstalling Components Manually on a Windows Server

This section includes the following procedures:

Available Packages for Windows

The Hardware Management Pack download contains packages that can be used to install the components manually. The following list provides the names of these packages.

- `hmp-libs` - libraries required by Oracle Hardware Management Pack.

- `hmp-snmp` - Oracle Server Hardware SNMP plugins.

- `hmp-agents` - Oracle Server Hardware Management Agents.

- `hmp-tools` - Oracle Server CLI Tools.

- `hmp-tools-biosconfig`- Oracle Server CLI Tools `biosconfig`.

- `hmp-tools-ubiosconfig`- Oracle Server CLI Tools `ubiosconfig`. Only compatible with servers that have a UEFI BIOS and is part of Hardware Management Pack since version 2.2.1.

- `ipmiflash` - IPMIflash utility.

- `ipmitool` - IPMItool utility.

- `elxocmcore` - Emulex Fibre Channel support and drivers, part of Hardware Management Pack since version 2.2.1.

- `scli` - QLogic Fibre Channel Host Bus Adapter command line interface, part of Hardware Management Pack since version 2.2.1.

- `mstflint` - Mellanox InfiniBand Host Channel Adapter firmware burning and diagnostics tools, part of Hardware Management Pack since version 2.2.1.

▼ Install Components on a Windows Server

Before You Begin
- For Windows Server 2003 SP2 and earlier, the ISM driver must be installed. See "Installing the Sun IPMI System Management Driver 2.1" on page 89.

- For information on the Microsoft IPMI driver for Windows Server 2003 R2 and later, see `http://msdn.microsoft.com/en-us/library/aa391402(VS.85).aspx`

- If you plan to install SNMP agents, see `http://msdn.microsoft.com/en-us/library/aa379100(VS.85).aspx` .

- If your system includes QLogic, Emulex, or Mellanox adaptors, you must install the appropriate third-party utilities included with Hardware Management Pack. See "Available Packages for Windows" on page 84.

1. **Download the Hardware Management Pack and extract it.**

   The directory to which you extract the files is referred to as *extract-directory* for the remainder of this procedure.

2. **If you want to install only `ipmitool` or `ipmiflash`, see the following steps. If you also want to install the other Hardware Management Pack components, go to Step 4.**

   - **To install `ipmiflash`, do the following:**

      a. **Run the following command:**

        C:\> **msiexec /i** *extract-directory***package\ipmiflash*.msi**

        The installation GUI appears.

      b. **Click through installation screens to install `ipmiflash`.**

    ■ **To install `ipmitool`, do the following :**

      a. **Run the following command:**

        C:\> **msiexec /i** *extract-directory***packages\ipmitool*.msi**

      b. **Click through the installation screens to install `ipmitool`.**

3. **Determine which Hardware Management Pack components that you want to install. See "Available Packages for Windows" on page 84.**

Note - You must install `oracle-hmp-libs` with all `oracle-hmp` packages.

---

4. **To install the packages, use the following commands:**

    C:\> **msiexec /i** *extract-directory***packages\oracle-hmp-libs*msi**

    C:\> **msiexec /i** *extract-directory***packages***other components*

5. **For example, to install just the Hardware Management Agent and SNMP plugins:**

    C:\> **msiexec /i** *extract-directory***packages\oracle-hmp-libs*msi**

    C:\> **msiexec /i** *extract-directory***packages\oracle-hmp-agents*msi**

    The GUI installation screens appear for the packages that you chose to install.

6. **To install the packages, click through the installation screens.**

▼ Uninstall Components on a Windows Server

1. **Determine which components you want to uninstall. See "Available Packages for Windows" on page 84.**

2. **Run the following command:**

`msiexec /x \`*extract-directory*`\packages\`*package name(s)*

For example, to remove the hardware agent with SNMP plugins:

`msiexec /x \`*extract-directory*`\packages\oracle-hmp-agents*msi`

The uninstall GUI opens.

3. **To uninstall the packages, click through the uninstall screens .**

▼ Configure Software After Installation

● **Run the appropriate commands for the features that you want to configure.**

■ **If `oracle-hmp-hwmgmt` is installed, start the Hardware Management Agent using the following command:**

`C:\> net start "Oracle Server Hardware Management Agent"`

■ **If `oracle-hmp-snmp` is installed, start the SNMP daemon using the following commands:**

`C:\> net stop SNMP`

`C:\> net start SNMP`

■ **If `oracle-hmp-tools` is installed, enable the Host-to-ILOM Interconnect with the following steps:**

a. **Verify the system SP supports this feature with the following command.**

`C:\> ProgramFiles(x86)\Oracle\Oracle Hardware Management Pack\bin\ilomconfig list interconnect`

If `SUBCOMMAND NOT SUPPORTED` opens, then this feature is not supported by your SP.

b. **Install the RNDIS driver.**

■ **For a 32–bit system:**

`C:\> \`*extract-directory*`\drivers\rndis\32\installrndis ..\USB2SP.INF`

■ **For a 64–bit system:**

`C:\> \`*extract-directory*`\drivers\rndis\64\installrndis\ ..\USB2SP.INF`

   c. **Do one of the following:**

      ■ **If you want to enable the interconnect automatically, use the
         following command:**

         `C:\>` **`ProgramFiles(x86)\Oracle\Oracle Hardware Management Pack\bin`
         `\ilomconfig enable interconnect`**

         This is the preferred method for configuring the interconnect.

      ■ **If you want to enable the interconnect manually, use the following
         command:**

         `C:\>` **`ProgramFiles(x86)\Oracle\Oracle Hardware Management Pack\bin`
         `\ilomconfig enable interconnect --ipaddress=x.x.x.x --netmask=x.x.x.x --`
         `hostipaddress=x.x.x.x`**

Installing Drivers Manually

This section describes how to manually install drivers to enable IPMItool and Host-to-ILOM Interconnect functionality on Oracle Solaris 10 10/09.

The section contains the following topics:

- "Installing the Sun IPMI System Management Driver 2.1" on page 89
- "Installing the Host-to-ILOM Interconnect Driver" on page 92

Installing the Sun IPMI System Management Driver 2.1

Note - See the operating system (OS) support matrix in "Installing Components Using the Oracle Hardware Management Pack Installer" on page 25 to determine if you need this driver.

The Sun IPMI System Management Driver 2.1 allows communication between the Microsoft Windows host operating system (OS) and the Oracle ILOM service processor (SP) over an internal Keyboard Controller Style (KCS) interface. This driver is required for Microsoft Windows Server 2003 SP2 and earlier.

For later OS versions (including Microsoft Windows Server 2003 R2) the Microsoft-provided IPMI driver included in their Hardware Management Module provides the same functionality.

This section includes the following procedures:

- "Install Sun IPMI System Management Driver 2.1 Manually" on page 90
- "Perform an Unattended Installation of the Sun IPMI System Management Driver 2.1" on page 91
- "Verify `ipmitool` Installation" on page 92
- "Uninstall the Sun IPMI System Management Driver 2.1" on page 92

▼ Install Sun IPMI System Management Driver 2.1 Manually

The Sun IPMI System Management Driver 2.1 is included in the Hardware Management Pack download, in the Drivers directory. To install the Sun IPMI System Management Driver 2.1 for Microsoft Windows Server 2003 SP2 or earlier:

1. **Uninstall any previous versions of this driver:**

   a. **Right-click My Computer and select Properties.**

   b. **Select the Hardware tab and click Device Manager.**

   c. **Expand the System Devices section.**

   d. **Locate SUN IPMI System Management Driver and right-click this item.**

   e. **Select Uninstall and confirm the removal.**

2. **Open the Control Panel and select New Hardware.**

3. **Click Next.**

4. **Select Yes, I have already connected the hardware, and click Next.**

5. **Select Add a new hardware device from the displayed list, and click Next.**

6. **Select Install the hardware that I manually select from a list, and click Next.**

7. **Select System Devices, and click Next.**

8. **To specify the file system location where the `ism.inf` file is stored, click the Have Disk tab.**

9. **Navigate to the** *extraction-directory*`\oracle-hmp-`*version*`\drivers\ism\` **directory and choose the 32 or 64 bit driver depending on your OS.**

10. **Click OK to install the driver.**

▼ Perform an Unattended Installation of the Sun IPMI System Management Driver 2.1

This section describes how to perform unattended (no user interaction required) installation of the Sun IPMI System Management Driver 2.1 for Microsoft Windows Server 2003 SP2 or earlier. The Sun IPMI System Management Driver 2.1 is included in the Hardware Management Pack download, in the Drivers directory.

1. **Navigate to the directory containing the correct `ism.if` file:**

   - For the 32–bit driver:

     `cd \`*extraction-directory*`\oracle-hmp-`*version*`\drivers\ism\32`

   - For the 64–bit driver:

     `cd \`*extraction-directory*`\oracle-hmp-`*version*`\drivers\ism\64`

2. **From an administrator command shell (DOS), run the following command:**

   `isminst load ism.inf *ism`

   A window might open requesting that the unsigned driver be installed.

3. **Click Yes to install the driver.**
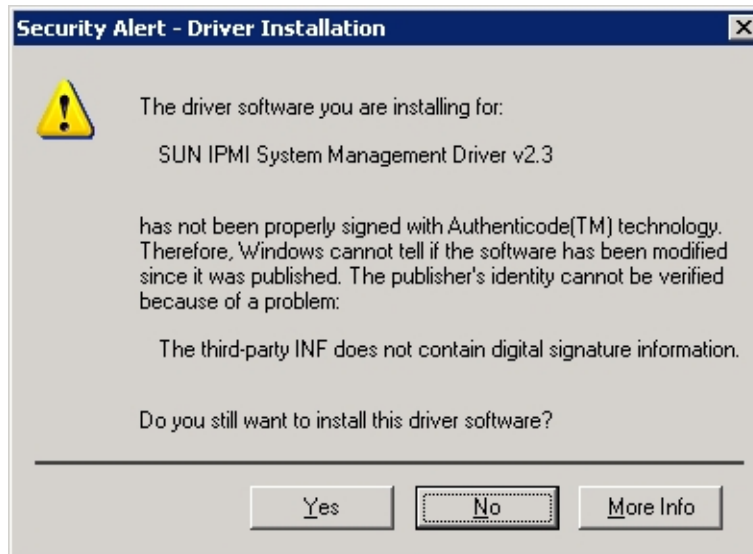
▼ Verify `ipmitool` Installation

1. **Navigate to the directory containing the correct `ism.if` file:**

- For the 32–bit driver:

   cd *extraction-directory***oracle-hmp-***version***drivers****ism****32**
- For the 64–bit driver:

   cd *extraction-directory***oracle-hmp-***version***drivers****ism****64**

2. **To obtain the status, run the following command :**
isminst.exe status *ism
You should see the following output:

```
ROOT\SYSTEM\0003: SUN IPMI System Management Driver v2.3    Driver is running.
```

If the driver is not running, the following output opens:

```
No matching devices found.
```

▼ Uninstall the Sun IPMI System Management Driver 2.1

1. **Navigate to the directory containing the correct `ism.if` file:**

- For the 32–bit driver:

   cd *extraction-directory***oracle-hmp-***version***drivers****ism****32**
- For the 64–bit driver:

   cd *extraction-directory***oracle-hmp-***version***drivers****ism****64**

2. **Run the following command:**
isminst remove *ism

Installing the Host-to-ILOM Interconnect Driver

The drivers described in this section must be installed if you are manually configuring the Host-to-ILOM Interconnect through `ilomconfig` or the Local Host Interconnect through the ILOM interface on a Windows system or Oracle Solaris OS 10 10/09 system.

You **do not** need to install this driver if:

- You have installed the Oracle Hardware Management Pack using the instructions in "Installing Components Using the Oracle Hardware Management Pack Installer" on page 25 and enabled the Host-to-ILOM Interconnect during the installation.
- You have installed the Oracle Hardware Management Pack using the manual instructions in "Installing Components Manually" on page 63 and chosen to install the Host-to-ILOM Interconnect features.
- You are running a Linux OS or a Solaris version other than the Oracle Solaris OS 10 10/09 (Oracle Solaris OS 10 9/10 contains the driver and Oracle Solaris OS 10 5/09 does not support this feature).

This section includes the following procedures:

▼ Install Host-to-ILOM Interconnect Drivers on a Oracle Solaris Server

1. **Check that your system is running Oracle Solaris OS 10 10/09 using the following command:**

   `cat /etc/release`

2. **Navigate to the packages directory in the management pack distribution.**

   `cd /`*extraction-directory*`/oracle-hmp-`*version*`/package`

3. **Install the driver using the following command:**

   `pkgadd -d . ORCLhmp-uecm`

▼ Uninstall Host-to-ILOM Interconnect Drivers on a Oracle Solaris Server

1. **On a system running Oracle Solaris OS 10 10/09, navigate to the packages directory in the management pack distribution.**

```
cd /extraction-directory/oracle-hmp-version/package
```

2. **Uninstall the driver using the following command:**

   ```
   pkgrm ORCLhmp-uecm
   ```

▼ Import the Security Certificate on a Windows Server

The security certificate ensures that you can install and enable the Host-to-ILOM Interconnect drivers on a Windows server. Without the security certificate imported, you receive an unsigned driver error during installation. This unsigned driver error could prevent you from installing Management Pack using console mode.

- **Run the following command:**

  ```
  certutil -f -addstore TrustedPublisher extraction-directory\drivers\rndis\USB2SP.CAT
  ```

▼ Install the Host-to-ILOM Interconnect Drivers on a Windows Server

The security certificate must be installed before installing Host-to-ILOM Interconnect drivers in console mode on a Windows server.

- **Depending on the Windows architecture, run one of the following commands:**

  - **For a 32–bit system:**

    ```
    \extraction-directory\drivers\rndis\32\installrndis ..\USB2SP.INF
    ```

  - **For a 64–bit system:**

    ```
    \extraction-directory\drivers\rndis\64\installrndis\ ..\USB2SP.INF
    ```

  You might receive a warning that the driver is unsigned, which can be ignored.

Software Dependencies

This section provides tables of the software dependencies for Hardware Management Pack components for each of supported operating system (OS). You must satisfy these dependencies before installing the component. For up-to-date information on package dependencies, refer to the *Oracle Hardware Management Pack 2.3 Release Notes*. For more information on installing packages, see your OS documentation.

Component Package Dependencies

Oracle Solaris 10

The following table shows the package dependencies for Hardware Management Pack components on a server running the Oracle Solaris 10 OS.

Component	Dependencies
`ipmiflash`	SUNWcslr SUNWopenssl-libraries SUNWcry SUNWlibmsr SUNWzlib
`ipmitool`	SUNWlibmsr SUNWcslr SUNWopenssl-libraries SUNWcry
`ORCLhmp-hwmgmt`	SUNWcslr SUNWgccruntime SUNWlibmsr SUNWlxml SUNWopenssl-libraries SUNWzlib SUNWcry ORCLhmp-libs
`ORCLhmp-libs`	SUNWcslr SUNWgccruntime SUNWlibmsr SUNWopenssl-libraries SUNWlxml SUNWzlib SUNWcry
`ORCLhmp-snmp`	SUNWlibmsr SUNWcslr SUNWgccruntime ORCLhmp-hwmgmt
`ORCLhmp-tools`	SUNWopenssl-libraries SUNWlxml SUNWlibmsr SUNWcslr SUNWgccruntime SUNWzlib SUNWcry ORCLhmp-libs
`ORCLhmp-tools-biosconfig` (x86)	SUNWcsl SUNWcslr SUNWlibmsr
`ORCLhmp-tools-ubiosconfig` (x86)	SUNWlxml SUNWlibmsr SUNWcslr SUNWopenssl-libraries SUNWzlib SUNWcry ORCLhmp-libs
`QConvergeConsoleCLI` (x86)	SUNWcfcl SUNWcsl SUNWcslr SUNWcsr SUNWdpl SUNWlibms SUNWlibmsr
`QConvergeConsoleCLI` (SPARC)	SUNWbcp SUNWcfcl SUNWcsl SUNWcslr SUNWcsr SUNWdpl SUNWlibms SUNWlibmsr

Component	Dependencies
ELXocmcore	SUNWcslr SUNWcfcl SUNWlibmsr

Oracle Solaris 11

The following table shows the package dependencies for Hardware Management Pack components on a server running the Oracle Solaris 11 OS.

Note - Refer to the "Prerequisites" on page 27 section of this guide that describes setting up your package repository so that required packages can be obtained during Oracle Hardware Management Pack installation.

Component	Dependencies
ipmitool	math openssl
hmp-ipmiflash	library openssl math
hmp-libs	library linker math gcc-45-runtime openssl libxml2 hmp-libs zlib gcc-3-runtime
hmp-hwmgmt	hmp-libs library gcc-45-runtime math libxml2 linker openssl zlib
hmp-snmp	hmp-libs hmp-hwmgmt math gcc-45-runtime net-snmp
hmp-tools	hmp-libs
hmp-tools-biosconfig (x86)	hmp-libs xsvc gcc-45-runtime
hmp-tools-ubiosconfig (x86)	hmp-libs
QConvergeConsoleCLI (x86)	library math snia-hbaapi linker
QConvergeConsoleCLI (SPARC)	profiled-libc SUNWcs library math hbaapi

Oracle Linux 4.x or Red Hat Enterprise Linux 4.x

The following table shows the package dependencies for Hardware Management Pack components on a server running Oracle Linux 4.x or Red Hat Enterprise Linux 4.x.

Component	Dependencies
ipmiflash	e2fsprogs glibc krb5-libs zlib ncurses readline
ipmitool	e2fsprogs glibc krb5-libs ncurses readline zlib
mstflint	libgcc glibc libstdc++ zlib

Component	Dependencies
oracle-hmp-hwmgmt	glibc libxml2 zlib e2fsprogs libaio krb5-libs net-snmp-libs oracle-hmp-libs
oracle-hmp-libs	glibc zlib libaio e2fsprogs krb5-libs libxml2 libgcc libstdc++
oracle-hmp-snmp	glibc net-snmp oracle-hmp-hwmgmt
oracle-hmp-tools	e2fsprogs glibc libaio krb5-libs libxml2 zlib net-tools oracle-hmp-libs
oracle-hmp-tools-biosconfig	glibc2fsprogs glibc krb5-libs libxml2 zlib
oracle-hmp-tools-ubiosconfig	e2fsprogs glibc libaio krb5-libs libxml2 zlib oracle-hmp-libs
oracle-hmp-firmware-check	e2fsprogs glibc krb5-libs libxml2 zlib
oracle-hmp-wdt (watchdog timer)	e2fsprogs glibc krb5-libs libusb libxml2 zlib
QConvergeConsoleCLI (Qlogic fibre)	glibc libgcc libstdc++ e2fsprogs krb5-libs

Oracle Linux 5.x or Red Hat Enterprise Linux 5.x

The following table shows the package dependencies for Hardware Management Pack components on a server running Oracle Linux 5.x or Red Hat Enterprise Linux 5.x.

Note - For Oracle Hardware Management Pack 2.3.3 or higher, ensure you are running a Linux kernel version of 2.6.32 or higher.

Component	Dependencies
elxocmcore (Emulex fibre)	glibc libgcc libstdc++ zlib audit-libs pam libnl openssl libselinux libsepol tcp_wrappers bzip2-libs elfutils-libelf net-snmp-libs nspr popt rpm-libs lm_sensors sqlite libsysfs perl
ipmiflash	openssl glibc ncurses readline zlib
ipmitool	openssl glibc ncurses readline zlib
mstflint	glibc libgcc libstdc++ zlib
oracle-hmp-hwmgmt	glibc openssl libaio libxml2 zlib net-snmp-libs oracle-hmp-libs
oracle-hmp-libs	glibc zlib libaio openssl libxml2 libgcc libstdc++
oracle-hmp-snmp	glibc net-snmp oracle-hmp-hwmgmt
oracle-hmp-tools	openssl glibc libaio libxml2 zlib net-tools oracle-hmp-libs
oracle-hmp-tools-biosconfig	openssl glibc libxml2 zlib
oracle-hmp-tools-ubiosconfig	openssl glibc libaio libxml2 zlib oracle-hmp-libs
oracle-hmp-firmware-check	glibc zlib openssl libxml2
oracle-hmp-wdt (watchdog timer)	openssl glibc libusb libxml2 zlib libusb

Component	Dependencies
QConvergeConsoleCLI (Qlogic fibre)	glibc libgcc libstdc++ e2fsprogs-libs keyutils-libs libselinux libsepol elxocmlibhbaapi krb5-libs

Oracle Linux 6.x or Red Hat Enterprise Linux 6.x

The following table shows the package dependencies for Hardware Management Pack components on a server running Oracle Linux 6.x or Red Hat Enterprise Linux 6.x.

Note - For Oracle Hardware Management Pack 2.3.3 or higher, ensure you are running a Linux kernel version of 2.6.32 or higher.

Component	Dependencies
elxocmcore (Emulex fibre)	glibc libgcc zlib elxocmcorelibs libstdc++ audit-libs nss-softokn-freebl libnl pam pciutils-libs elxocmlibhbaapi libacl libattr bzip2-libs libcap db4 nspr popt libselinux tcp_wrappers-libs openssl elfutils-libelf lua xz-libs net-snmp-libs nss-util rpm-libs lm_sensors-libs perl-libs
ipmiflash	glibc ncurses-libs readline zlib openssl
ipmitool	glibc ncurses-libs readline zlib openssl
mstflint	glibc libgcc zlib libstdc++
oracle-hmp-hwmgmt	policycoreutils policycoreutils-python glibc zlib libxml2 libaio openssl net-snmp-libs oracle-hmp-libs
oracle-hmp-libs	glibc zlib libaio openssl libxml2 libgcc libstdc++
oracle-hmp-snmp	glibc net-snmp oracle-hmp-hwmgmt
oracle-hmp-tools	libaio glibc zlib openssl libxml2 net-tools oracle-hmp-libs
oracle-hmp-tools-biosconfig	glibc zlib openssl libxml2
oracle-hmp-tools-ubiosconfig	libaio glibc zlib openssl libxml2
fm (Linux FMA)	mcelog OpenIPMI glibc zlib fm libxml2
oracle-hmp-firmware-check	glibc zlib openssl libxml2
oracle-hmp-wdt (watchdog timer)	glibc pciutils-libs zlib openssl libusb libxml2 libusb
QConvergeConsoleCLI (Qlogic fibre)	glibc nss-softokn-freebl libgcc libstdc++ libcom_err krb5-libs keyutils-libs libselinux

Oracle Linux 7.x or Red Hat Enterprise Linux 7.x

The following table shows the package dependencies for Hardware Management Pack components on a server running Oracle Linux 7.x or Red Hat Enterprise Linux 7.x.

Component	Dependencies
elxocmcore (Emulex fibre)	audit-libs glibc libgcc libnl pam pciutils-libs libstdc++ zlib libacl libattr bzip2-libs libcap libcom_err openssl-libs libdb elfutils-libelf nss-softokn-freebl krb5-libs keyutils-libs lua xz-libs net-snmp-agent-libs net-snmp-libs nspr nss-util pcre popt rpm-libs libselinux lm_sensors-libs tcp_wrappers-libs perl-libs
ipmiflash	openssl-libs glibc ncurses-libs readline zlib
ipmitool	openssl-libs glibc ncurses-libs readline zlib
mstflint	glibc libgcc libstdc++ zlib
oracle-hmp-hwmgmt	glibc libaio openssl-libs xz-libs libxml2 zlib libcom_err krb5-libs keyutils-libs net-snmp-libs pcre libselinux policycoreutils-python
oracle-hmp-libs	glibc libaio openssl-libs xz-libs libxml2 zlib libgcc libstdc++
oracle-hmp-snmp	glibc net-snmp
oracle-hmp-tools	glibc libaio openssl-libs xz-libs libxml2 zlib net-tools
oracle-hmp-tools-biosconfig	libaio openssl-libs glibc xz-libs libxml2 zlib
oracle-hmp-tools-ubiosconfig	libaio openssl-libs glibc xz-libs libxml2 zlib
fm (Linux FMA)	glibc xz-libs libxml2 zlib mcelog OpenIPMI
oracle-hmp-firmware-check	glibc openssl-libs xz-libs libxml2 zlib
oracle-hmp-wdt (watchdog timer)	openssl-libs glibc xz-libs pciutils-libs libusb libusbx libxml2 zlib libusb
QConvergeConsoleCLI (Qlogic fibre)	glibc libcom_err nss-softokn-freebl libgcc krb5-libs keyutils-libs xz-libs pcre libselinux libstdc++

Oracle VM 3.2.x or earlier version of Oracle VM 3

The following table shows the package dependencies for Hardware Management Pack components on a server running Oracle VM version 3.2.x or earlier version of Oracle VM 3.

Note - The required lm_sensors, net-snmp, net-snmp-libs, and perl packages are available from the Oracle Linux 5 x86 64-bit installation media.

Component	Dependencies
elxocmcore	glibc libnl elxocmcore libgcc libhbaapi-devel libstdc++ openssl libselinux libsepol tcp_wrappers bzip2-libs elfutils-libelf net-snmp-libs nspr popt rpm-libs lm_sensors sqlite libsysfs zlib perl e2fsprogs-libs keyutils-libs krb5-libs
ipmiflash	openssl glibc zlib
ipmitool	openssl glibc ncurses readline zlib
mstflint	glibc libgcc libstdc++ zlib

Component	Dependencies
oracle-hmp-hwmgmt	glibc openssl libaio libxml2 zlib oracle-hmp-libs lm_sensors net-snmp net-snmp-libs perl
oracle-hmp-snmp	glibc net-snmp oracle-hmp-hwmgmt lm_sensors net-snmp net-snmp-libs perl
oracle-hmp-libs	glibc zlib libaio openssl libxml2 libgcc libstdc++
oracle-hmp-tools	openssl glibc libaio libxml2 zlib oracle-hmp-libs
oracle-hmp-tools-biosconfig	glibc
oracle-hmp-tools-ubiosconfig	openssl glibc libaio libxml2 zlib oracle-hmp-libs
QConvergeConsoleCLI	glibc e2fsprogs-libs libgcc keyutils-libs libselinux libsepol krb5-libs libstdc++

Oracle VM 3.3.x

The following table shows the package dependencies for Hardware Management Pack components on a server running Oracle VM 3.3.x based on Oracle Linux 6.

Component	Dependencies
elxocmcore (Emulex fibre)	glibc libgcc zlib elxocmcorelibs libstdc++ audit-libs nss-softokn-freebl libnl pam pciutils-libs elxocmlibhbaapi libacl libattr bzip2-libs libcap db4 nspr popt libselinux tcp_wrappers-libs openssl elfutils-libelf lua xz-libs net-snmp-libs nss-util rpm-libs lm_sensors-libs perl-libs
ipmiflash	glibc ncurses-libs readline zlib openssl
ipmitool	glibc ncurses-libs readline zlib openssl
mstflint	glibc libgcc zlib libstdc++
oracle-hmp-hwmgmt	glibc zlib libxml2 libaio openssl net-snmp-libs
oracle-hmp-libs	glibc zlib libaio openssl libxml2 libgcc libstdc++
oracle-hmp-snmp	glibc net-snmp
oracle-hmp-tools	libaio glibc zlib openssl libxml2 net-tools
oracle-hmp-tools-biosconfig	glibc zlib openssl libxml2
oracle-hmp-tools-ubiosconfig	libaio glibc zlib openssl libxml2
fm (Linux FMA)	mcelog OpenIPMI glibc zlib fm libxml2
oracle-hmp-firmware-check	glibc zlib openssl libxml2
oracle-hmp-wdt (watchdog timer)	glibc pciutils-libs zlib openssl libusb libxml2 libusb
QConvergeConsoleCLI (Qlogic fibre)	glibc nss-softokn-freebl libgcc libstdc++ libcom_err krb5-libs keyutils-libs libselinux

SUSE Linux Enterprise Server 10.x

The following table shows the package dependencies for Hardware Management Pack components on a server running SUSE Linux Enterprise Server 10.x.

Component	Dependencies
elxocmcore (Emulex fibre)	glibc-32bit libgcc libstdc++ libnl bzip2 sysfsutils tcpd zlib openssl net-snmp popt rpm sensors
ipmiflash	glibc ncurses readline openssl
ipmitool	glibc ncurses readline openssl
oracle-hmp-hwmgmt	glibc zlib libxml2 libaio openssl oracle-hmp-libs
oracle-hmp-libs	glibc libaio zlib openssl libxml2 libgcc libstdc++
oracle-hmp-snmp	glibc net-snmp oracle-hmp-hwmgmt
oracle-hmp-tools	glibc zlib libaio openssl libxml2 net-tools oracle-hmp-libs
oracle-hmp-tools-biosconfig	glibc zlib openssl libxml2
oracle-hmp-tools-ubiosconfig	glibc zlib libaio openssl libxml2 oracle-hmp-libs
oracle-hmp-firmware-check	glibc zlib openssl libxml2
oracle-hmp-wdt (watchdog timer)	glibc zlib openssl libusb libxml2
QConvergeConsoleCLI (Qlogic fibre)	glibc libcom_err libgcc krb5 libstdc++

SUSE Linux Enterprise Server 11.x

The following table shows the package dependencies for Hardware Management Pack components on a server running SUSE Linux Enterprise Server 11.x.

Component	Dependencies
elxocmcore (Emulex fibre)	glibc-32bit libgcc43-32bit libstdc++43-32bit libnl libbz2-1 popt libselinux1 sysfsutils tcpd zlib perl libopenssl0_9_8 libsnmp15 rpm libsensors3
ipmiflash	glibc libncurses5 libreadline5 zlib libopenssl0_9_8
ipmitool	glibc libncurses5 libreadline5 zlib libopenssl0_9_8
mstflint	glibc libgcc43 zlib libstdc++43
oracle-hmp-hwmgmt	glibc zlib libxml2 libaio libopenssl0_9_8 oracle-hmp-libs
oracle-hmp-libs	glibc libaio zlib libopenssl0_9_8 libxml2 libgcc43 libstdc++43
oracle-hmp-snmp	glibc net-snmp oracle-hmp-hwmgmt
oracle-hmp-tools	libaio glibc zlib libopenssl0_9_8 libxml2 net-tools oracle-hmp-libs

Component	Dependencies
oracle-hmp-tools-biosconfig	glibc zlib libopenssl0_9_8 libxml2
oracle-hmp-tools-ubiosconfig	libaio glibc zlib libopenssl0_9_8 libxml2 oracle-hmp-libs
oracle-hmp-firmware-check	glibc zlib openssl libxml2
oracle-hmp-wdt (watchdog timer)	glibc zlib libopenssl0_9_8 libxml2
QConvergeConsoleCLI (Qlogic fibre)	glibc libcom_err2 libgcc43 keyutils-libs krb5 libstdc++43

SUSE Linux Enterprise Server 12.x

The following table shows the package dependencies for Hardware Management Pack components on a server running SUSE Linux Enterprise Server 12.x.

Component	Dependencies
ipmiflash	glibc libopenssl1_0_0 libncurses5 libreadline6 libz1
ipmitool	glibc libopenssl1_0_0 libncurses5 libreadline6 libz1
mstflint	glibc libgcc_s1 libz1 libstdc++6
oracle-hmp-hwmgmt	libaio1 glibc libopenssl1_0_0 libz1 liblzma5 libxml2-2 libsnmp30
oracle-hmp-libs	glibc libaio1 libopenssl1_0_0 libz1 liblzma5 libxml2-2 libgcc_s1 libstdc++6
oracle-hmp-snmp	glibc net-snmp oracle-hmp-hwmgmt
oracle-hmp-tools	glibc libaio1 libopenssl1_0_0 libz1 liblzma5 libxml2-2 net-tools oracle-hmp-libs
oracle-hmp-tools-biosconfig	libaio1 glibc libopenssl1_0_0 libz1 liblzma5 libxml2-2
oracle-hmp-tools-ubiosconfig	libaio1 glibc libopenssl1_0_0 libz1 liblzma5 libxml2-2 oracle-hmp-libs
oracle-hmp-firmware-check	libopenssl1_0_0 glibc libz1 liblzma5 libxml2-2
oracle-hmp-wdt (watchdog timer)	glibc libopenssl1_0_0 libpci3 libz1 liblzma5 libudev1 libusb-0_1-4 libusb-1_0-0 libxml2-2
QConvergeConsoleCLI (Qlogic fibre)	glibc libcom_err2 libgcc_s1 libkeyutils1 libselinux1 krb5 libpcre1 libstdc++6

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