Netra Server X5-2 Administration Guide

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Contents

Using This Documentation

- **Overview** – Describes how to how to administer Oracle's Netra Server X5-2 using built-in utilities such as Oracle ILOM, OSA, and BIOS
- **Audience** – Technicians, system administrators, and authorized service providers
- **Required knowledge** – Advanced experience administering server firmware and software

Product Documentation Library

Documentation and resources for this product and related products are available at http://www.oracle.com/goto/netra-x5-2/docs.

Feedback

Provide feedback about this documentation at http://www.oracle.com/goto/docfeedback.

Understanding Administration Resources

Use these topics to understand the server's administration resources:

Related Information

- “Accessing Administration Tools” on page 19
- “Controlling the Server” on page 43
- “Configuring Power-On and Boot Options” on page 49
- “Configuring Oracle ILOM” on page 59
- “Configuring BIOS” on page 87
- “Enabling or Disabling OSA” on page 99
- “Monitoring the Server” on page 103
- “Updating the Firmware and Software” on page 127

Common Administration Tools

There are many tools you can use to administer the server. Each tool has unique capabilities, but some of the functions overlap. You can use each tool independently, or you can use the tools together for comprehensive server administration.

This table lists common administrative tools that are available on the server.

Note - For administrative tasks performed through the OS, refer to the documentation for your OS. For a list of supported OSs and links to documentation, refer to *Server OS Installation*.

Tool	Description	Available	Links
Oracle ILOM	A separate OS that is embedded in the SP. You can use Oracle ILOM to configure and manage the server components. Oracle ILOM enables you to locally or remotely connect to a dedicated port, a sideband port, or a local serial port.	As long as main power is applied, Oracle ILOM is always available even when the host is not powered on.	“Oracle ILOM Overview” on page 12
BIOS	Firmware that controls the server from power-on until an OS is booted. BIOS provides a setup utility that enables you to administer the server at the firmware level.	The BIOS Setup utility is accessible for a short period of time when BIOS initializes. It is not available once the server starts to boot the OS.	“BIOS Overview (Administration)” on page 14
OSA	A setup tool that is embedded in the USB drive inside the server. OSA enables you to locally or remotely update and configure the firmware and install supported OSes.	OSA is accessible for a short period of time when BIOS initializes. Once the OS is booted, you can mount the OSA as a file system.	“OSA Overview” on page 15
Oracle HMP	An add-on software pack that enables you to manage hardware through the host OS either remotely using SNMP, or remotely using the HMP tools by connecting to the host OS through a remote shell such as SSH, or locally using CLI tools.	Once installed, HMP is available from the host OS.	“HMP Overview” on page 16

Related Information

- “Oracle ILOM Overview” on page 12
- “BIOS Overview (Administration)” on page 14
- “OSA Overview” on page 15
- “HMP Overview” on page 16
- “Hardware RAID Administration Tools” on page 17
- “Multiple Server Management Tools” on page 18

Oracle ILOM Overview

Oracle Oracle ILOM is system management firmware that is preinstalled on the server's SP. Oracle ILOM enables you to manage and monitor the server, locally or remotely, independent of the full power state of the server. As soon as standby power is applied to the server, Oracle ILOM boots and is available.

You interact with Oracle ILOM using either a browser-based web interface or CLI. You can also configure Oracle ILOM for interaction through the SNMP and IPMI interfaces.

For comprehensive information about Oracle ILOM, refer to the Oracle ILOM 3.2 documentation at:

http://www.oracle.com/goto/ILOM/docs

This table lists Oracle ILOM features and functionality:

Oracle ILOM Feature	What You Can Do
Web interface and CLI	Display server information in a simple, standardized format that is common across Oracle platforms.
Dedicated service processor and resources	■ Manage the server without consuming system resources. ■ Manage the server using standby power even when the server is powered off.
Simple Oracle ILOM initial configuration	■ Configure the network address of the server SP or CMM using IPv4 and IPv6 default settings. ■ Configure BIOS behavior.
Downloadable firmware updates	Download firmware updates using the browser-based web interface.
Remote hardware monitoring	■ Monitor (Solaris) system logs. ■ Monitor event logs. ■ Monitor audit logs. ■ Monitor CRUs and FRUs, including power supplies, fans, HBAs, PCI devices, disks, CPUs, memory, and motherboard. ■ Monitor environmental temperatures (component temperatures).
Hardware and FRU inventory and presence	■ Identify installed CRUs and FRUs and their status. ■ Identify part numbers, versions, and product serial numbers. ■ Identify NIC card MAC addresses.
Remote KVMS	■ Redirect the system serial console through serial port and LAN. ■ Redirect the system keyboard, video, and mouse to a remote client browser. ■ Redirect the OS graphical console to a remote client browser. ■ Connect a remote CD, DVD, or floppy to the system for remote storage.
Host power control and monitoring	■ Power the host on or off, either locally or remotely. ■ Force power-off for emergency shutdown or perform a graceful shutdown to shut down the host OS before power-off. ■ Monitor power management and power history charts through the web interface.
Configuration and management of user accounts	■ Configure local user accounts. ■ Configure LDAP, LDAP/SSL, RADIUS, and Active Directory authentication.
Error and fault management	■ Log events in a consistent method for service data. ■ Monitor hardware and server-related errors, including ECC memory errors, reported on a dedicated user interface page, and into SP logs, syslog, and remote log host. ■ Oracle ILOM automatically clears most fault conditions after you perform a service action to address the fault.

Oracle ILOM Feature	What You Can Do
System alerts, including SNMP traps, IPMI PETs, and alerts	Monitor components using industry-standard SNMP commands and the IPMItool utility.

Related Information

- "Common Administration Tools" on page 11
- "BIOS Overview (Administration)" on page 14
- "OSA Overview" on page 15
- "HMP Overview" on page 16
- "Hardware RAID Administration Tools" on page 17
- "Multiple Server Management Tools" on page 18

BIOS Overview (Administration)

The server's BIOS firmware controls the server from power-on until an OS is booted.

For administration, BIOS provides the BIOS Setup utility which enables you to view server information, and to configure, enable and disable server components.

The server's BIOS can be configured to operate in one of these two modes:

- **Legacy BIOS (default)** – Supports all of the supported OSs, but does not offer the latest BIOS features.
- **UEFI BIOS** – Provides the latest BIOS features, but only supports these OSs:
  - Oracle Enterprise Linux
  - Oracle Solaris
  - Oracle VM
  - SUSE Linux Enterprise Server
  - Red Hat Enterprise Linux
  - Microsoft Windows

Note - Some storage devices do not yet support UEFI-based BIOS and can only boot from Legacy BIOS.

When using OSs that support booting only from Legacy BIOS, you must use Legacy Boot Mode. When using OSs that support booting from Legacy BIOS or a UEFI BIOS, you can configure the BIOS for either mode. However, once you choose a mode, and an OS is installed, the installation can only boot using the same mode that was used for the installation.

Ensure that the server's BIOS is configured for your desired mode before you install an OS. Refer to *Server OS Installation* for information about changing the BIOS mode.

Note - When switching between Legacy BIOS Mode and UEFI Boot Mode (either direction), the settings for a given mode do not persist.

You can use `ueficonfig` to capture and preserve the BIOS configuration if you intend to change the BIOS mode. For information about `ueficonfig`, refer to the Oracle ILOM documentation library at `http://www.oracle.com/goto/ILOM/docs`.

The advantages to choosing a UEFI-based BIOS installation include the following:

- Avoids Legacy Option ROM address constraints. For more information, see "Enable or Disable I/O Resource Allocation" on page 94.
- Supports OS boot partitions greater than 2 TB in size.
- PCIe device configuration utilities are integrated with BIOS Setup utility menus.
- Bootable OS images appear in the boot list as labeled entities. For example, Windows boot manager label versus raw device labels.

Related Information

- "Common Administration Tools" on page 11
- "Oracle ILOM Overview" on page 12
- "OSA Overview" on page 15
- "HMP Overview" on page 16
- "Hardware RAID Administration Tools" on page 17
- "Multiple Server Management Tools" on page 18

OSA Overview

OSA is a single-server management tool for Oracle servers. OSA is preinstalled on the USB drive inside the server.

OSA integrates various management products to provide a suite of tools that allow for the quick and convenient startup and management of your server.

The components of OSA include:

- OSA application
- HMP (if installed. See "HMP Overview" on page 16)
- Oracle Linux command-line environment

- OS software, drivers, and tools
- Server-specific firmware

You can use OSA to obtain updates to OSA, server firmware, and drivers.

OSA provides a GUI from which you can access features and complete tasks with or without an OS installed on the server. Once the OS is running on the server, the OSA tools and drivers appear as files on a typical storage device.

OSA can help you perform these tasks:

- Get the latest available BIOS, Oracle ILOM, firmware, and drivers from Oracle (an Internet connection is required).
- Update BIOS, Oracle ILOM, and Oracle-certified device drivers for optional accessory cards and other server hardware.
- Configure RAID 0 or RAID 1 for servers that contain a supported LSI disk controller.
- Configure the SP, including modifying identification information; configure network settings (IPv4 and IPv6) and DNS; add, delete, or modify users; and set the service processor clock.
- Install certain OSs with the latest drivers and supported tools.
- Display server overview and hardware inventory information.
- Set the keyboard language.
- Access a Linux shell terminal window allowing use of the runtime environment.
- Access HMP (using the Linux shell).

Related Information

- “Common Administration Tools” on page 11
- “Oracle ILOM Overview” on page 12
- “BIOS Overview (Administration)” on page 14
- “HMP Overview” on page 16
- “Hardware RAID Administration Tools” on page 17
- “Multiple Server Management Tools” on page 18

HMP Overview

Oracle HMP features two components for managing servers:

- An SNMP monitoring agent
- A family of cross-OS CLI Tools

With the HMP agent SNMP plug-ins, you can use SNMP to monitor Oracle servers and server modules in your data center with the advantage of not having to connect to two management points, the host and Oracle ILOM. This functionality enables you to use a single IP address (the host's IP) to monitor multiple servers and server modules.

HMP Agent SNMP plug-ins run on the host OS of Oracle servers. The SNMP plug-ins interface with the service processor and also with the host storage subsystem to gather monitoring information. By regularly polling the service processor, information about the current state of the server is automatically fetched by the Hardware Management Agent.

You use the Oracle Server CLI tools to perform these activities:

- Configure BIOS settings, the device boot order, and some SP settings.
- Update Oracle ILOM and BIOS.
- Manage SAS storage device firmware and drivers.
- Restore, set, and view Oracle ILOM configuration settings.
- View or create RAID volumes on storage drives that are attached to RAID controllers, including storage arrays.
- Monitor the health of the server.

For more information about obtaining and using HMP, refer to the Oracle HMP documentation library at: `http://www.oracle.com/goto/OHMP/docs`

Related Information

- "Common Administration Tools" on page 11
- "Oracle ILOM Overview" on page 12
- "BIOS Overview (Administration)" on page 14
- "OSA Overview" on page 15
- "Hardware RAID Administration Tools" on page 17
- "Multiple Server Management Tools" on page 18

Hardware RAID Administration Tools

Depending on the HBA installed in the server, you can configure hardware RAID volumes using a variety of RAID levels.

Note - If the boot drive is included in your RAID configuration, you must configure RAID before installing the OS.

Use these resources for creating and managing the RAID resources in your server:

- **OSA** – You can use OSA to create RAID 0 or 1 level volumes and prepare drives for OS installation. Refer to *Server OS Installation*, configuring RAID.
- **Oracle HMP** – You can use the `raidconfig` commands contained in this software's Oracle Server CLI Tools component to create and manage RAID volumes on your server. Refer to the Oracle HMP documentation at `http://www.oracle.com/goto/OHMP/docs`.
- **LSI MegaRAID Storage Manager** – You can use the MegaRAID Storage Manager graphical interface to configure and manage RAID volumes.

  You can download the MegaRAID Storage Manager software from this location: `http://www.lsi.com/sep/Pages/oracle/index.aspx`

Related Information

- "Common Administration Tools" on page 11
- "Oracle ILOM Overview" on page 12
- "BIOS Overview (Administration)" on page 14
- "OSA Overview" on page 15
- "HMP Overview" on page 16
- "Multiple Server Management Tools" on page 18

Multiple Server Management Tools

If you need to perform management functions across several systems simultaneously, you might want to use Oracle Enterprise Manager Ops Center. You can order Oracle Enterprise Manager Ops Center software from Oracle.

Refer to the Oracle Enterprise Manager Ops Center product information at: `http://www.oracle.com/us/products/enterprise-manager/index.html`

Related Information

- "Common Administration Tools" on page 11
- "Oracle ILOM Overview" on page 12
- "BIOS Overview (Administration)" on page 14
- "OSA Overview" on page 15
- "HMP Overview" on page 16
- "Hardware RAID Administration Tools" on page 17

Accessing Administration Tools

Use these topics to access the server's administration tools:

- “Accessing Oracle ILOM” on page 19
- “Accessing BIOS” on page 28
- “Accessing OSA” on page 35
- “Access Add-On Card Configuration Utilities (BIOS)” on page 39

Related Information

- “Understanding Administration Resources” on page 11
- “Controlling the Server” on page 43
- “Configuring Power-On and Boot Options” on page 49
- “Configuring Oracle ILOM” on page 59
- “Configuring BIOS” on page 87
- “Enabling or Disabling OSA” on page 99
- “Monitoring the Server” on page 103
- “Updating the Firmware and Software” on page 127

Accessing Oracle ILOM

Oracle ILOM is available when the server is in these modes:

- Standby power mode
- During BIOS initialization
- While the OS is booting
- Fully powered on and booted

For more information about power modes, see “Controlling the Power State” on page 43.

Use one of these methods to access Oracle ILOM:

Description	Links
Log in to and out of the Oracle ILOM web interface.	"Log In To the Oracle ILOM Web Interface" on page 20 "Log Out of Oracle ILOM" on page 27
Access the Remote Console through the Oracle ILOM web interface.	"Access the Remote Console (Web Interface)" on page 21
Log in to and out of the Oracle ILOM CLI through a network connection.	"Log In To the Oracle ILOM CLI (NET MGT)" on page 23 "Log Out of Oracle ILOM" on page 27
Log in to and out of the Oracle ILOM CLI directly through a terminal device connected to the SER MGT port.	"Log In To the Oracle ILOM CLI (SER MGT)" on page 24 "Log Out of Oracle ILOM" on page 27
Switch from the Oracle ILOM CLI to the host console and back.	"Switch Between the Oracle ILOM CLI and the Host Console" on page 24
Use KVMS.	"Enable KVMS" on page 25.

Related Information

- Oracle ILOM documentation library at: `http://www.oracle.com/goto/ILOM/docs`
- "Configuring Oracle ILOM" on page 59
- "Updating the Firmware and Software" on page 127

▼ Log In To the Oracle ILOM Web Interface

1. **Ensure that you have network access to the server's SP.**

   See *Server Installation*, available connections.

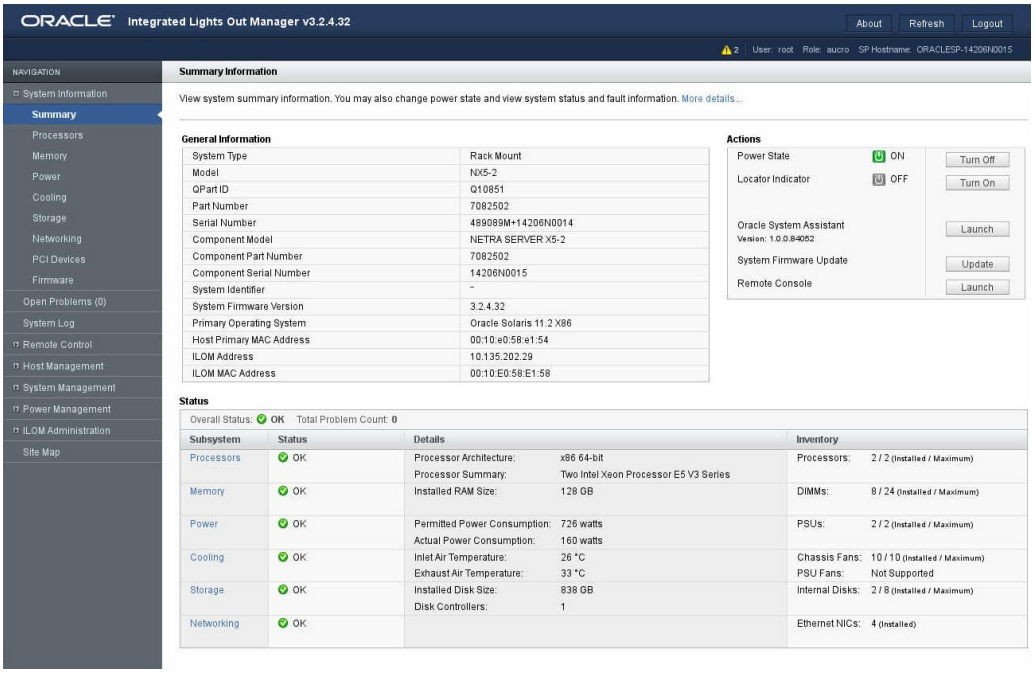
2. **Type the IP address of the server's SP into a web browser's address field.**

3. **Type your Oracle ILOM user name and password.**

   The default user name is `root` and the default password is `changeme`.

4. **Click Log In.**

The Summary Information page is displayed.



Related Information

- Oracle ILOM documentation library at: `http://www.oracle.com/goto/ILOM/docs`
- “Access the Remote Console (Web Interface)” on page 21
- “Log In To the Oracle ILOM CLI (NET MGT)” on page 23
- “Log In To the Oracle ILOM CLI (SER MGT)” on page 24
- “Switch Between the Oracle ILOM CLI and the Host Console” on page 24
- “Enable KVMS” on page 25
- “Log Out of Oracle ILOM” on page 27

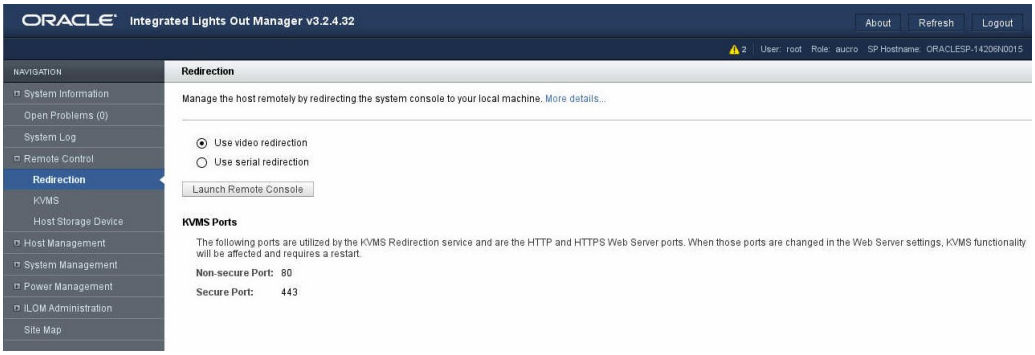
▼ Access the Remote Console (Web Interface)

Use this procedure to access the Remote Console through the Oracle ILOM web interface.

1. **Log in to the Oracle ILOM web interface.**
   See “Log In To the Oracle ILOM Web Interface” on page 20.

2. **Navigate to the Remote Control → Redirection page.**

   The Redirection page is displayed.



3. **Select either video or serial redirection.**

4. **Click Launch Remote Console.**

   A separate window is displayed. The information displayed in the Remote Console differs based on the state of the host.

   - **Host is powered off** – Blank screen.
   - **Host is booting** – BIOS initialization windows are displayed. During this activity, you can enter various BIOS keys to enter the BIOS Setup utility or start OSA. See "BIOS Key Mappings" on page 28.
   - **Host OS is booted** – A message appears prompting you to specify user credentials for the installed OS.

5. **(Optional) Log out of Oracle ILOM.**

   See "Log Out of Oracle ILOM" on page 27.

Related Information

- Oracle ILOM documentation library at: `http://www.oracle.com/goto/ILOM/docs`
- "Log In To the Oracle ILOM Web Interface" on page 20
- "Log In To the Oracle ILOM CLI (NET MGT)" on page 23
- "Log In To the Oracle ILOM CLI (SER MGT)" on page 24
- "Switch Between the Oracle ILOM CLI and the Host Console" on page 24
- "Enable KVMS" on page 25
- "Log Out of Oracle ILOM" on page 27

▼ Log In To the Oracle ILOM CLI (NET MGT)

Use this method to log in to the Oracle ILOM CLI when you are logging in over the network.

1. **Access a terminal device that is connected to the network for which the SP is connected.**

2. **Log in to the server's SP using an SSH session.**

   Use this syntax:

   $ **ssh** *username@SP_IPaddress*

   where *username* is a user account and *SP_IPaddress* is the IP address of the SP.

   Note - When you specify an IPv6 address to log in to Oracle ILOM using SSH, do not enclose the IPv6 address in brackets.

   The default user name is `root` and the default password is `changeme`.

   The CLI prompt appears (-> is the default prompt). You are connected to the SP where you perform Oracle ILOM CLI commands.

   For example:

```
% ssh root@10.153.113.77
Password:

Oracle(R) Integrated Lights Out Manager

Version 3.2.4.32 r97913

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Warning: password is set to factory default.

Hostname: ORACLESP-12345N6789

->
```

Related Information

- Oracle ILOM documentation library at: `http://www.oracle.com/goto/ILOM/docs`
- “Log In To the Oracle ILOM Web Interface” on page 20
- “Access the Remote Console (Web Interface)” on page 21
- “Log In To the Oracle ILOM CLI (SER MGT)” on page 24
- “Switch Between the Oracle ILOM CLI and the Host Console” on page 24
- “Enable KVMS” on page 25

- “Log Out of Oracle ILOM” on page 27

Log In To the Oracle ILOM CLI (SER MGT)

Use this method to log in to the Oracle ILOM CLI when you are directly attached to the SER MGT port.

1. **Ensure that you have a terminal device attached to the SER MGT port.**
   The SER MGT port default configuration is set up for 9600 baud, 8 bit, no parity, 1 stop bit.
2. **Press Enter on the terminal device.**
   This action establishes a connection to Oracle ILOM on the SP.
3. **If prompted, log in to the Oracle ILOM CLI with a valid ID account and password.**
   The default Oracle ILOM account is `root` and the default password is `changeme`.
   The Oracle ILOM prompt is displayed.

Related Information

- Oracle ILOM documentation library at: `http://www.oracle.com/goto/ILOM/docs`
- “Log In To the Oracle ILOM Web Interface” on page 20
- “Access the Remote Console (Web Interface)” on page 21
- “Log In To the Oracle ILOM CLI (NET MGT)” on page 23
- “Switch Between the Oracle ILOM CLI and the Host Console” on page 24
- “Enable KVMS” on page 25
- “Log Out of Oracle ILOM” on page 27

Switch Between the Oracle ILOM CLI and the Host Console

When you are logged into the Oracle ILOM CLI, you can switch your connection to the host.

Tip - If you want to connect to the Oracle ILOM CLI and access the host console simultaneously, start two CLI sessions. Use one of the sessions to access the host console. Use the other session to access the Oracle ILOM CLI.

1. **Log in to the Oracle ILOM CLI.**

See “Log In To the Oracle ILOM CLI (NET MGT)” on page 23 or “Log In To the Oracle ILOM CLI (SER MGT)” on page 24.

2. **From Oracle ILOM, access the host.**

```
-> start /HOST/console
Are you sure you want to start /HOST/console (y/n)? y

Serial console started.  To stop, type ESC (
```

The information displayed differs based on the state of the host:

- **Host is powering off** – `Serial console stopped.`
- **Host is powered off** – Nothing is displayed.
- **Host is booting** – BIOS initialization windows are displayed. During this activity, you can enter various BIOS keys to enter the BIOS Setup utility or start OSA. See “BIOS Key Mappings” on page 28.
- **Host OS is booted** – A message appears prompting you to specify user credentials.

3. **To switch back to Oracle ILOM, type:**

```
ESC (
```

Related Information

- Oracle ILOM Documentation library at: `http://www.oracle.com/goto/ILOM/docs`
- “Log In To the Oracle ILOM Web Interface” on page 20
- “Access the Remote Console (Web Interface)” on page 21
- “Log In To the Oracle ILOM CLI (NET MGT)” on page 23
- “Log In To the Oracle ILOM CLI (SER MGT)” on page 24
- “Enable KVMS” on page 25
- “Log Out of Oracle ILOM” on page 27

▼ Enable KVMS

The Oracle ILOM Remote Console, available from the web interface, provides remote redirection for a keyboard, video, mouse, and storage.

1. **Ensure that the JRE (1.6 or later) is installed on your local host.**

2. **(Windows Internet Explorer) Register the 32-bit JDK file on your local host before launching the Oracle ILOM Remote Console:**

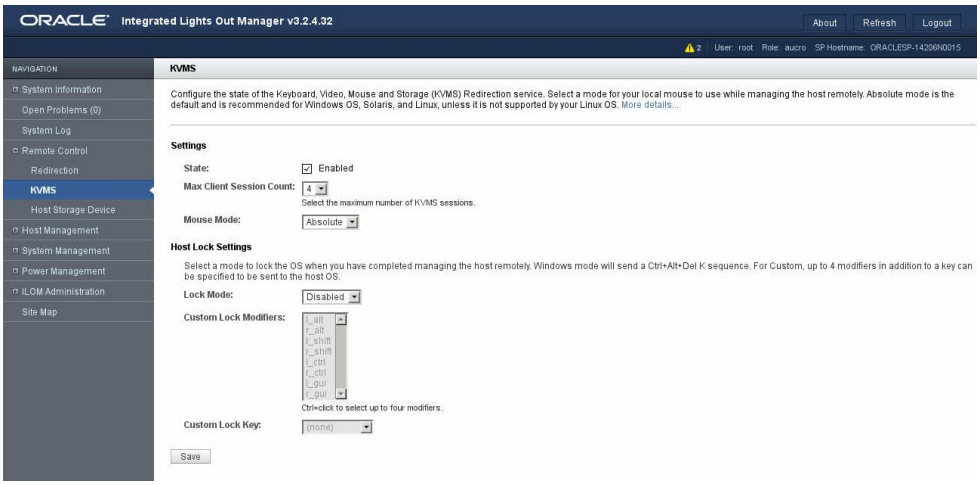
a. **In the Windows Explorer window, click Tools → Folder Options, and then click the Files Types tab.**

b. **Select the JNLP file, browse to its location, and then click OK.**

3. **Set up the Oracle ILOM KVMS settings to match your desktop environment:**

a. **In the Oracle ILOM web interface, navigate to the Remote Control → KVMS page.**

The KVMS page is displayed.



b. **Ensure that the State is checked Enabled.**

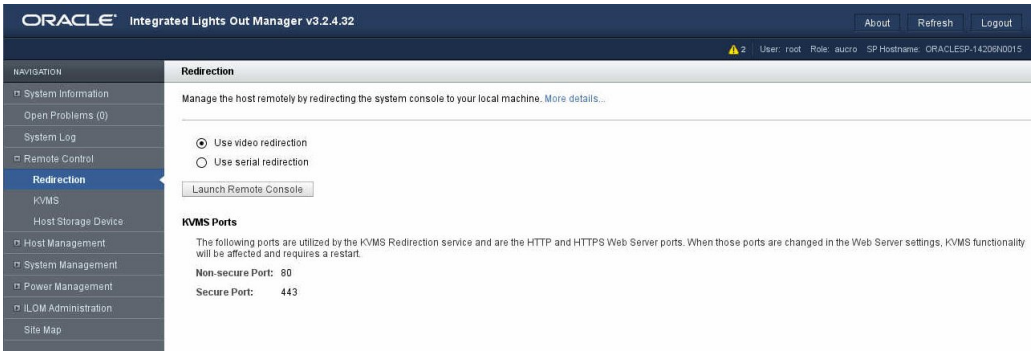
c. **Enable the appropriate mouse mode option (absolute or relative).**

For best performance, absolute mode is typically selected for Oracle Solaris-based OSs, and relative mode is selected for Linux-based OSs.

d. **Click Save.**

4. **Navigate to the Remote Control → Redirection page.**

The Redirection page is displayed.



5. **Select Use video redirection and click Launch Remote Console.**
   The Oracle ILOM Remote Console starts.

6. **(Optional) Log out of Oracle ILOM.**
   See “Log Out of Oracle ILOM” on page 27.

Related Information

- Oracle ILOM documentation library at: `http://www.oracle.com/goto/ILOM/docs`
- “Log In To the Oracle ILOM Web Interface” on page 20
- “Access the Remote Console (Web Interface)” on page 21
- “Log In To the Oracle ILOM CLI (NET MGT)” on page 23
- “Log In To the Oracle ILOM CLI (SER MGT)” on page 24
- “Switch Between the Oracle ILOM CLI and the Host Console” on page 24
- “Log Out of Oracle ILOM” on page 27

▼ Log Out of Oracle ILOM

- **Perform one of these actions:**
  - **Oracle ILOM CLI** – Type: -> `exit`
  - **Oracle ILOM web interface** – Click Log Out in the upper right corner.

Related Information

- Oracle ILOM documentation library at: `http://www.oracle.com/goto/ILOM/docs`

- “Log In To the Oracle ILOM Web Interface” on page 20
- “Access the Remote Console (Web Interface)” on page 21
- “Log In To the Oracle ILOM CLI (NET MGT)” on page 23
- “Log In To the Oracle ILOM CLI (SER MGT)” on page 24
- “Switch Between the Oracle ILOM CLI and the Host Console” on page 24
- “Enable KVMS” on page 25

Accessing BIOS

You can perform a variety of server administrative tasks through the configuration of the host BIOS.

Through BIOS, you can invoke the BIOS Setup utility that enables you to view product information, configure, enable, disable, and manage server components. The BIOS Setup utility is accessible for a short period of time when full power is applied to the host.

Use these topics to access and navigate the BIOS Setup utility.

Description	Links
Learn about the BIOS key mappings and BIOS Setup utility menus.	“BIOS Key Mappings” on page 28 “BIOS Setup Utility Menus” on page 29
Access the BIOS Setup utility.	“Access the BIOS Setup Utility” on page 30
Navigate the menus.	“Navigate BIOS Setup Utility Menus” on page 33
Exit from the BIOS Setup utility.	“Exit the BIOS Setup Utility” on page 34

Related Information

- “BIOS Overview (Administration)” on page 14
- *Server OS Installation*, setting up BIOS
- “Configuring BIOS” on page 87
- “Updating the Firmware and Software” on page 127

BIOS Key Mappings

While the BIOS initializes, you use function keys to perform actions listed in this table.

If you are using a terminal device that does not support function keys, instead use the equivalent control key sequence.

Note - When using the Oracle ILOM Remote Console, F10 is trapped by the local OS. You must use the F10 option listed in the KVMS -> Virtual Keyboard menu that is available at the top of the Remote Console application.

Function Key	Control Key Sequence	BIOS POST Function	BIOS Setup Utility Function
F1	Ctrl+Q	Not applicable.	Activate the Setup Utility Help menu.
F2	Ctrl+E	Enter BIOS Setup utility while the BIOS is performing the power-on self-test (POST).	Not applicable.
F7	Ctrl+D	Not applicable.	Discard changes.
F8	Ctrl+P	Activate the BIOS Boot menu.	Not applicable.
F9	Ctrl+O	Starts the OS. BIOS boots to OSA, bypassing the current Boot Priority List for this one-time boot method.	Activate Load Optimal Values menu.
F10	Ctrl+S	Not applicable.	Activate Save and Exit menu.
F12	Ctrl+N	Activate Network boot.	Not applicable.

Related Information

- “BIOS Setup Utility Menus” on page 29
- “Access the BIOS Setup Utility” on page 30
- “Navigate BIOS Setup Utility Menus” on page 33
- “Exit the BIOS Setup Utility” on page 34

BIOS Setup Utility Menus

The following table provides descriptions for the top-level BIOS Setup utility menus.

Menu	Description
Main	View and configure general product information, including time and date, security settings, system serial number, and CPU and DIMM information.
Advanced	View and configure information for the CPU, trusted computing, USB, and other information. Set the IP address for the server SP.
Boot	Enable or disable internal OSA support, set the boot mode to Legacy BIOS or UEFI BIOS, and configure the boot device priority.

Menu	Description
IO	Manage configuration settings for I/O devices, such as I/O virtualization settings, and enable and disable Option ROMs.
Save & Exit	Save changes and exit, discard changes and exit, discard changes, or restore the default BIOS settings.

To navigate the menus or options listed on a menu, use the arrow keys.

Related Information

- “BIOS Key Mappings” on page 28
- “Access the BIOS Setup Utility” on page 30
- “Navigate BIOS Setup Utility Menus” on page 33
- “Exit the BIOS Setup Utility” on page 34

▼ Access the BIOS Setup Utility

Note - During the reset or power on, pay close attention to the screen so that you can interrupt the boot process at the correct time.

1. **Access the server from one of the following interfaces.**

   - **Log in to the Oracle ILOM web interface and access the Remote Console. See “Log In To the Oracle ILOM Web Interface” on page 20 and “Access the Remote Console (Web Interface)” on page 21.**
   - **Log in to the Oracle ILOM CLI and access the host console. See “Log In To the Oracle ILOM CLI (NET MGT)” on page 23 and “Switch Between the Oracle ILOM CLI and the Host Console” on page 24.**
   - **Use a USB keyboard and VGA monitor connected directly to the server. (A mouse is not required to access the BIOS Setup utility.)**
   - **Use a terminal (or terminal emulator on a computer) through the SER MGT port on the back panel of the server.**

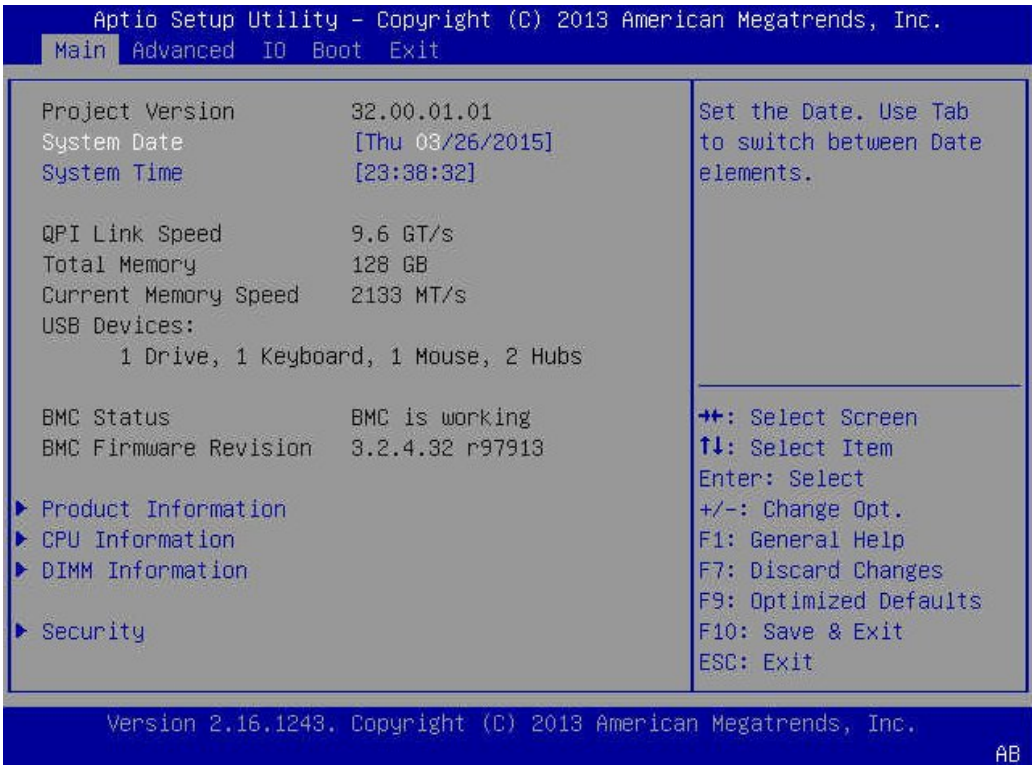
2. **Reset or power on the server.**

   See “Controlling the Power State” on page 43.

   The BIOS begins to boot and run POST.

3. **Press the F2 key (Ctrl+E from a serial connection) when prompted at the start up screen.**

The BIOS Setup utility Main menu appears.



4. **Perform BIOS administrative tasks.**

   See "BIOS Setup Utility Menus" on page 29 and "Navigate BIOS Setup Utility Menus" on page 33.

Related Information

- "BIOS Key Mappings" on page 28
- "BIOS Setup Utility Menus" on page 29
- "Navigate BIOS Setup Utility Menus" on page 33
- "Exit the BIOS Setup Utility" on page 34

▼ Navigate BIOS Setup Utility Menus

1. **Access the BIOS Setup utility.**

   See “Access the BIOS Setup Utility” on page 30.

2. **Use the left and right arrow keys to select the different primary menu options.**

   As you select each menu option, the top-level window for that menu option appears.

3. **To select an option on a primary menu, use the up and down arrow keys to navigate to the options presented.**

   Only options that can be modified are highlighted when you press the up and down arrow keys.

   - As you select the option, instructions for modifying the option appear in the right column of the window.
   - If a field is a link to a submenu, a description of the submenu content appears in the right column.

4. **Modify the setup field by pressing the + or - keys or by pressing Enter and selecting the desired option from the pop-up menus.**

5. **Press the Esc key to return from a submenu to the previous menu.**

   Note - Pressing Esc from a primary menu is equivalent to selecting the Discard Changes and Exit option from the Save & Exit menu.

6. **Modify parameters as needed.**

7. **Exit the BIOS Setup utility.**

   See “Exit the BIOS Setup Utility” on page 34.

   Note - After modifying any BIOS settings and selecting Save Changes and Reset from the Save & Exit menu, the subsequent reboot might take longer than a typical reboot where no settings were modified. The additional delay is required to ensure that changes to the BIOS settings are synchronized with Oracle ILOM.

Related Information

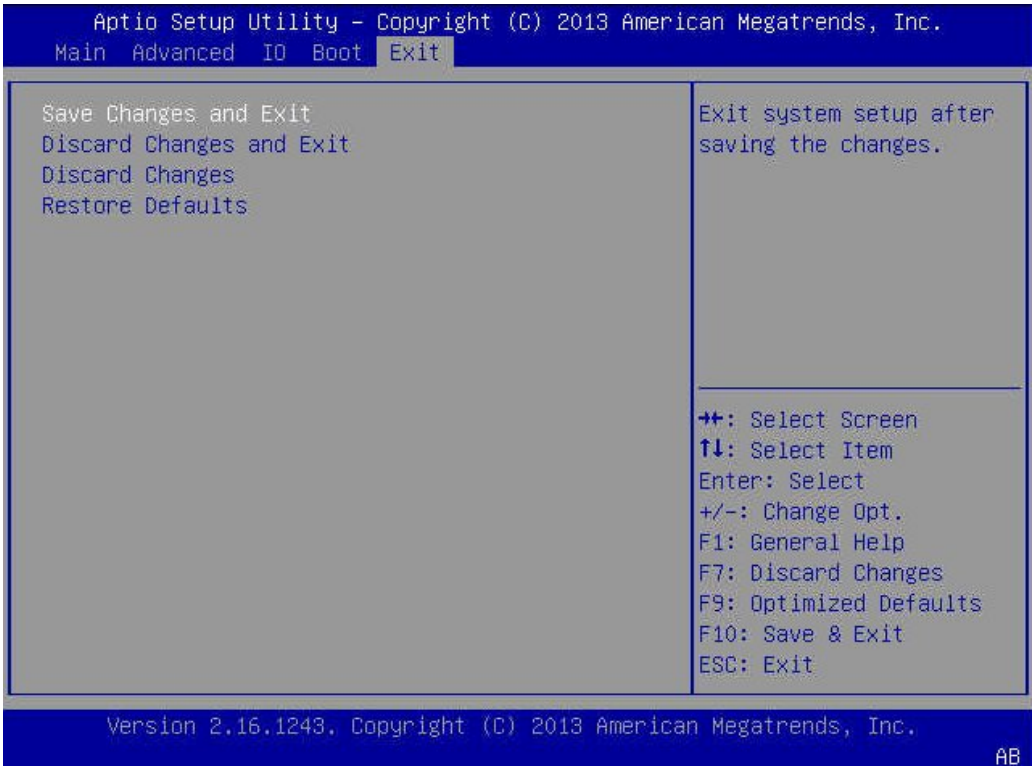
- “BIOS Key Mappings” on page 28
- “BIOS Setup Utility Menus” on page 29
- “Access the BIOS Setup Utility” on page 30
- “Exit the BIOS Setup Utility” on page 34

Exit the BIOS Setup Utility

Note - You can use F10 as a shortcut to save changes you have made to BIOS and exit. However, when using the Oracle ILOM Remote Console, F10 is trapped by the local OS. You must use the F10 option listed in the Keyboard menu that is available at the top of the Remote Console application.

1. **From within BIOS, use the left and right arrow keys to display the Exit menu.**
   See "Navigate BIOS Setup Utility Menus" on page 33.

2. **Use the up and down arrow keys to select the desired action.**



3. **Press the Enter key to select the option.**
   A confirmation dialog box appears.

4. **In the confirmation dialog box, select OK to proceed and exit the BIOS Setup utility, or select Cancel to stop the exit process.**

Related Information

- "BIOS Key Mappings" on page 28
- "BIOS Setup Utility Menus" on page 29
- "Access the BIOS Setup Utility" on page 30
- "Navigate BIOS Setup Utility Menus" on page 33

Accessing OSA

You access OSA for a short period of time when the BIOS boots and runs POST.

For an overview of OSA see "OSA Overview" on page 15.

Use one of these methods to access OSA:

- "Access OSA (BIOS F9 Key)" on page 36
- "Access OSA (Oracle ILOM Web Interface)" on page 35

Related Information

- "OSA Overview" on page 15
- "Enabling or Disabling OSA" on page 99
- "Updating the Firmware and Software" on page 127

▼ Access OSA (Oracle ILOM Web Interface)

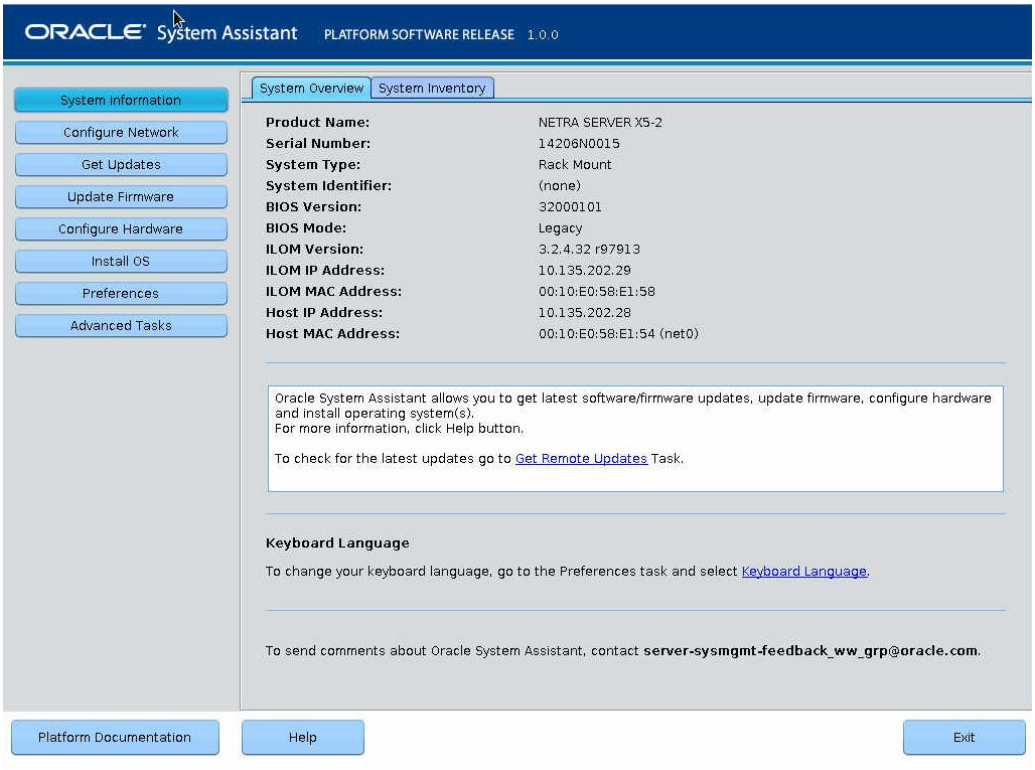
1. **Log in to the Oracle ILOM web interface.**
   See "Log In To the Oracle ILOM Web Interface" on page 20.
2. **Ensure that the host is powered off.**
   See "Controlling the Power State" on page 43.

Note - The host power state is displayed on the System Information Summary page.

---

3. **Navigate to the System Information → Summary page.**
   The Summary page is displayed.
4. **Click Launch for the Oracle System Assistant (OSA) in the Actions panel.**

Oracle ILOM starts a redirected Remote Console. BIOS initializes, and after a few minutes, the OSA System Information window is displayed in the Remote Console.



5. **Perform administrative tasks using OSA.**

6. **(Optional) Log out of OSA.**
   See “Log Out of OSA” on page 38.

Related Information

- “Access OSA (BIOS F9 Key)” on page 36
- “Log Out of OSA” on page 38

▼ Access OSA (BIOS F9 Key)

Use this procedure to access OSA using the F9 function key (Ctrl-O) while BIOS initializes.

Note - During reset or power on, pay close attention to the screen so that you can interrupt the boot process at the correct time.

1. **Access the server from one of these interfaces.**

   - **Log in to the Oracle ILOM web interface and access the Remote Console. See "Log In To the Oracle ILOM Web Interface" on page 20 and "Access the Remote Console (Web Interface)" on page 21.**

   - **Use a USB keyboard and VGA monitor connected directly to the server. (A mouse is not required to access the BIOS Setup utility.)**

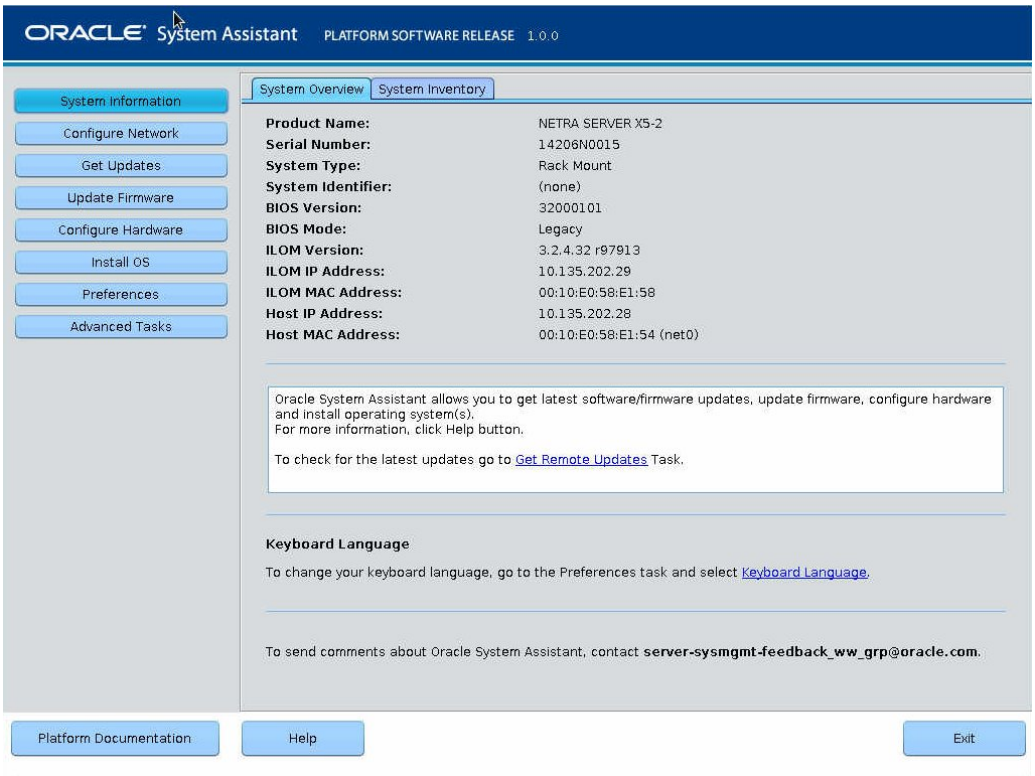
2. **Reset or power on the server.**

   See "Controlling the Power State" on page 43.

   The BIOS begins to boot and run POST.

3. **When prompted, press the F9 key (or Ctrl-O).**

After a few minutes, the OSA System Information window is displayed in the console.



4. **Perform administrative tasks using OSA.**

5. **(Optional) Log out of OSA.**
   See “Log Out of OSA” on page 38.

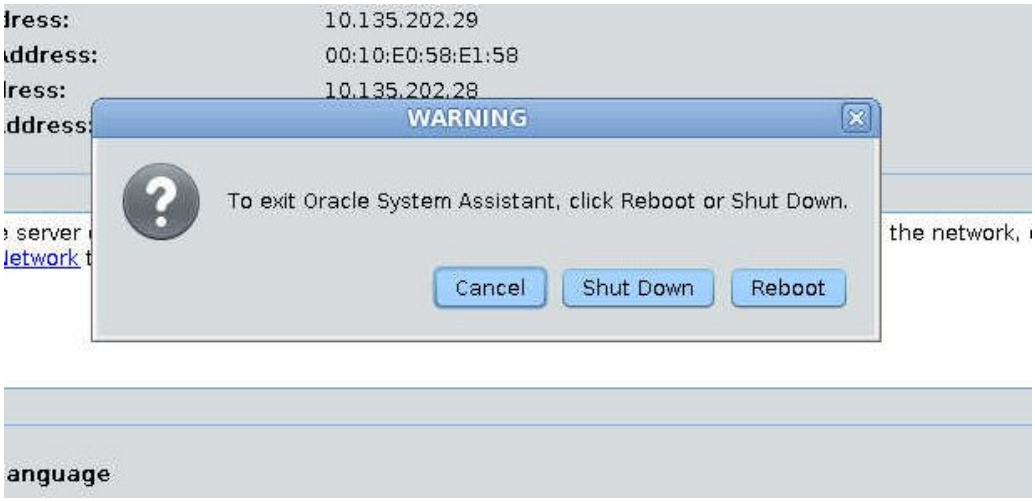
Related Information

- “Access OSA (Oracle ILOM Web Interface)” on page 35
- “Log Out of OSA” on page 38

▼ Log Out of OSA

1. **From within OSA, click Exit.**

The Warning dialog box opens and you are prompted to choose an action.



2. **Click the button to choose the action:**

   - **Cancel – Cancel the exit process.**
   - **Shut Down – Exit OSA and do not boot the host.**
   - **Reboot – Exit OSA and reboot the host.**

Related Information

- “Access OSA (Oracle ILOM Web Interface)” on page 35
- “Access OSA (BIOS F9 Key)” on page 36

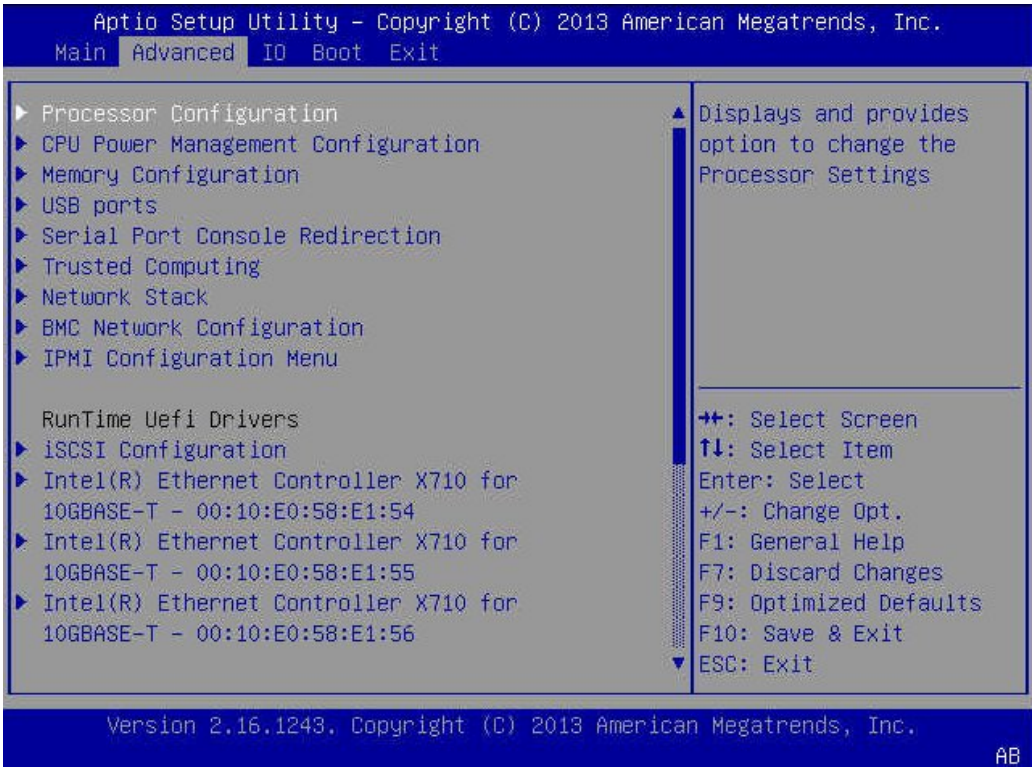
▼ Access Add-On Card Configuration Utilities (BIOS)

Use this procedure if you need to access add-on card configuration utilities. This procedure only applies to servers configured to use UEFI BIOS mode. For more information about BIOS modes, refer to *Server OS Installation*, setting up BIOS.

Note - In Legacy BIOS mode, I/O adapter utilities are invoked during BIOS POST progression using hot keys identified by the adapter's Option ROM during POST. When the hot key is pressed, the adapter's specific configuration utility interface is presented. The interface has a vendor-specific design.

1. **Access the BIOS Setup utility.**
   See "Accessing BIOS" on page 28.

2. **Use the left and right arrow keys to display the Advanced menu.**
   See "Navigate BIOS Setup Utility Menus" on page 33.
   Under RunTime Uefi Drivers, a list of all controllable devices is displayed.



Note - The RunTime UEFI Drivers devices are displayed only after a UEFI boot.

3. **Use the up and down arrow keys to highlight a device, and press Enter to configure that device.**

4. **Press F10 to save the changes and exit the BIOS Setup utility.**

Related Information

- “Accessing BIOS” on page 28
- “BIOS Overview (Administration)” on page 14
- “Configuring BIOS” on page 87

Controlling the Server

Use these topics to control the power state and Telco alarms.

- “Controlling the Power State” on page 43
- “Change Telco Alarm States Manually” on page 47

Related Information

- “Understanding Administration Resources” on page 11
- “Accessing Administration Tools” on page 19
- “Configuring Power-On and Boot Options” on page 49
- “Configuring Oracle ILOM” on page 59
- “Configuring BIOS” on page 87
- “Enabling or Disabling OSA” on page 99
- “Monitoring the Server” on page 103
- “Updating the Firmware and Software” on page 127

Controlling the Power State

Note - You can configure the power state that the server enters when power is applied. See “Configuring Power-On and Boot Options” on page 49.

Use these topics to understand and control the power state.

Description	Links
Learn about the different power states.	“Power States” on page 44
Change the power state.	“Control the Power State” on page 44
Reset the host.	“Reset the Host” on page 45
Reset the SP.	“Reset the SP” on page 46

Related Information

- “Configuring Power-On and Boot Options” on page 49

Power States

The server can be in one of these states:

- **No power applied** – No power is applied to the server. For example, when the power cords are not connected, or the main breaker is off.
- **Standby** – Standby power is applied to the server and the SP is running, but main power is not applied to the host. You can access Oracle ILOM running on the SP.
- **Fully powered on** – The host is powered on. During the BIOS booting stage you can access Oracle ILOM, OSA, and the BIOS Setup utility. Once the server boots the OS, you can access Oracle ILOM and the OSs running on the host.

Related Information

- “Control the Power State” on page 44
- “Reset the Host” on page 45
- “Reset the SP” on page 46

▼ Control the Power State

- **Control the power state using one of these methods:**

  - **From the local server** – Press the Power button on the front panel of the server. This button toggles the power state between standby and powered on.

    If power button is held for 5 seconds with host power on, the host powers off immediately.
  - **From the Oracle ILOM web interface** – Click Host Management → Power Control, access the Select Action list box, and select one of the following:
    - **Reset** – reboots the host.
    - **Immediate Power Off** – Immediately turns off the power on the host, leaving the server in standby.
    - **Graceful Shutdown and Power Off** – Shuts down the OS gracefully then powers off the host, leaving the server in standby.
    - **Power On** – Powers on the host.
    - **Power Cycle** – Powers off the host, then powers on the host.
  - **From the Oracle ILOM CLI**:

- **`stop /System`** – After you confirm by typing **`y`**, shuts down the OS gracefully then powers off the host, leaving the server in standby.
- **`stop -f /System`** – Immediately turns off the power to the host, leaving the server in standby.

Caution - Immediately powering off the host can cause data loss or corruption on storage devices.

- **`start /System`** – Turns on full power to the host.
- **`reset /System`** – Resets the host, returning the server to a powered on state.

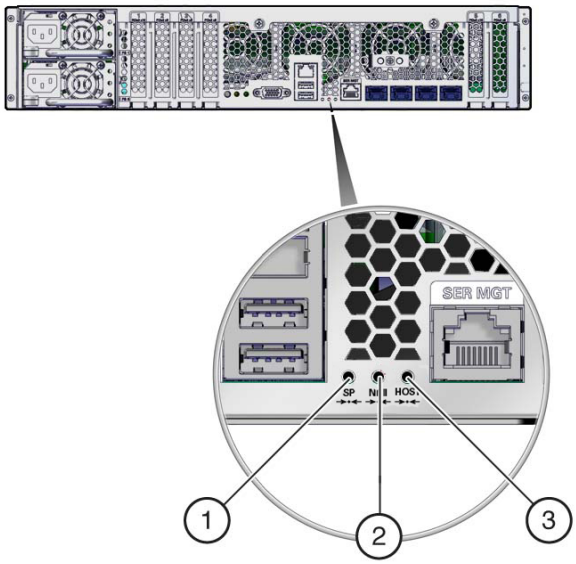
Related Information

- "Power States" on page 44
- "Reset the Host" on page 45
- "Reset the SP" on page 46

Reset the Host

- **Reset the host using one of these methods.**

  - **From the local server** – Press the Power button on the front panel of the server to power off the server, then press the Power button again to power on the server.
  - **From the Oracle ILOM web interface** – Click Host Management → Power Control and select Reset from the Select Action list box.
  - **From the Oracle ILOM CLI** – Type: **`reset /System`**
  - **From the rear of the server** – Using a stylus or similar implement, press the Host reset button.



No.	Description
1.	Location of pinhole to access the SP reset button.
2.	Location of pinhole to access the NMI (Non-maskable Interrupt) button. **For Oracle Service only.**
3.	Location of pinhole to access the Host reset button.

Related Information

- “Power States” on page 44
- “Control the Power State” on page 44
- “Reset the SP” on page 46

▼ Reset the SP

If you need to reset your SP, you can do so without affecting the host OS. However, resetting the SP disconnects your current Oracle ILOM session.

- **Reset the SP using one of these methods:**

- **From the Oracle ILOM web interface** – Click ILOM Administration → Maintenance, select the Reset SP tab, and click on Reset SP.
- **From the Oracle ILOM CLI** – Type: **`reset /SP`**
- **From the rear of the server** – Using a stylus or similar implement, press the SP reset button.

Related Information

- “Power States” on page 44
- “Control the Power State” on page 44
- “Reset the Host” on page 45

▼ Change Telco Alarm States Manually

Four Telco Alarm LEDs can be set to on and off by the user.

```
/SYS/CRITICAL_ALARM
/SYS/ALARM/MAJOR
/SYS/ALARM/MINOR
/SYS/ALARM/USER
```

When set to on, the corresponding front panel LED lights.

The `CRITICAL_ALARM` is also used to denote when standby power is not present due to a system power failure or disconnection.

You can manage the alarm indicators by using the Oracle ILOM CLI or by using an IPMItool utility.

1. **Log in to Oracle ILOM.**

   See “Log In To the Oracle ILOM CLI (NET MGT)” on page 23.

2. **Type one of these commands.**

```
-> set /SYS/CRITICAL_ALARM value=state
-> set /SYS/ALARM/MAJOR value=state
-> set /SYS/ALARM/MINOR value=state
-> set /SYS/ALARM/USER value=state
```

Replace *state* with either `on` or `off`.

Related Information

- Oracle ILOM documentation library at: http://www.oracle.com/goto/ILOM/docs
- “Accessing Oracle ILOM” on page 19
- “Monitoring the Server” on page 103

Configuring Power-On and Boot Options

Use these topics to configure the power-on and boot options:

- “Configuring Power-On Policies” on page 49
- “Selecting a Boot Device” on page 52

Related Information

- “Understanding Administration Resources” on page 11
- “Accessing Administration Tools” on page 19
- “Controlling the Server” on page 43
- “Configuring Oracle ILOM” on page 59
- “Configuring BIOS” on page 87
- “Enabling or Disabling OSA” on page 99
- “Monitoring the Server” on page 103
- “Updating the Firmware and Software” on page 127

Configuring Power-On Policies

Use these topics to configure power-on policies:

Description	Links
Learn about the server's power policy settings.	“Power-On Policies” on page 50
Configure the power-on policy using either the Oracle ILOM web interface or CLI.	“Configure the Power-On Policy (Oracle ILOM Web Interface)” on page 50 “Configure the Power-On Policy (Oracle ILOM CLI)” on page 51

Related Information

- “Controlling the Power State” on page 43

- “Selecting a Boot Device” on page 52

Power-On Policies

The SP power-on policy determines the power state of the server when power is applied to the server.

You can choose to enable one of these policies:

- **Auto Power-On Host On Boot** – The SP automatically applies main power to the host.
- **Set Host Power to Last Power State on Boot** – When this option is enabled, the SP automatically tracks the last power state and restores the server to its last remembered power state following a power state change of at least 10 seconds.

These policies are mutually exclusive, meaning that if one policy is enabled, the other policy is disabled. If both policies are disabled, then the SP does not apply main power to the host when AC or DC power is applied to the server.

By default, these policies are disabled, which means that when power is applied, the server does not apply main power to the host, leaving the server in standby. See “Controlling the Power State” on page 43.

Related Information

- “Configure the Power-On Policy (Oracle ILOM Web Interface)” on page 50
- “Configure the Power-On Policy (Oracle ILOM CLI)” on page 51

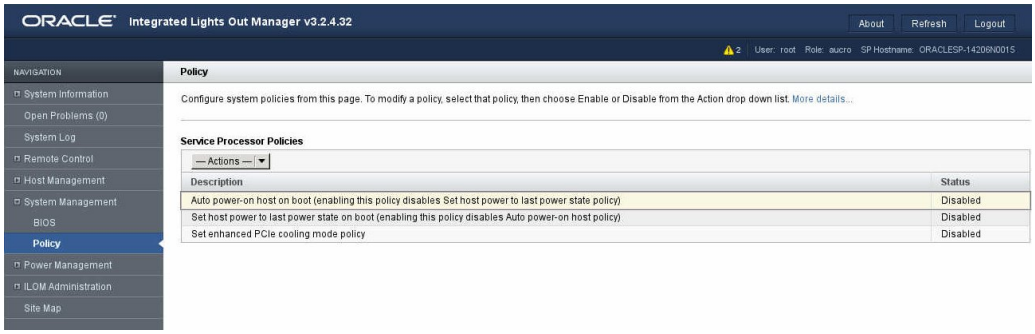
▼ Configure the Power-On Policy (Oracle ILOM Web Interface)

1. **Log in to the Oracle ILOM web interface.**

   See “Log In To the Oracle ILOM Web Interface” on page 20.

2. **Navigate to the System Management → Policy page.**

The Policy Configuration page appears.



3. **Click the policy you want to configure.**

4. **From the Actions drop-down menu, select Enable or Disable.**

   You are prompted to confirm your selection.

5. **Click OK to confirm your setting.**

Related Information

- “Power-On Policies” on page 50
- “Configure the Power-On Policy (Oracle ILOM CLI)” on page 51

▼ Configure the Power-On Policy (Oracle ILOM CLI)

1. **Log in to the Oracle ILOM CLI.**

   See “Log In To the Oracle ILOM CLI (NET MGT)” on page 23.

2. **Display the current policies.**

   For example:

```
-> show /SP/policy

/SP/policy
Targets:

Properties:
 ENHANCED_PCIE_COOLING_MODE = disabled
 HOST_AUTO_POWER_ON = disabled
```

```
 HOST_LAST_POWER_STATE = disabled
```

3. **Enable or disable a policy.**

```
-> set /SP/policy policy_name=enabled|disabled
```

For example:

```
-> set /SP/policy HOST_AUTO_POWER_ON=enabled
```

4. **Verify the policy.**

```
-> show /SP/policy

/SP/policy
Targets:

Properties:
 ENHANCED_PCIE_COOLING_MODE = disabled
 HOST_AUTO_POWER_ON = enabled
 HOST_LAST_POWER_STATE = disabled
```

Related Information

- “Power-On Policies” on page 50
- “Configure the Power-On Policy (Oracle ILOM Web Interface)” on page 50

Selecting a Boot Device

Use one of these tasks to select a boot device:

- “Configure the Boot Device Priority (BIOS)” on page 52
- “Select a Temporary Boot Device (Oracle ILOM Web Interface)” on page 54
- “Select a Temporary Boot Device (BIOS)” on page 55

Related Information

- “Configuring Power-On Policies” on page 49
- “BIOS Overview (Administration)” on page 14

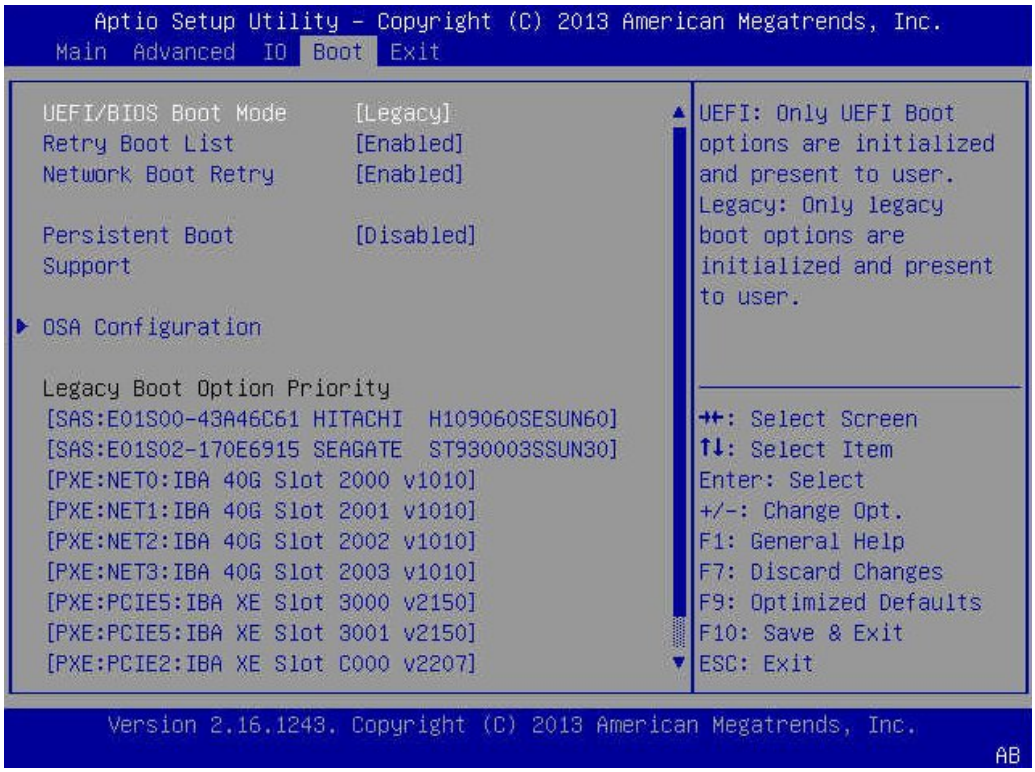
▼ Configure the Boot Device Priority (BIOS)

1. **Access the BIOS Setup utility.**

See “Accessing BIOS” on page 28.

2. **Use the left and right arrow keys to display the Boot menu.**

   See “Navigate BIOS Setup Utility Menus” on page 33.



3. **Use the up and down arrow keys to configure the boot device priority.**

   The Enter key selects a device for movement up and down in the list. The Esc key deselects the device.

4. **Press F10 to save the changes and exit the BIOS Setup utility.**

   See “Exit the BIOS Setup Utility” on page 34.

Related Information

- “Select a Temporary Boot Device (Oracle ILOM Web Interface)” on page 54
- “Select a Temporary Boot Device (BIOS)” on page 55

Select a Temporary Boot Device (Oracle ILOM Web Interface)

If you use this procedure to set a temporary boot device, this boot device assignment is only in effect for the current server boot. The permanent boot device (specified through the BIOS Setup utility) takes effect after booting from the temporary boot device.

1. **Access Oracle ILOM through the web interface.**

   See "Log In To the Oracle ILOM Web Interface" on page 20.

2. **Navigate to the Host Management → Host Control page.**

   The Host Control page is displayed.

3. **Select the boot device from the Next Boot Device menu.**

4. **Click Save.**

5. **Navigate to the System Information → Summary page and click Turn On for the Power State in the Actions panel.**

   The host boots from the selected device.

Related Information

- "Configure the Boot Device Priority (BIOS)" on page 52
- "Select a Temporary Boot Device (BIOS)" on page 55

▼ Select a Temporary Boot Device (BIOS)

If you use this procedure to set a temporary boot device, this boot device assignment is only in effect for the current server boot. The permanent boot device (specified through the BIOS Setup utility) takes effect after booting from the temporary boot device.

Note - During the reset or power on, pay close attention to the screen so that you can interrupt the boot process at the correct time.

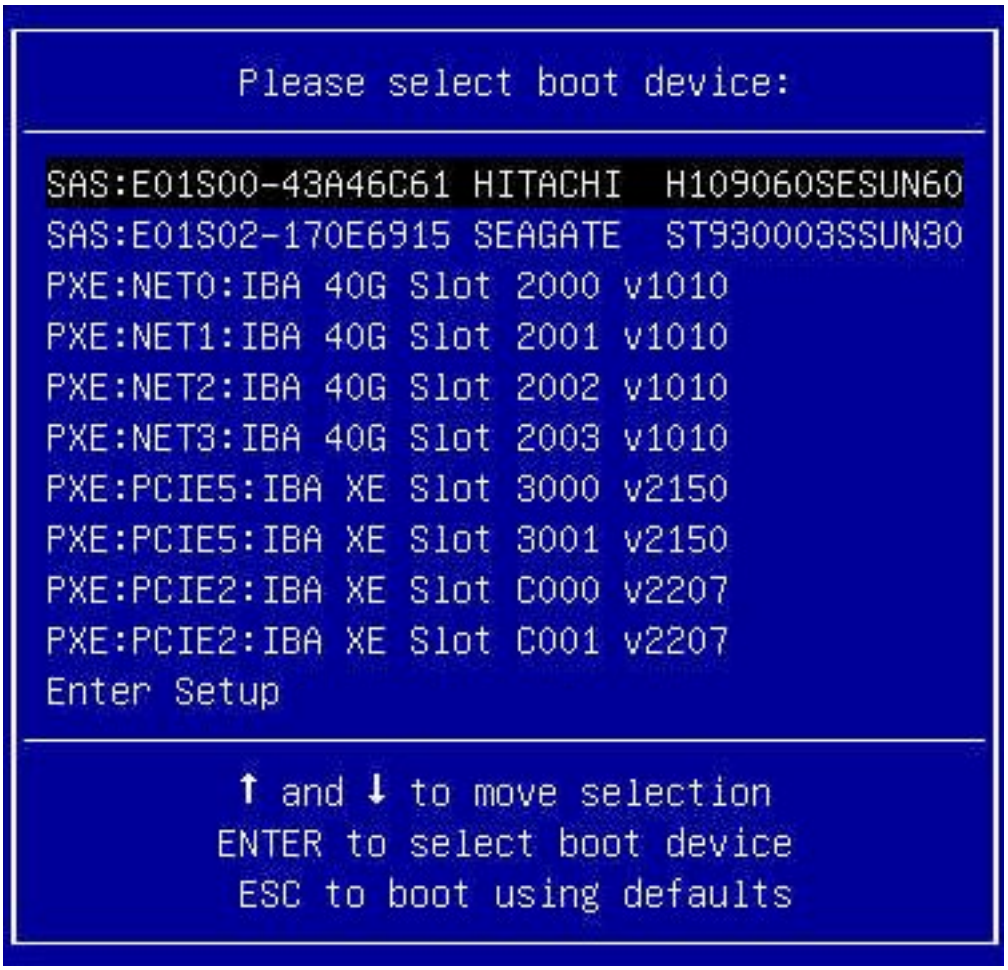
---

1. **Reset or power on the server.**

   See “Controlling the Power State” on page 43.

2. **Press the F8 key (or Ctrl+P from a serial connection) when prompted while the BIOS is running the POST.**

The Please Select Boot Device dialog box appears.



3. **Use the up and down arrow keys to select the boot device option according to the OS and BIOS mode you elected to use, then press Enter.**

   Based on whether the server is configured to use UEFI Boot Mode or Legacy BIOS Mode, the dialog only displays devices that function in that mode. For example, if you select the UEFI Boot Mode, only UEFI boot devices are displayed in the Please Select Boot Device dialog. See "BIOS Overview (Administration)" on page 14.

   The host boots from the selected device.

Related Information

- “Configure the Boot Device Priority (BIOS)” on page 52
- “Select a Temporary Boot Device (Oracle ILOM Web Interface)” on page 54

Configuring Oracle ILOM

You can use a variety of tools to configure the SP and Oracle ILOM. Use any combination of these topics based on the tool you want to use:

Note - These topics cover the common Oracle ILOM configuration tasks. For more comprehensive Oracle ILOM administration tasks, refer to the Oracle ILOM 3.2 documentation. See `http://www.oracle.com/goto/ILOM/docs`.

- "Configuring the SP and Oracle ILOM (Oracle ILOM CLI)" on page 59
- "Configuring the SP and Oracle ILOM (Oracle ILOM Web Interface)" on page 64
- "Configuring the SP and Oracle ILOM (BIOS)" on page 75
- "Configuring the SP and Oracle ILOM (OSA)" on page 77

Related Information

- "Understanding Administration Resources" on page 11
- "Accessing Administration Tools" on page 19
- "Controlling the Server" on page 43
- "Configuring Power-On and Boot Options" on page 49
- "Configuring BIOS" on page 87
- "Enabling or Disabling OSA" on page 99
- "Monitoring the Server" on page 103
- "Updating the Firmware and Software" on page 127

Configuring the SP and Oracle ILOM (Oracle ILOM CLI)

Use these topics to perform common SP configuration tasks using the Oracle ILOM CLI interface.

Note - For more comprehensive SP configuration information, and for performing equivalent tasks using the Oracle ILOM web interface, refer to the Oracle ILOM 3.2 documentation. See `http://www.oracle.com/goto/ILOM/docs`.

- “Change the Oracle ILOM Root Password (Oracle ILOM CLI)” on page 60
- “Recover the Oracle ILOM Root Password” on page 60
- “Configure the NET MGT Port (SER MGT)” on page 61
- “Configure the Enhanced PCIe Cooling Mode Policy (Oracle ILOM CLI)” on page 63

Related Information

- “Configuring the SP and Oracle ILOM (Oracle ILOM Web Interface)” on page 64
- “Configuring the SP and Oracle ILOM (BIOS)” on page 75
- “Configuring the SP and Oracle ILOM (OSA)” on page 77

▼ Change the Oracle ILOM Root Password (Oracle ILOM CLI)

The server ships with a root account that you use to initially log in to Oracle ILOM. This account has administrative privileges (read and write) for all Oracle ILOM features, functions, and commands. The default password is `changeme`.To prevent unauthorized access, change the password.

1. **Log in to the Oracle ILOM CLI.**
   See “Log In To the Oracle ILOM CLI (NET MGT)” on page 23.

2. **Type.**

```
-> set /SP/users/root password
Enter new password: ********
Enter new password again: ********
```

Related Information

- Oracle ILOM documentation library at: `http://www.oracle.com/goto/ILOM/docs`
- “Accessing Oracle ILOM” on page 19
- “Recover the Oracle ILOM Root Password” on page 60

▼ Recover the Oracle ILOM Root Password

This procedure assumes that the ILOM SP `check_physical_presence` property is set to `true`. This property is controlled by either Locator button on the server. If the `check_physical_presence` property is set to `false`, entering the `default` user account does not

prompt you to press the Locator button and you can immediately type the `defaultpassword` to gain access.

Note - If the Locator LED is on and flashing, press the button to stop it from flashing.

---

1. **Establish a local serial connection to Oracle ILOM through the SER MGT port.**
   See "Log In To the Oracle ILOM CLI (SER MGT)" on page 24.

2. **Log in to Oracle ILOM using the default user account.**
   For example:

   ```
   login: default
   Press and release the physical presence button
   Press return when this is completed...
   ```

3. **Press the Locator button on the front of the server.**
   This action proves that you have physical access to the server.

   Note - This action is required if Oracle ILOM Physical Presence Check is enabled (the default). See "(Optional) Configure the Oracle ILOM Identity" on page 65.

   ---

4. **In the terminal device, press Return.**

5. **Type the password for the default user account:**
   `defaultpassword`

6. **Recreate the root account.**
   See "Configure User Accounts (Oracle ILOM Web Interface)" on page 72.

Related Information

- Oracle ILOM documentation library at: `http://www.oracle.com/goto/ILOM/docs`
- "Accessing Oracle ILOM" on page 19
- "Change the Oracle ILOM Root Password (Oracle ILOM CLI)" on page 60

▼ Configure the NET MGT Port (SER MGT)

You need a serial connection to initially configure NET MGT port, afterwhich you can use the NET MGT port to reconfigure the NET MGT port.

1. **Access the Oracle ILOM CLI interface through the SER MGT port.**
   See "Log In To the Oracle ILOM CLI (SER MGT)" on page 24.

2. **Display the current network connectivity configuration.**

```
-> show /sp/network

 /SP/network
    Targets:
        interconnect
        ipv6
        test

    Properties:
        commitpending = (Cannot show property)
        dhcp_clientid = none
        dhcp_server_ip = none
        ipaddress = 10.135.202.29
        ipdiscovery = static
        ipgateway = 10.135.202.1
        ipnetmask = 255.255.255.0
        macaddress = 00:10:E0:58:E1:58
        managementport = MGMT
        outofbandmacaddress = 00:10:E0:58:E1:58
        pendingipaddress = 10.135.202.29
        pendingipdiscovery = static
        pendingipgateway = 10.135.202.1
        pendingipnetmask = 255.255.255.0
        pendingmanagementport = MGMT
        pendingvlan_id = (none)
        sidebandmacaddress = 00:10:E0:58:E1:59
        state = enabled
        vlan_id = (none)
```

3. **Configure the parameters according to your IP discovery method.**

   - DHCP
     - pendingIpdiscovery = dhcp
     - pendingdhcp_clientid
     - pendingdhcp_server_ip
   - Static
     - pendingipdiscovery = static
     - pendingipaddress
     - pendingipgateway
     - pendingipnetmask

   You can configure the parameters all in one command. For example:

```
-> set /SP/network pendingipdiscovery=static pendingipaddress=10.135.202.29
 pendingipgateway=10.135.202.1 pendingipnetmask=255.255.255.0
Set 'pendingipdiscovery' to 'static'
Set 'pendingipaddress' to '10.135.202.29'
```

```
Set 'pendingipgateway' to '10.135.202.1'
Set 'pendingipnetmask' to '255.255.255.0'
->
```

4. **Make the settings active.**

```
-> set /SP/network commitpending=true
Set 'commitpending' to 'true'
->
```

Note - Depending upon what parameters you set, you might need to re-access the SP to continue management of the SP. See "Accessing Oracle ILOM" on page 19.

Related Information

- Oracle ILOM documentation library at: `http://www.oracle.com/goto/ILOM/docs`
- "Accessing Oracle ILOM" on page 19
- "(Optional) Configure the Oracle ILOM Identity" on page 65
- "Configure the SP SER MGT Port" on page 68
- "Configure the SP Date and Time" on page 69
- "Change the Oracle ILOM Root Password (Oracle ILOM Web Interface)" on page 70
- "Configure User Accounts (Oracle ILOM Web Interface)" on page 72
- "Oracle ILOM User Roles" on page 74

▼ Configure the Enhanced PCIe Cooling Mode Policy (Oracle ILOM CLI)

By default, the Enhanced PCIe Cooling Mode policy is disabled. When this policy is enabled, the chassis output temperature sensor thresholds are altered. This policy setting is provided to accommodate operating temperature requirements for certain PCIe cards.

1. **Log in to the Oracle ILOM CLI.**

   See "Accessing Oracle ILOM" on page 19.

2. **Display the current policies.**

   For example:

```
-> show /SP/policy

/SP/policy
Targets:
```

```
Properties:
 ENHANCED_PCIE_COOLING_MODE = disabled
 HOST_AUTO_POWER_ON = disabled
 HOST_LAST_POWER_STATE = disabled
```

3. **Enable or disable a policy.**

```
-> set /SP/policy policy_name=enabled|disabled
```

For example:

```
-> set /SP/policy ENHANCED_PCIE_COOLING_MODE=enabled
```

4. **Verify the policy.**

```
-> show /SP/policy

/SP/policy
Targets:

Properties:
 ENHANCED_PCIE_COOLING_MODE = enabled
 HOST_AUTO_POWER_ON = disabled
 HOST_LAST_POWER_STATE = disabled
```

Related Information

- Oracle ILOM documentation library at: http://www.oracle.com/goto/ILOM/docs
- “Accessing Oracle ILOM” on page 19

Configuring the SP and Oracle ILOM (Oracle ILOM Web Interface)

Use these topics to perform common SP configuration tasks using the Oracle ILOM web interface.

Note - For more comprehensive SP configuration information, and for performing equivalent tasks using the Oracle ILOM CLI, refer to the Oracle ILOM 3.2 documentation. See http://www.oracle.com/goto/ILOM/docs.

- “Change the Oracle ILOM Root Password (Oracle ILOM Web Interface)” on page 70
- “Configure User Accounts (Oracle ILOM Web Interface)” on page 72

Related Information

- “Configuring the SP and Oracle ILOM (Oracle ILOM CLI)” on page 59
- “Configuring the SP and Oracle ILOM (BIOS)” on page 75
- “Configuring the SP and Oracle ILOM (OSA)” on page 77

▼ (Optional) Configure the Oracle ILOM Identity

Use this task to assign a unique identification to this server's SP. This task is optional but enables you to easily identify the SP from other SPs in your environment.

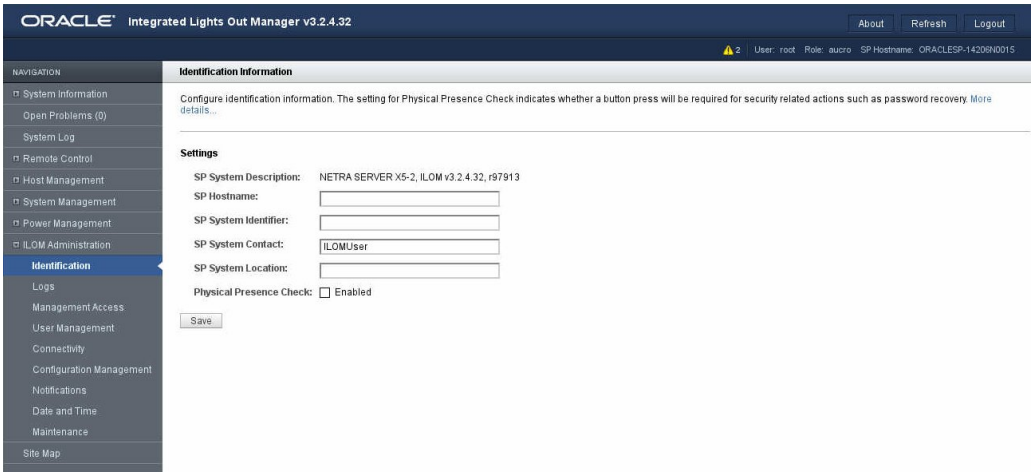
You must have Oracle ILOM Admin (a) privileges to perform this task.

1. **Access the Oracle ILOM web interface.**

   See “Log In To the Oracle ILOM Web Interface” on page 20.

2. **Navigate to the ILOM Administration → Identification page.**

   The Identification Information page is displayed.



3. **Enter the identification information in the fields.**

The fields have these characteristics:

- **Hostname** – The host name can contain up to 60 characters. It must begin with a letter and it must contain only alphanumeric, hyphen, and underscore characters.
- **System Identifier** – The system identifier can contain up to 60 characters using any standard keyboard keys except quotation marks.
- **System Contact** – The system contact can consist of a text string using any standard keyboard keys except quotation marks.
- **System Location** – The system location can consist of a text string using any standard keyboard keys except quotation marks.
- **Physical Presence Check** – For security reasons, this option is enabled by default. When this option is enabled, you must press the Locator button on the server to recover the Oracle ILOM password or to perform other security-related actions.

4. **Click Save.**

5. **(Optional) Log out of Oracle ILOM.**

   See “Log Out of Oracle ILOM” on page 27.

Related Information

- Oracle ILOM documentation library at: `http://www.oracle.com/goto/ILOM/docs`
- “Accessing Oracle ILOM” on page 19
- “Configure the NET MGT Port (NET MGT)” on page 66
- “Configure the SP SER MGT Port” on page 68
- “Configure the SP Date and Time” on page 69
- “Change the Oracle ILOM Root Password (Oracle ILOM Web Interface)” on page 70
- “Configure User Accounts (Oracle ILOM Web Interface)” on page 72
- “Oracle ILOM User Roles” on page 74

▼ Configure the NET MGT Port (NET MGT)

1. **Access the Oracle ILOM web interface.**

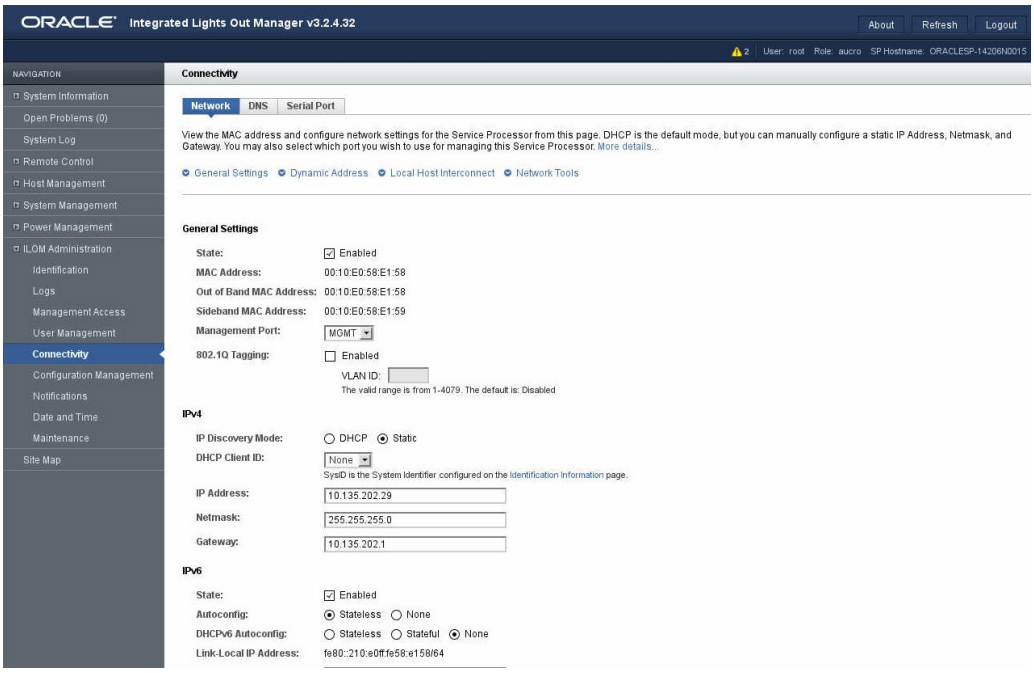
   See “Log In To the Oracle ILOM Web Interface” on page 20.

2. **Navigate to the ILOM Administration → Connectivity page.**

   The Connectivity page is displayed.

3. **Click the Network tab.**

The Network Settings page is displayed.



4. **Configure the settings to suit your network environment.**

5. **Click Save.**

6. **(Optional) Log out of Oracle ILOM.**

   See “Log Out of Oracle ILOM” on page 27.

Related Information

- Oracle ILOM documentation library at: `http://www.oracle.com/goto/ILOM/docs`
- “Accessing Oracle ILOM” on page 19
- “(Optional) Configure the Oracle ILOM Identity” on page 65
- “Configure the SP SER MGT Port” on page 68
- “Configure the SP Date and Time” on page 69
- “Change the Oracle ILOM Root Password (Oracle ILOM Web Interface)” on page 70
- “Configure User Accounts (Oracle ILOM Web Interface)” on page 72
- “Oracle ILOM User Roles” on page 74

Configure the SP SER MGT Port

Use this procedure to configure the SER MGT port settings.

Note - The data bits, parity, and stop bits of the SER MGT port are not configurable and hard-coded to the values of 8, n, and 1 respectively.

These are the default settings:

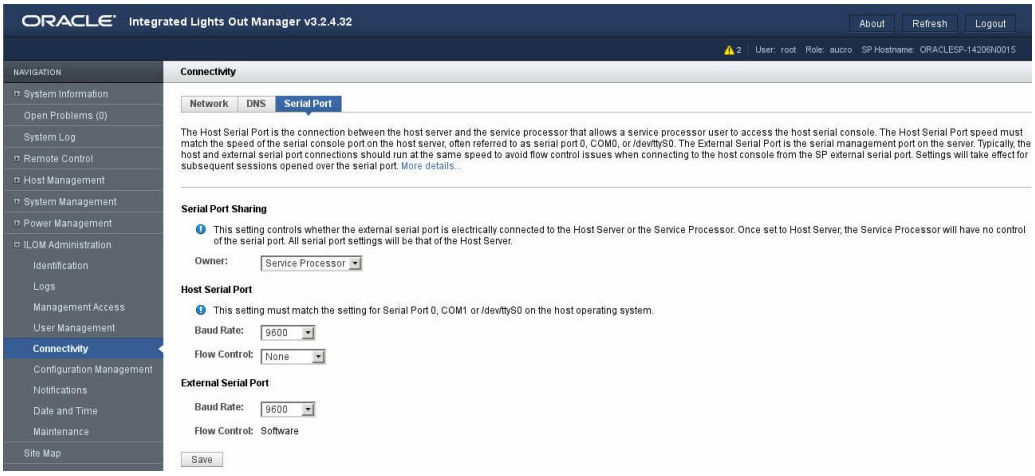
- Serial port is connected to the SP
- 9600 baud
- No flow control

Note - The default values work for most environments. If the default values are suitable for your environment, do not perform this procedure.

1. **Access the Oracle ILOM web interface.**
   See "Log In To the Oracle ILOM Web Interface" on page 20.

2. **Navigate to the ILOM Administration → Connectivity page.**
   The Connectivity page is displayed.

3. **Click the Serial Port tab.**
   The Serial Port Settings page is displayed.



4. **Configure the port settings according to your environment.**

5. **Click Save.**

6. **(Optional) Log out of Oracle ILOM.**
   See “Log Out of Oracle ILOM” on page 27.

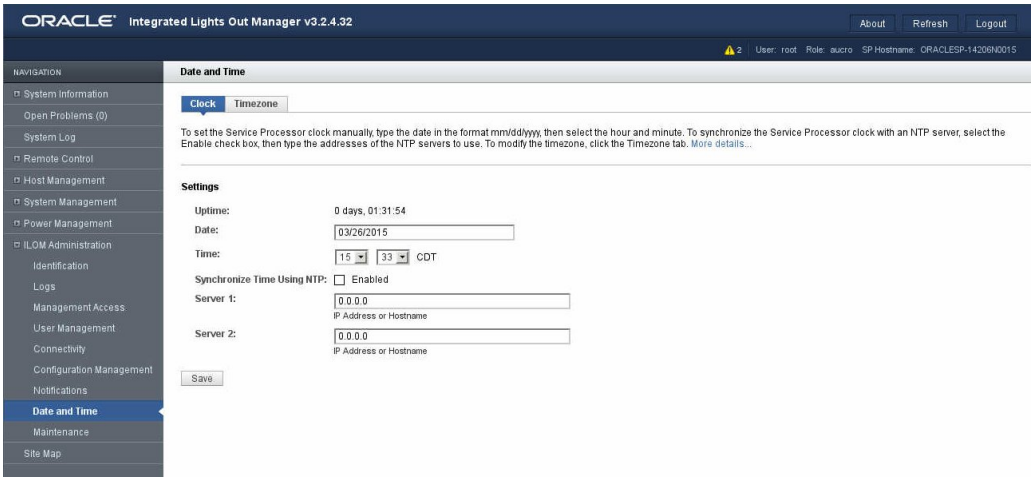
Related Information

- Oracle ILOM documentation library at: `http://www.oracle.com/goto/ILOM/docs`
- “Accessing Oracle ILOM” on page 19
- “(Optional) Configure the Oracle ILOM Identity” on page 65
- “Configure the NET MGT Port (NET MGT)” on page 66
- “Configure the SP Date and Time” on page 69
- “Change the Oracle ILOM Root Password (Oracle ILOM Web Interface)” on page 70
- “Configure User Accounts (Oracle ILOM Web Interface)” on page 72
- “Oracle ILOM User Roles” on page 74

Configure the SP Date and Time

1. **Access the Oracle ILOM web interface.**
   See “Log In To the Oracle ILOM Web Interface” on page 20.

2. **Navigate to the ILOM Administration → Date and Time page.**
   The Date and Time page is displayed.



3. **Set the date and time, or configure the SP to use an NTP server.**
4. **Click Save.**
5. **Click the Timezone tab.**

   The Timezone Settings page is displayed.
6. **Select your timezone from the drop-down menu.**
7. **Click Save.**
8. **(Optional) Log out of Oracle ILOM.**

   See “Log Out of Oracle ILOM” on page 27.

Related Information

- Oracle ILOM documentation library at: `http://www.oracle.com/goto/ILOM/docs`
- “Accessing Oracle ILOM” on page 19
- “(Optional) Configure the Oracle ILOM Identity” on page 65
- “Configure the NET MGT Port (NET MGT)” on page 66
- “Configure the SP SER MGT Port” on page 68
- “Change the Oracle ILOM Root Password (Oracle ILOM Web Interface)” on page 70
- “Configure User Accounts (Oracle ILOM Web Interface)” on page 72
- “Oracle ILOM User Roles” on page 74

▼ Change the Oracle ILOM Root Password (Oracle ILOM Web Interface)

The server ships with a root account that you use to initially log in to Oracle ILOM. This account has administrative privileges (read and write) for all Oracle ILOM features, functions, and commands. The default password is `changeme`.To prevent unauthorized access, change the password.

1. **Access the Oracle ILOM web interface.**

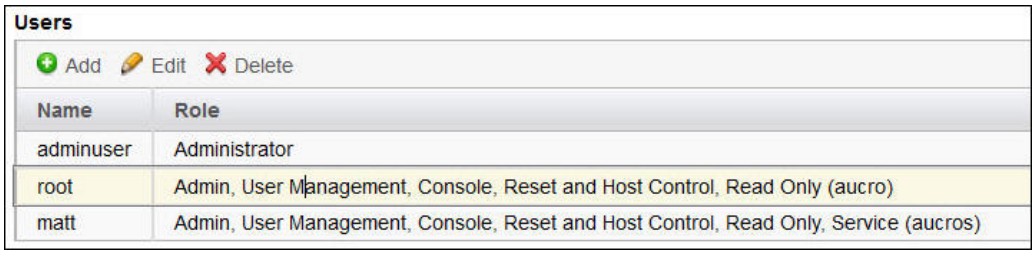
   See “Log In To the Oracle ILOM Web Interface” on page 20.
2. **Navigate to the ILOM Administration → User Management page.**

   The Active Sessions page is displayed.
3. **Click the User Accounts tab.**

The User Account Settings page is displayed.

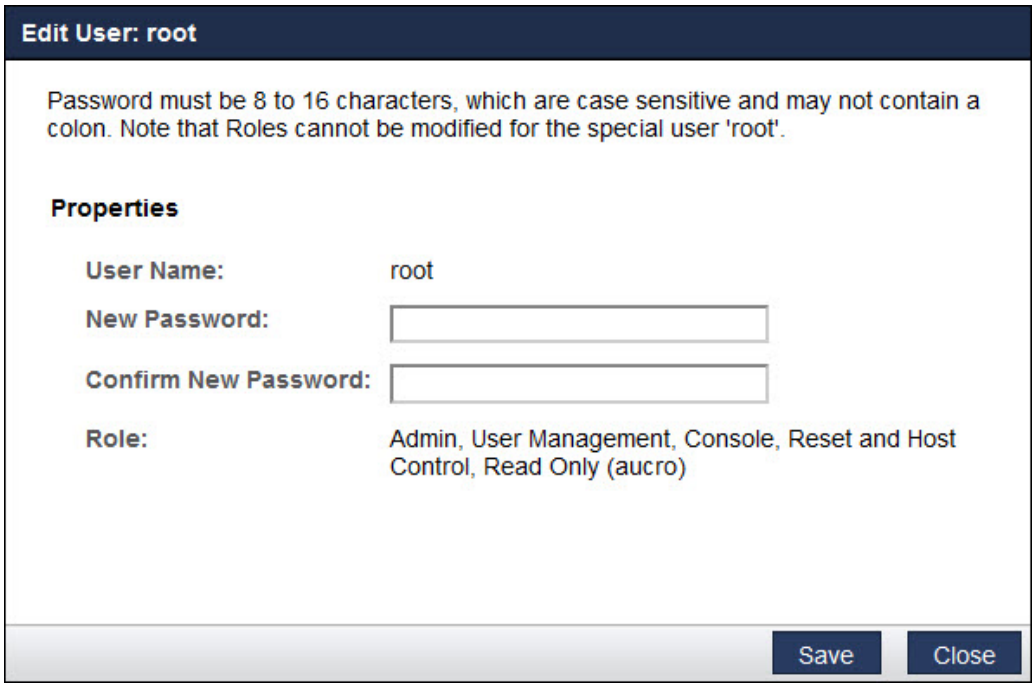
4. **In the Users panel, select the root account.**

   For example:



5. **Click Edit.**

   A separate window is displayed.



6. **Enter a new root account password and password confirmation.**

7. **Click Save.**

8. **(Optional) Log out of Oracle ILOM.**

   See “Log Out of Oracle ILOM” on page 27.

Related Information

- Oracle ILOM documentation library at: `http://www.oracle.com/goto/ILOM/docs`
- “Accessing Oracle ILOM” on page 19
- “(Optional) Configure the Oracle ILOM Identity” on page 65
- “Configure the NET MGT Port (NET MGT)” on page 66
- “Configure the SP SER MGT Port” on page 68
- “Configure the SP Date and Time” on page 69
- “Configure User Accounts (Oracle ILOM Web Interface)” on page 72
- “Oracle ILOM User Roles” on page 74

▼ Configure User Accounts (Oracle ILOM Web Interface)

If you need to provide controlled access to Oracle ILOM, use this procedure to create up to 10 user accounts with specific roles.

1. **Access the Oracle ILOM web interface.**

   See “Log In To the Oracle ILOM Web Interface” on page 20.

2. **Navigate to the ILOM Administration → User Management page.**

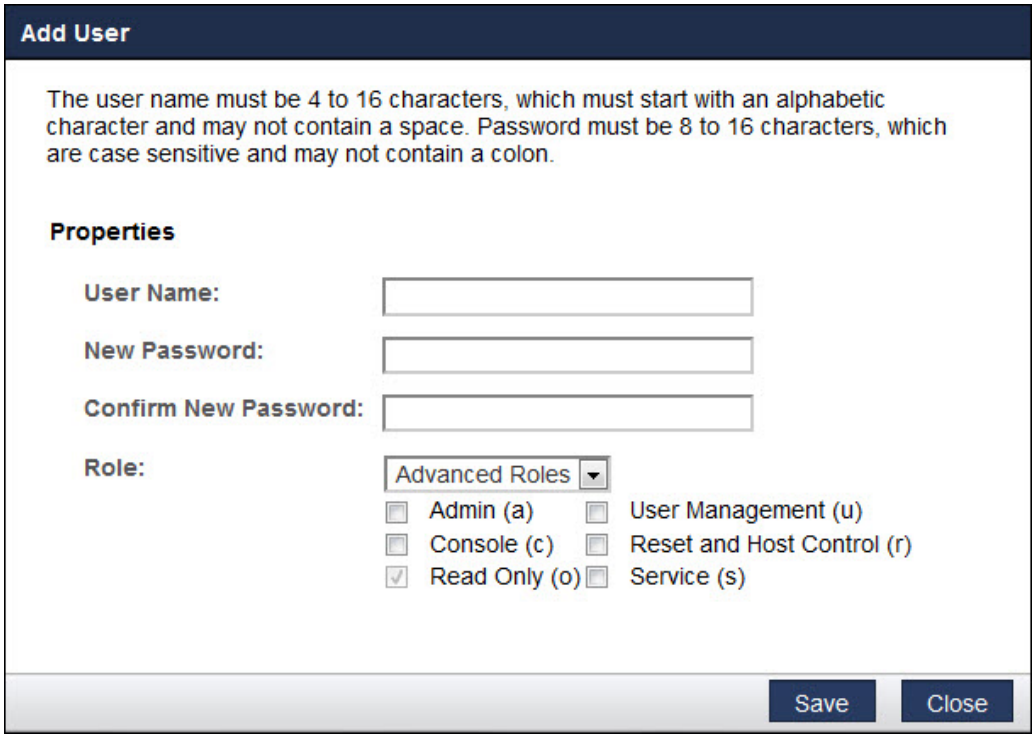
   The Active Sessions page is displayed.

3. **Click the User Accounts tab.**

   The User Account Settings page is displayed.

4. **In the Users panel, click Add.**

A separate window is displayed.



5. **Enter the user name, password, and password confirmation.**

6. **Select the appropriate roles for this user.**

   See "Oracle ILOM User Roles" on page 74.

7. **Click Save.**

   The window closes and the user is added to the list of users in the Users panel.

8. **(Optional) Log out of Oracle ILOM.**

   See "Log Out of Oracle ILOM" on page 27.

Related Information

- Oracle ILOM documentation library at: `http://www.oracle.com/goto/ILOM/docs`
- "Accessing Oracle ILOM" on page 19
- "(Optional) Configure the Oracle ILOM Identity" on page 65

- "Configure the NET MGT Port (NET MGT)" on page 66
- "Configure the SP SER MGT Port" on page 68
- "Configure the SP Date and Time" on page 69
- "Change the Oracle ILOM Root Password (Oracle ILOM Web Interface)" on page 70
- "Oracle ILOM User Roles" on page 74

Oracle ILOM User Roles

TABLE 1 Oracle ILOM User Account Roles

Role	CLI Notation	Privileges
Admin	a	User is authorized to view and change the state of Oracle ILOM configuration variables, with the exception of tasks that require an Admin user to also have User Management, Reset and Host Control, and Console roles enabled.
User Management	u	User is authorized to create and delete user accounts, change user passwords, change roles assigned to other users, and enable or disable the physical-access requirement for the default user account. This role also includes authorization to set up LDAP, LDAP/SSL, RADIUS, and Active Directory.
Console	c	User is authorized to access the Oracle ILOM Remote Console and the SP console, and to view and change the state of the Oracle ILOM console configuration variables.
Reset and Host Control	r	User is authorized to operate the server, which includes power control, reset, hot-plug, enabling and disabling components, and fault management.
Read Only	o	User is authorized to view the state of the Oracle ILOM configuration variables but cannot make any changes. Users assigned this role can also change the password and the Session Time-Out setting for their own user account.
Service	s	User can assist Oracle service engineers in the event that on-site service is required.

This table lists Oracle ILOM predefined users that you can assign to user accounts that you create.

TABLE 2 Oracle ILOM Predefined Users Roles

Predefined User Roles	Privileges Granted
Administrator	The Administrator user role can simultaneously grant or revoke all privileges provided by the following preconfigured user roles: ■ Admin (a) ■ User Management (u) ■ Console (c) ■ Reset and Host Control (r) ■ Read-Only (o)
Operator	The Operator user role can simultaneously grant or revoke all privileges provided by the following preconfigured user roles: ■ Console (c)

Predefined User Roles	Privileges Granted
	■ Reset and Host Control (r) ■ Read-Only (o)
Advanced Roles	The Advanced Roles can simultaneously grant or revoke some or all the privileges provided by the following pre-configured roles: ■ Admin (a) ■ User Management (u) ■ Console (c) ■ Reset and Host Control (r) ■ Services (s)

Related Information

- Oracle ILOM documentation library at: http://www.oracle.com/goto/ILOM/docs
- “(Optional) Configure the Oracle ILOM Identity” on page 65
- “Configure the NET MGT Port (NET MGT)” on page 66
- “Configure the SP SER MGT Port” on page 68
- “Configure the SP Date and Time” on page 69
- “Change the Oracle ILOM Root Password (Oracle ILOM Web Interface)” on page 70
- “Configure User Accounts (Oracle ILOM Web Interface)” on page 72

Configuring the SP and Oracle ILOM (BIOS)

These topics describe how to configure the SP and Oracle ILOM through BIOS.

- “Configure the SP Network (BIOS)” on page 75
- “Configure the Date and Time (BIOS)” on page 77

Related Information

- “Configuring the SP and Oracle ILOM (Oracle ILOM CLI)” on page 59
- “Configuring the SP and Oracle ILOM (Oracle ILOM Web Interface)” on page 64
- “Configuring the SP and Oracle ILOM (OSA)” on page 77

▼ Configure the SP Network (BIOS)

Use this procedure to configure the network settings for the SP Ethernet port (NET MGT) using the BIOS Setup utility.

1. **Access the BIOS Setup utility.**

   See “Access the BIOS Setup Utility” on page 30.

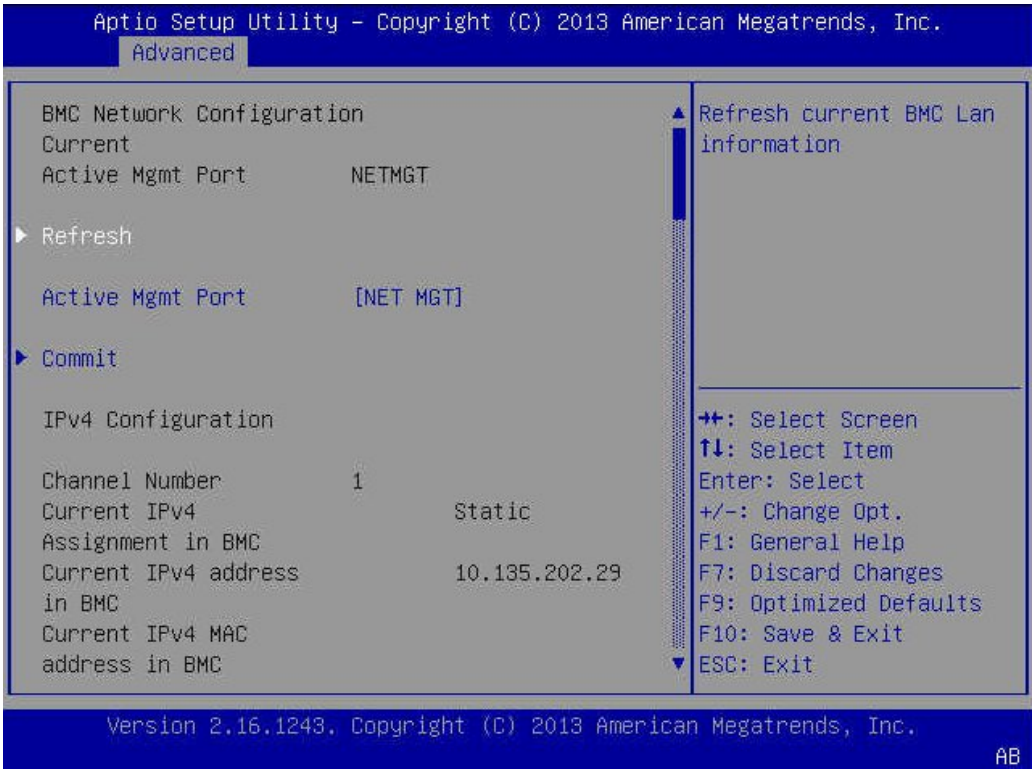
2. **Use the left and right arrow keys to display the Advanced menu.**

   See “Navigate BIOS Setup Utility Menus” on page 33.

3. **Use the up and down keys to highlight BMC Network and press Enter.**

   The BMC Network Configuration window appears.

   The BMC window provides access to the SP NET MGT port configuration.



4. **Change the configuration settings for IPv4 Assignment or IPv6 Assignment according to your network environment.**

5. **Select Refresh.**

   The configuration settings are updated with the latest values.

6. **Select Commit.**

7. **Press F10 to save the changes and exit the BIOS Setup utility.**

Related Information

- “BIOS Overview (Administration)” on page 14
- “Accessing BIOS” on page 28
- “Configure the Date and Time (BIOS)” on page 77

▼ Configure the Date and Time (BIOS)

1. **Access the BIOS Setup utility.**
   See “Access the BIOS Setup Utility” on page 30.
2. **Use the up and down arrow keys to highlight System Date and press Enter.**
3. **Use the Tab key to set the date and press Enter.**
4. **Use the up and down arrow keys to highlight System Time and press Enter.**
5. **Use the Tab key to set the time and press Enter.**
6. **Press F10 to save the changes and exit the BIOS Setup utility.**

Related Information

- “BIOS Overview (Administration)” on page 14
- “Accessing BIOS” on page 28
- “Configure the SP Network (BIOS)” on page 75

Configuring the SP and Oracle ILOM (OSA)

Use these topics to perform common SP configuration tasks using OSA.

- “Configure the SP Network (OSA)” on page 78
- “Set the SP Clock (OSA)” on page 80
- “Change the Oracle ILOM Root Password (OSA)” on page 81
- “Add Oracle ILOM User Accounts (OSA)” on page 83

Related Information

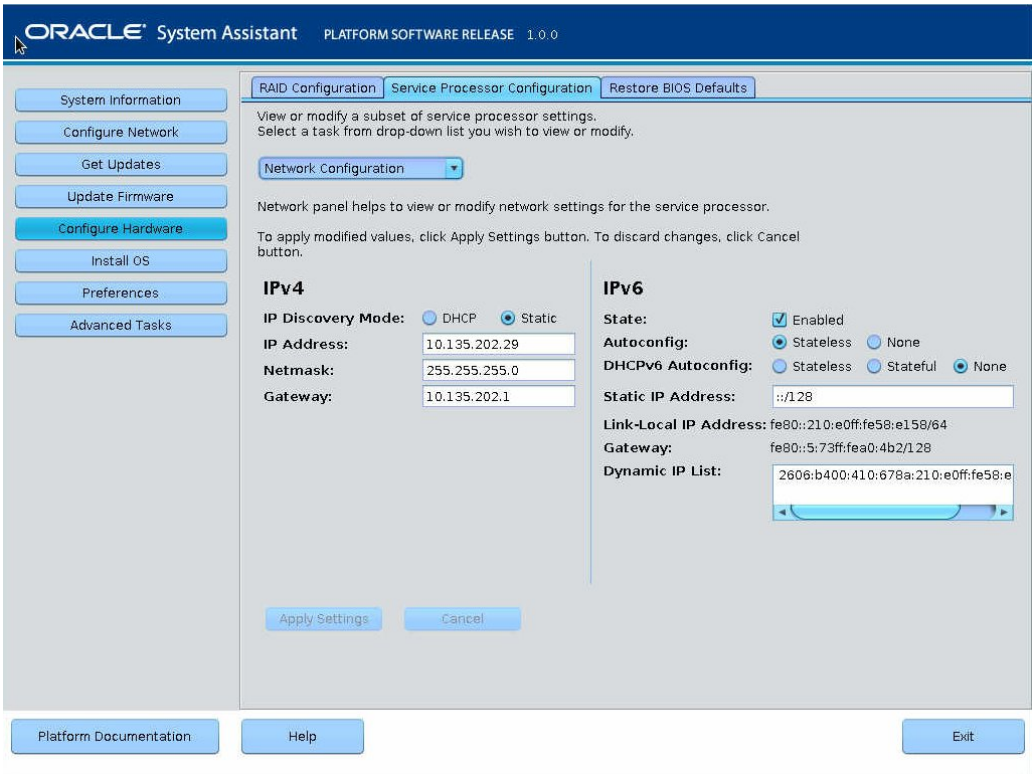
- “Configuring the SP and Oracle ILOM (Oracle ILOM CLI)” on page 59

- “Configuring the SP and Oracle ILOM (Oracle ILOM Web Interface)” on page 64
- “Configuring the SP and Oracle ILOM (BIOS)” on page 75

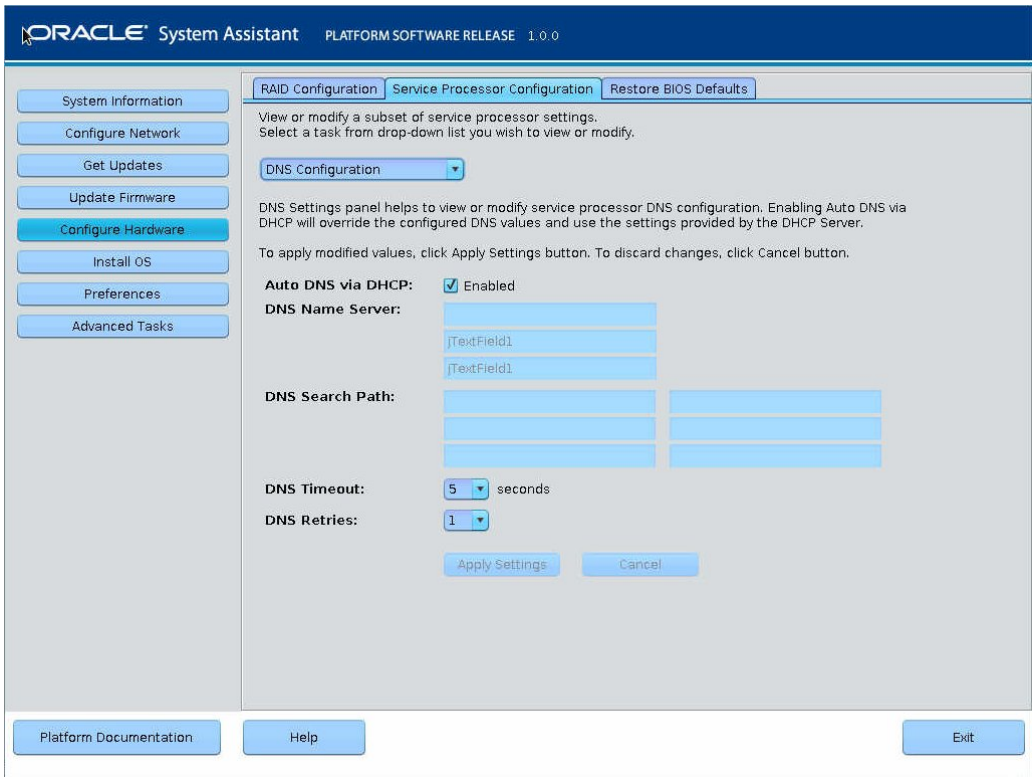
▼ Configure the SP Network (OSA)

Use this procedure to configure the network settings for the SP NET MGT port using OSA.

1. **Access OSA.**
   See “Accessing OSA” on page 35.
2. **Click Configure Hardware.**
3. **Click the Service Processor Configuration tab.**
4. **Select Network Configuration from the drop-down menu.**
   The SP Network Configuration window is displayed.



5. **Configure the SP network settings for your environment.**
6. **Click Apply Settings.**
7. **Select DNS from the drop-down menu.**
   The SP DNS window is displayed.



8. **Configure the DNS settings for your environment.**
9. **Click Apply Settings.**
10. **(Optional) Log out of OSA.**
    See “Log Out of OSA” on page 38.

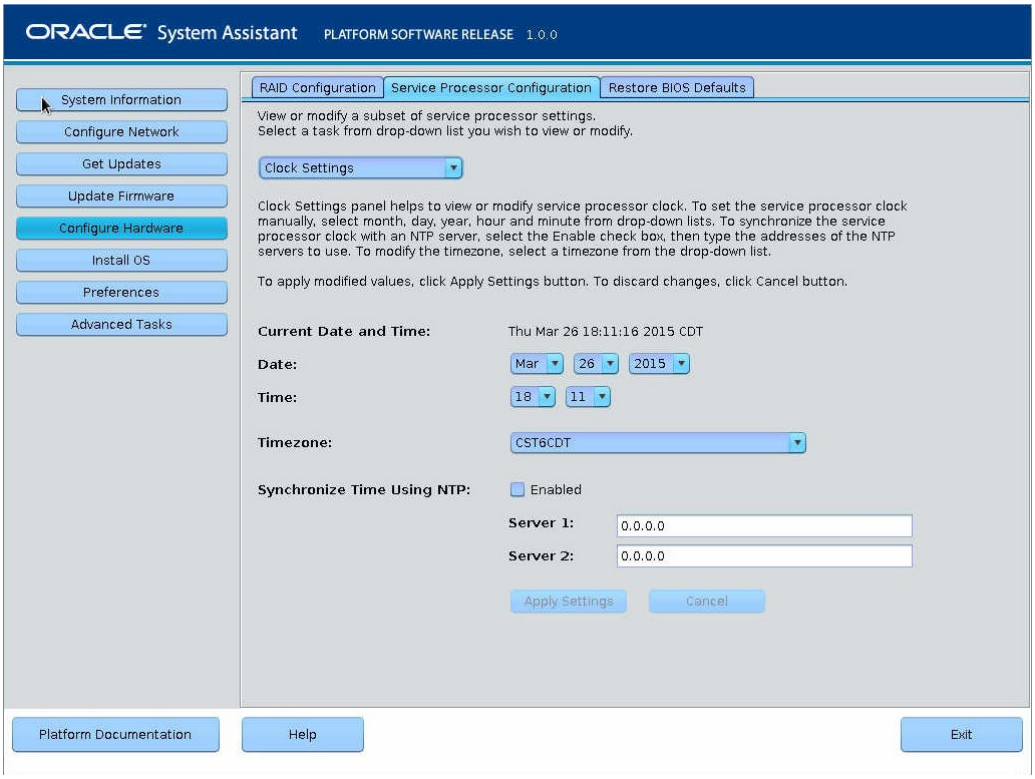
Related Information

- “OSA Overview” on page 15
- “Accessing OSA” on page 35

▼ Set the SP Clock (OSA)

Use this procedure to set the SP clock manually, or to use an NTP server.

1. **Access OSA.**
   See "Accessing OSA" on page 35.
2. **Click Configure Hardware.**
3. **Click the Service Processor Configuration tab.**
4. **Select Clock Settings from the drop-down menu.**



5. **Configure the settings.**

6. **Click Apply Settings.**

7. **(Optional) Log out of OSA.**
   See “Log Out of OSA” on page 38.

Related Information

- “OSA Overview” on page 15
- “Accessing OSA” on page 35
- “Configure the SP Network (OSA)” on page 78
- “Change the Oracle ILOM Root Password (OSA)” on page 81
- “Add Oracle ILOM User Accounts (OSA)” on page 83

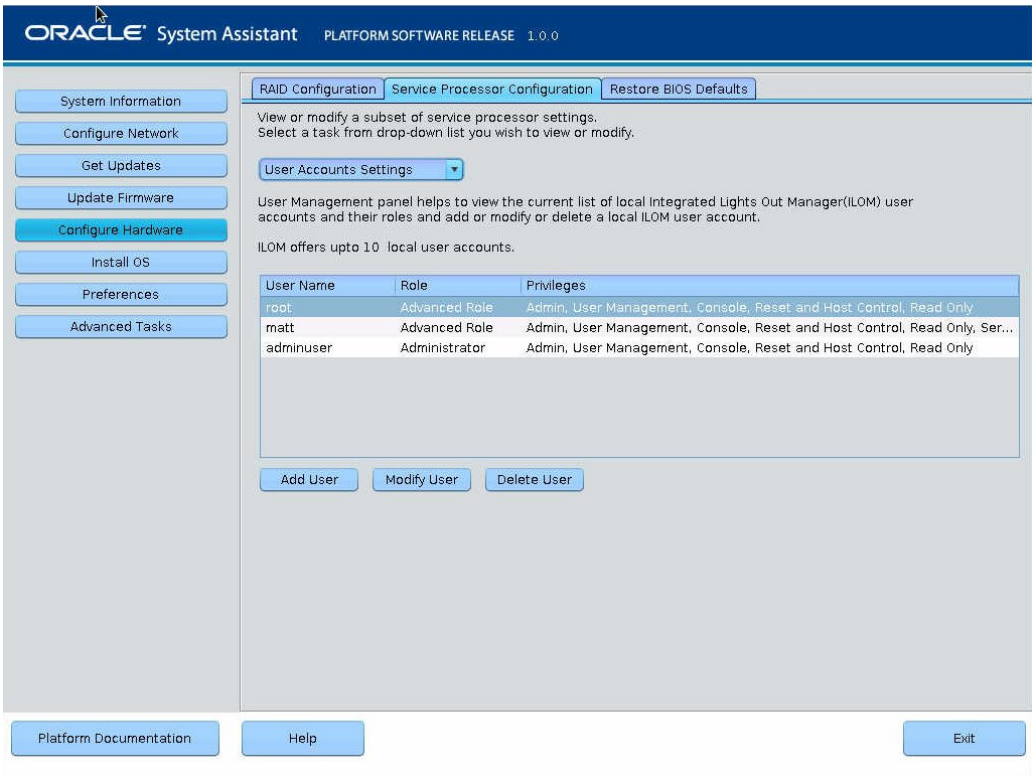
▼ Change the Oracle ILOM Root Password (OSA)

1. **Access OSA.**
   See “Accessing OSA” on page 35.

2. **Click Configure Hardware.**

3. **Click the Service Processor Configuration tab.**

4. **Select User Accounts from the drop-down menu.**



5. **In the list of users, select the root user.**

6. **Click Modify User.**

   The Modify User window is displayed.

7. **Enter the new root password and confirm the password.**

8. **Click Modify User.**

9. **(Optional) Log out of OSA.**

   See "Log Out of OSA" on page 38.

Related Information

- "OSA Overview" on page 15
- "Accessing OSA" on page 35

- “Configure the SP Network (OSA)” on page 78
- “Set the SP Clock (OSA)” on page 80
- “Add Oracle ILOM User Accounts (OSA)” on page 83

▼ Add Oracle ILOM User Accounts (OSA)

1. **Access OSA.**

   See “Accessing OSA” on page 35.

2. **Click Configure Hardware.**

3. **Click the Service Processor Configuration tab.**

4. **Select User Accounts from the drop-down menu.**

   The User Account window is displayed.

5. **Click Add User.**

The Add User window is displayed.

6. **Assign the user name, roles, and password.**
   See "Oracle ILOM User Roles" on page 74.

7. **Click Add User.**
   The user is added.

8. **(Optional) Log out of OSA.**
   See "Log Out of OSA" on page 38.

Related Information

- "OSA Overview" on page 15
- "Accessing OSA" on page 35
- "Configure the SP Network (OSA)" on page 78

- “Set the SP Clock (OSA)” on page 80
- “Change the Oracle ILOM Root Password (OSA)” on page 81

Configuring BIOS

Use these topics to configure BIOS.

Related Information

- "Understanding Administration Resources" on page 11
- "Accessing Administration Tools" on page 19
- "Controlling the Server" on page 43
- "Configuring Power-On and Boot Options" on page 49
- "Configuring Oracle ILOM" on page 59
- "Enabling or Disabling OSA" on page 99
- "Monitoring the Server" on page 103
- "Updating the Firmware and Software" on page 127

Resetting the BIOS to Default Settings

If you want to set the BIOS to default settings, use one of these procedures based on the tool you plan to use:

Related Information

- "Configuring Legacy Option ROM Allocation" on page 89
- "Configuring I/O Resource Allocation" on page 93
- "Configuring Devices in BIOS" on page 95

Reset the BIOS to Default Settings (Oracle ILOM)

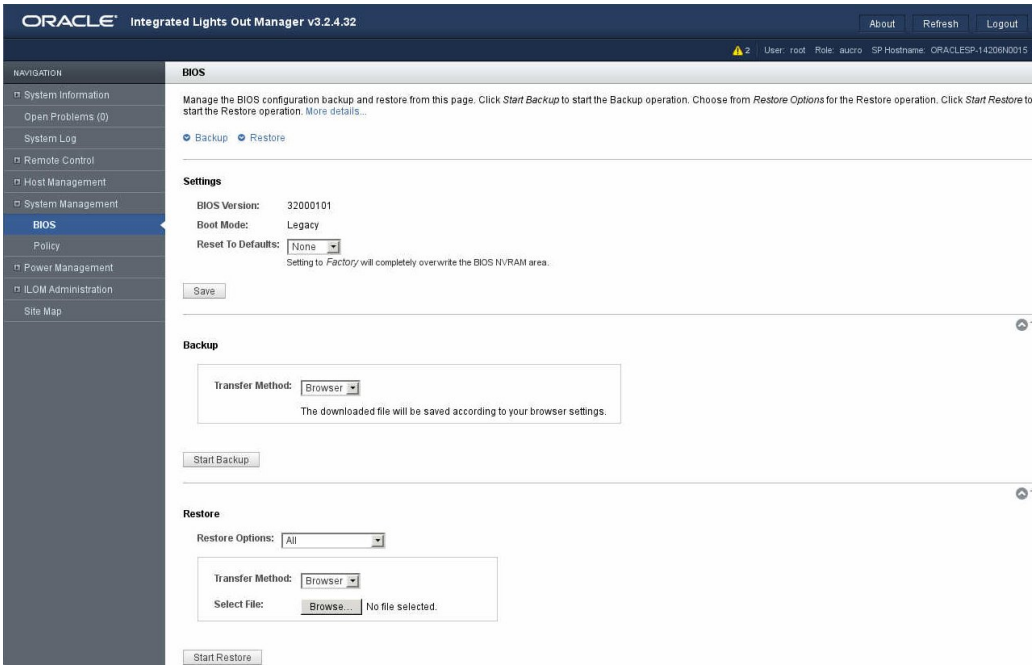
Use this procedure to set the BIOS settings to factory default settings using the Oracle ILOM web interface.

Caution - Resetting the BIOS to factory default values overwrites any custom BIOS settings.

1. **Log in to the Oracle ILOM web interface.**

   See "Log In To the Oracle ILOM Web Interface" on page 20.

2. **Navigate to the System Management → BIOS page.**



3. **From the Reset To Defaults drop-down menu, select Factory.**

4. **Click Save.**

5. **Reset the host.**

   See "Reset the Host" on page 45.

Related Information

- “BIOS Overview (Administration)” on page 14
- “Accessing Oracle ILOM” on page 19
- “Reset the Host” on page 45
- “Reset the BIOS to Default Settings (BIOS)” on page 89

▼ Reset the BIOS to Default Settings (BIOS)

Use this procedure to set the BIOS settings to factory default settings using the BIOS Setup utility.

Caution - Resetting the BIOS to factory default values overwrites any custom BIOS settings.

1. **Access the BIOS Setup utility.**
   See “Accessing BIOS” on page 28.
2. **Press the F9 key to automatically load the factory default settings.**
   A message appears prompting you to continue this operation by selecting OK or to cancel the operation by selecting Cancel.
3. **Confirm the changes by highlighting OK, then press Enter.**
   The BIOS Setup utility window appears with the cursor highlighting the first value on the window.
4. **Press F10 to save the changes and exit the BIOS Setup utility.**

Related Information

- “BIOS Overview (Administration)” on page 14
- “Accessing BIOS” on page 28
- “Reset the Host” on page 45
- “Reset the BIOS to Default Settings (Oracle ILOM)” on page 88

Configuring Legacy Option ROM Allocation

Use these topics to configure BIOS to load only necessary legacy option ROMs. Doing so minimizes server boot time and reduces the likelihood of exhausting the available Option ROM address space.

- "Legacy Option ROM Allocation" on page 90
- "Enable or Disable Option ROM Settings" on page 91

Related Information

- "Resetting the BIOS to Default Settings" on page 87
- "Configuring I/O Resource Allocation" on page 93
- "Configuring Devices in BIOS" on page 95

Legacy Option ROM Allocation

In Legacy BIOS mode, PC architecture constraints are placed on legacy option ROM allocation.

Note - These constraints are not placed on UEFI option ROMs, which are often referred to as UEFI drivers.

The server BIOS allocates 128 Kbytes of address space for legacy option ROMs. This address space is shared between on-board devices and PCIe add-in cards. This fixed address space limitation is imposed by the PC architecture and not by the BIOS itself. When BIOS completes POST, the option ROM for each device is loaded into the shared address space.

If you add PCIe cards, it is possible to exhaust the available address space. When the address space is exhausted, Oracle ILOM displays and logs this error message:

```
Option ROM Space Exhausted - Device XXX Disabled
```

This message means that one or more devices cannot load option ROMs.

By default, all on-board legacy options ROMs are enabled in the BIOS. However, you can disable most of these option ROMs, unless they are required to support booting from the associated device or to provide some other boot-time function.

For example, it is not necessary to load the option ROM for the on-board network ports unless you want to boot from one or more network ports. Even then, you can disable the options ROMs for the remaining ports.

To minimize server boot time and reduce the likelihood of exhausting the available option ROM address space, disable the option ROMs for all devices that you do not intend to boot from.

Enable option ROMs only for those devices from which you intend to boot. If option ROMs are enabled for more than one boot device, you might encounter an option ROM exhaustion condition. If you encounter the option ROM space exhausted condition even after disabling all devices from which you do not intend to boot, then disable additional option ROMs. Under

some circumstances it might be necessary to disable option ROMs for all devices except for the primary boot device.

Related Information

- “BIOS Overview (Administration)” on page 14
- “Enable or Disable Option ROM Settings” on page 91

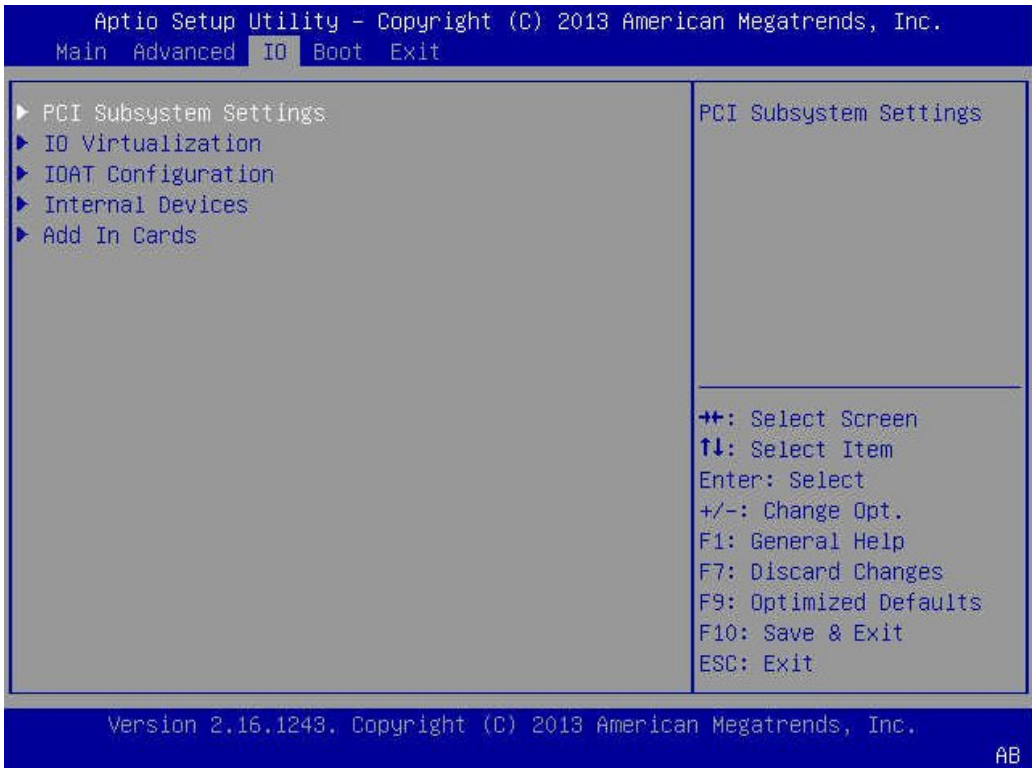
▼ Enable or Disable Option ROM Settings

1. **Access the BIOS Setup utility.**

   See “Access the BIOS Setup Utility” on page 30.

2. **Use the left and right arrow keys to display the IO Menu.**

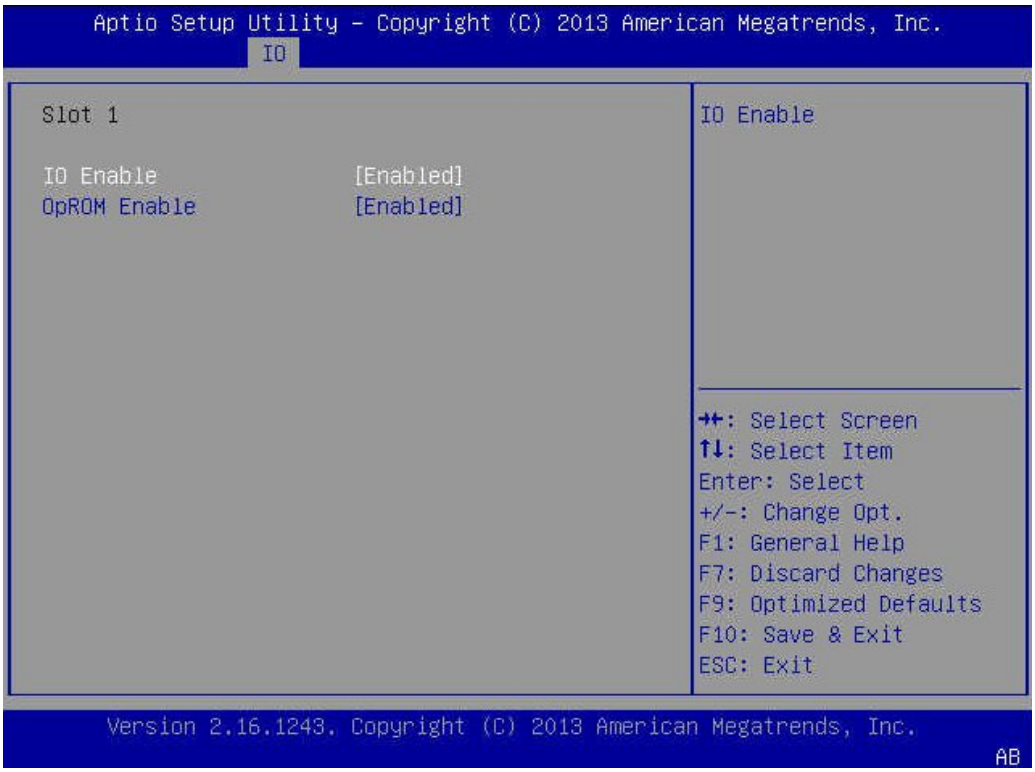
   See “Navigate BIOS Setup Utility Menus” on page 33.



3. **Use the up and down arrow keys to highlight Internal Devices or Add In Cards, and press Enter.**

4. **Select the Internal Device or Add In Card slot for which you want to enable or disable the option ROM setting.**

   The Option ROM window for that device or add-in card slot appears.



5. **Select Enabled to enable the Option ROM setting, or Disabled to disable the Option ROM setting.**

Note - Disable the option ROMs for all devices that you do not intend to boot from.

6. **Press F10 to save the changes and exit the BIOS Setup utility.**

   See "Exit the BIOS Setup Utility" on page 34.

Related Information

- "BIOS Overview (Administration)" on page 14

- “Legacy Option ROM Allocation” on page 90

Configuring I/O Resource Allocation

Use these topics to configure I/O resource allocation. If the server reports PCI resource exhaustion errors, you must configure the allocation.

- “I/O Resource Allocation” on page 93
- “Enable or Disable I/O Resource Allocation” on page 94

Related Information

- “Resetting the BIOS to Default Settings” on page 87
- “Configuring Legacy Option ROM Allocation” on page 89
- “Configuring Devices in BIOS” on page 95

I/O Resource Allocation

The server provides 64 Kbytes of I/O address space. With the increasing number of PCIe devices supported on the server, there is a possibility that there is not enough I/O resources for all the devices.

It is safe, but not typically required, for you to disable I/O resource allocation for any cards that are not intended to be used as bootable devices.

Through the BIOS Setup utility, you can enable or disable the I/O resource allocation for each PCIe slot. The default for this option is enabled. When enabled, I/O resources are allocated to the device as normal. When disabled, I/O resources are not allocated to the device.

If there are one or more Sun Quad Port GigabitEthernet PCIe Low Profile Adapter Cards installed in the server, the BIOS might detect a condition where legacy I/O address space resources are exhausted. The following is a common form of error that might be logged:

```
6491 Tue Dec 7 14:19:57 2010 IPMI Log minor
ID = a5a9 : 12/07/2010 : 14:19:57 : System Firmware Error :
sensor number
= 0x00 : PCI resource exhaustion : Bus 147 Device 0 Func 0
6490 Tue Dec 7 14:19:57 2010 IPMI Log minor
ID = a5a8 : 12/07/2010 : 14:19:57 : System Firmware Error :
sensor number
```

```
= 0x00 : PCI resource exhaustion : Bus 147 Device 0 Func 1
```

To eliminate the PCI resource exhaustion condition, disable I/O resource allocation for any slot in which the Quad GigabitEthernet card is installed unless you intend to use that card as a bootable device.

If you intend to use that card as a bootable device and you are encountering a PCI resource exhaustion event for that specific device, then you must disable I/O allocation for some of the other cards in the server.

Related Information

- “BIOS Overview (Administration)” on page 14
- “Enable or Disable I/O Resource Allocation” on page 94

▼ Enable or Disable I/O Resource Allocation

Use this procedure to manage configuration settings for I/O devices, such as I/O virtualization settings.

1. **Access the BIOS Setup utility.**
   See “Access the BIOS Setup Utility” on page 30.
2. **Use the left and right arrow keys to display the IO Menu.**
   See “Navigate BIOS Setup Utility Menus” on page 33.
3. **Enable of disable the I/O resource.**
   a. **Select Add In Cards.**
   b. **Select a Slot.**
   c. **Select IO Enable.**
   d. **Select Enabled or Disabled.**
4. **Press F10 to save the changes and exit the BIOS Setup utility.**
   See “Exit the BIOS Setup Utility” on page 34.

Related Information

- “BIOS Overview (Administration)” on page 14

- “I/O Resource Allocation” on page 93
- “Accessing BIOS” on page 28

Configuring Devices in BIOS

The method for interacting with configuration utilities for add-on cards and I/O adapters differs depending on whether the BIOS is configured for Legacy BIOS Mode or UEFI Boot Mode.

Use these topics, if needed, to configure devices in BIOS:

- “Modify Device Configuration (UEFI Boot Mode)” on page 95
- “Modify Device Configuration (Legacy Boot Mode)” on page 97

Related Information

- “Resetting the BIOS to Default Settings” on page 87
- “Configuring Legacy Option ROM Allocation” on page 89
- “Configuring I/O Resource Allocation” on page 93

▼ Modify Device Configuration (UEFI Boot Mode)

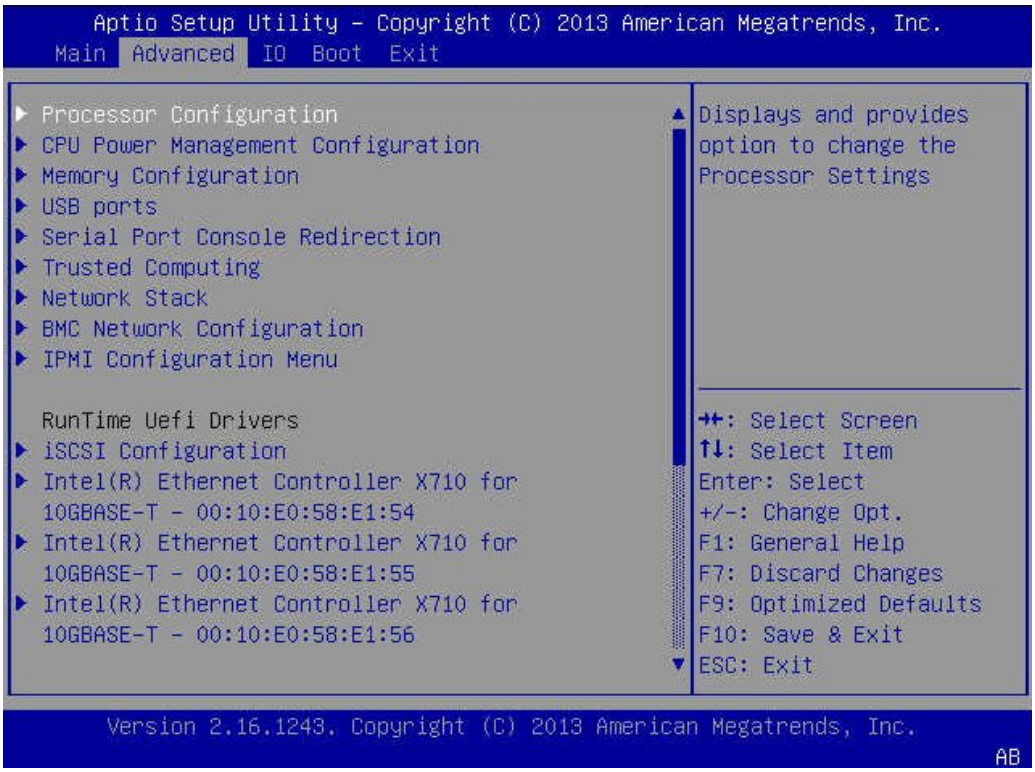
You access the configuration windows for the add-on cards through the BIOS Setup utility IO menu. For example, if the Oracle Storage 12 Gb/s SAS PCIe RAID HBA is installed in the server, its configuration utility appears as a selection under the BIOS RunTime UEFI Drivers heading.

1. **Access the BIOS Setup utility.**

   See “Accessing BIOS” on page 28.

2. **Use the left and right arrow keys to display the Advanced menu.**

See “Navigate BIOS Setup Utility Menus” on page 33.



Under RunTime Uefi Drivers, a list of all controllable devices is displayed.

Note - The RunTime UEFI Drivers devices are displayed only after a UEFI boot.

---

3. **Use the up and down arrow keys to highlight a device, and press Enter to configure that device.**
4. **Press F10 to save the changes and exit the BIOS Setup utility.**

Related Information

- *Server OS Installation*, setting up BIOS
- “BIOS Overview (Administration)” on page 14
- “Accessing BIOS” on page 28
- “Modify Device Configuration (Legacy Boot Mode)” on page 97

▼ Modify Device Configuration (Legacy Boot Mode)

You invoke the I/O adapter utilities during BIOS POST progression using hot keys that are identified by the adapter's option ROM during POST. When you press the hot key, the adapter's specific configuration utility interface is displayed.

1. **Access the server from one of these interfaces.**

   - **Log in to the Oracle ILOM web interface and access the Remote Console. See "Log In To the Oracle ILOM Web Interface" on page 20 and "Access the Remote Console (Web Interface)" on page 21.**

   - **Log in to the Oracle ILOM CLI and access the host console. See "Log In To the Oracle ILOM CLI (NET MGT)" on page 23 and "Switch Between the Oracle ILOM CLI and the Host Console" on page 24.**

2. **Reset or power on the server.**

   See "Controlling the Power State" on page 43.

   The BIOS begins to boot and run POST.

3. **When prompted, enter the hot key for the device you want to configure.**

   The device's configuration utility is displayed.

   Note - The utility's interface is a vendor-specific design.

4. **Configure the device according to the utility invoked.**

Related Information

- *Server OS Installation*, setting up BIOS
- "BIOS Overview (Administration)" on page 14
- "Accessing BIOS" on page 28
- "Modify Device Configuration (UEFI Boot Mode)" on page 95

Enabling or Disabling OSA

OSA is a preinstalled provisioning tool that helps you to locally or remotely configure and update server hardware, and to install supported OSs.

OSA is a useful tool in helping to set up the server, however, if the security implications are unacceptable, or if the tool is not needed, you can disable OSA.

For more information about security implications, refer to the *Netra Server X5-2 Security Guide*.

Use these topics to enable or disable OSA:

- “Disable OSA” on page 99
- “Enable OSA” on page 100

Related Information

- “Understanding Administration Resources” on page 11
- “Accessing Administration Tools” on page 19
- “Controlling the Server” on page 43
- “Configuring Power-On and Boot Options” on page 49
- “Configuring Oracle ILOM” on page 59
- “Configuring BIOS” on page 87
- “Monitoring the Server” on page 103
- “Updating the Firmware and Software” on page 127

▼ Disable OSA

You can disable OSA, which places the USB device in an offline state. This situation protects the device from accidental erasure and overwrite.

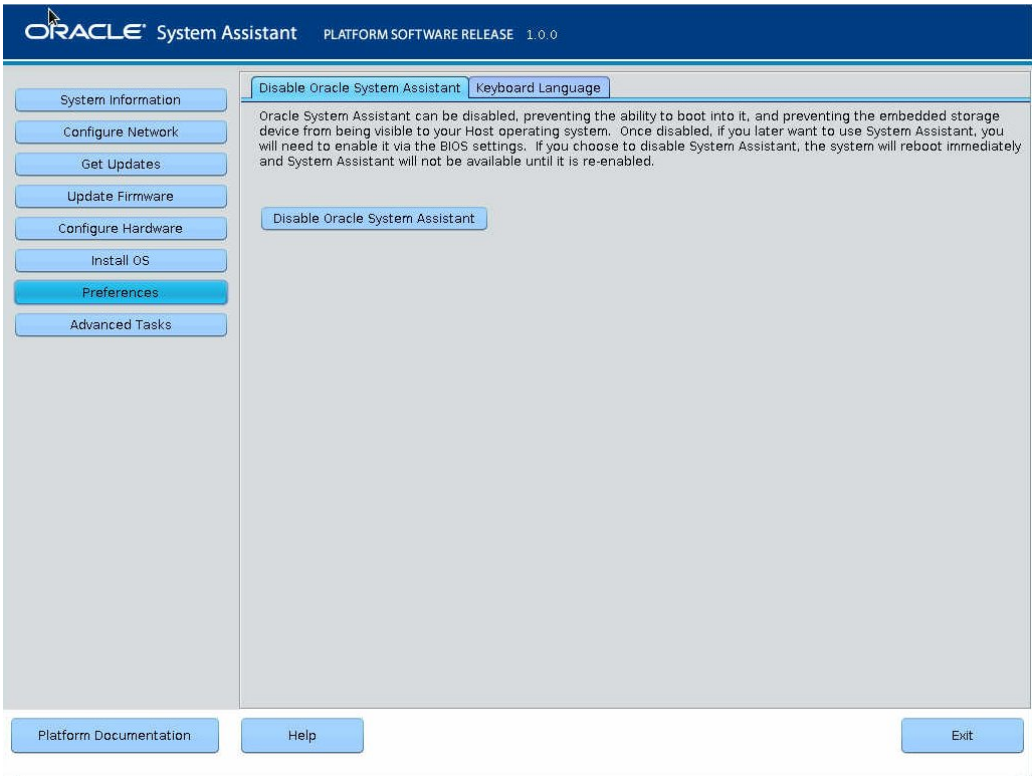
When OSA is disabled, it is not bootable, and the OSA tools, drivers, and files are inaccessible.

1. **Access OSA.**

   See “Accessing OSA” on page 35.

2. **Click Preferences.**

   The preferences page is displayed.



3. **Click Disable Oracle System Assistant.**

4. **(Optional) Log out of OSA.**

   See “Log Out of OSA” on page 38.

Related Information

- “Accessing OSA” on page 35
- “Enable OSA” on page 100

▼ Enable OSA

1. **Access the BIOS Setup utility.**

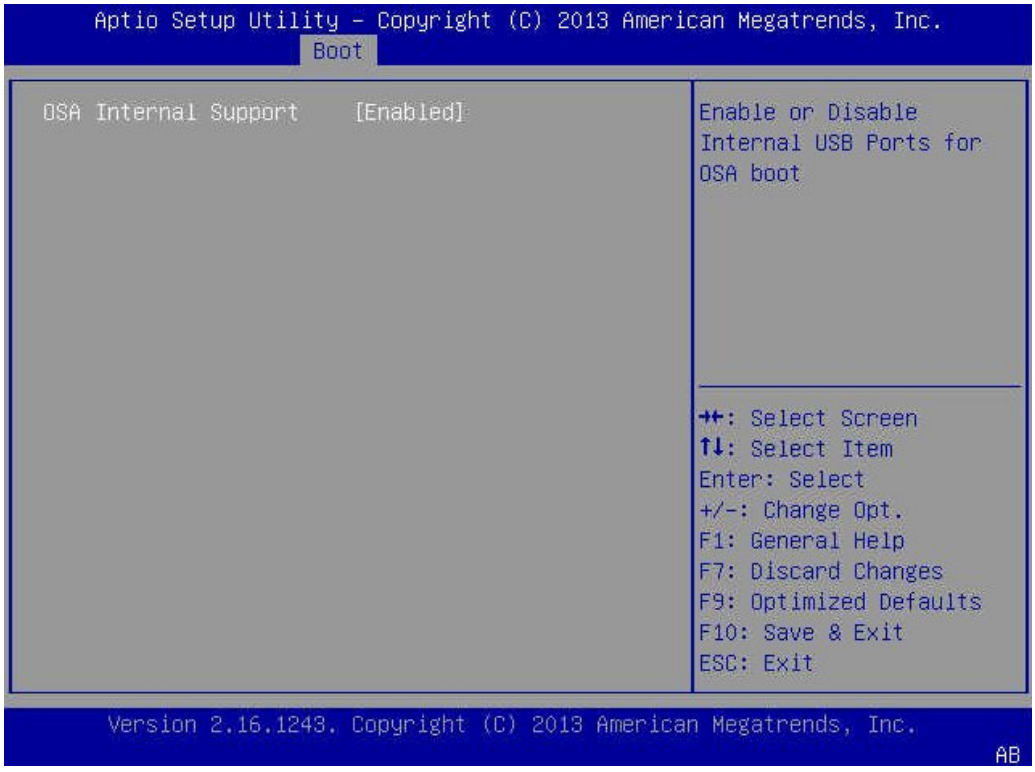
See “Accessing BIOS” on page 28.

2. **Use the left and right arrow keys to display the Boot menu.**

   See “Navigate BIOS Setup Utility Menus” on page 33.

3. **Use the up and down arrow keys to highlight OSA Configuration and press Enter.**

   The OSA Configuration submenu appears.



4. **Press Enter and select Enabled.**

5. **Press F10 to save the changes and exit the BIOS Setup utility.**

Related Information

- “Accessing BIOS” on page 28
- “Disable OSA” on page 99

Monitoring the Server

Use these topics to monitor the server:

Related Information

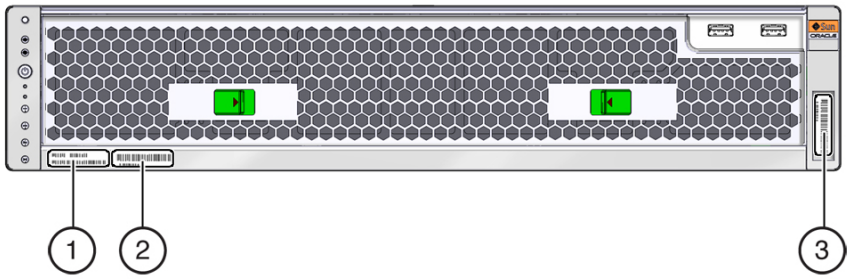
- "Understanding Administration Resources" on page 11
- "Accessing Administration Tools" on page 19
- "Controlling the Server" on page 43
- "Configuring Power-On and Boot Options" on page 49
- "Configuring Oracle ILOM" on page 59
- "Configuring BIOS" on page 87
- "Enabling or Disabling OSA" on page 99
- "Updating the Firmware and Software" on page 127

▼ Obtain the Server Serial Number

- **Use one of these methods to obtain the server identification and serial number.**

  - **Use administrative tools** – You can obtain the server serial number using Oracle ILOM, or the BIOS Setup utility, or through OSA. See "Obtaining Server Information" on page 105.
  - **View the serial number on the server** – The server serial number is on a label on the front of the server in the lower left corner.
  - **Use a barcode reader** – The server serial number barcode is located on a label in the front of the server in the lower left corner.

- **Use an RFID reader** – The server has an RFID tag on the front bezel that can be read by mobile or stationary RFID readers within a 9 ft. range. The serial number of the RFID tag is not the same as the serial number of the server, but can be used for asset inventory.



No.	Description
1.	System serial number
2.	Beginning MAC address for the host NET ports
3.	RFID tag

Related Information

- “Accessing Administration Tools” on page 19
- “Common Administration Tools” on page 11

▼ Locate the Server (Oracle ILOM Web Interface)

Use this procedure to physically locate the server by illuminating the server's Locator LED.

1. **Log in to the Oracle ILOM web interface.**
   See “Log In To the Oracle ILOM Web Interface” on page 20.
2. **Navigate to the System Information → Summary page.**
3. **Click Turn On for the Locator Indicator in the Actions panel.**
4. **When prompted, click OK to confirm the action.**
   The server's Locator LED illuminates so that you can physically identify the server.
5. **Use one of these actions to turn off the Locator LED.**

- **At the server – Press the Locator LED button.**
- **From the Oracle ILOM web interface – On the Summary page, click Turn Off for the Locator Indicator in the Actions panel.**
- **Using an IPMItool utility.**

Related Information

- *Server Installation*, front panel components
- “Accessing Oracle ILOM” on page 19

Obtaining Server Information

A variety of tools enable you to obtain server information such as serial numbers, network addresses, date and time, installed components, and more.

Use these topics to obtain server information according to the tool you want to use:

Note - You can also obtain server information from the OS. For details, refer to the documentation for your OS.

- “Display Server Information (Oracle ILOM Web Interface)” on page 105
- “Display Server Information (BIOS)” on page 107
- “Display Server Information (OSA)” on page 107

Related Information

- “Monitoring the Server Health (Oracle ILOM Web Interface)” on page 109
- “Understanding SNMP Traps” on page 115

▼ Display Server Information (Oracle ILOM Web Interface)

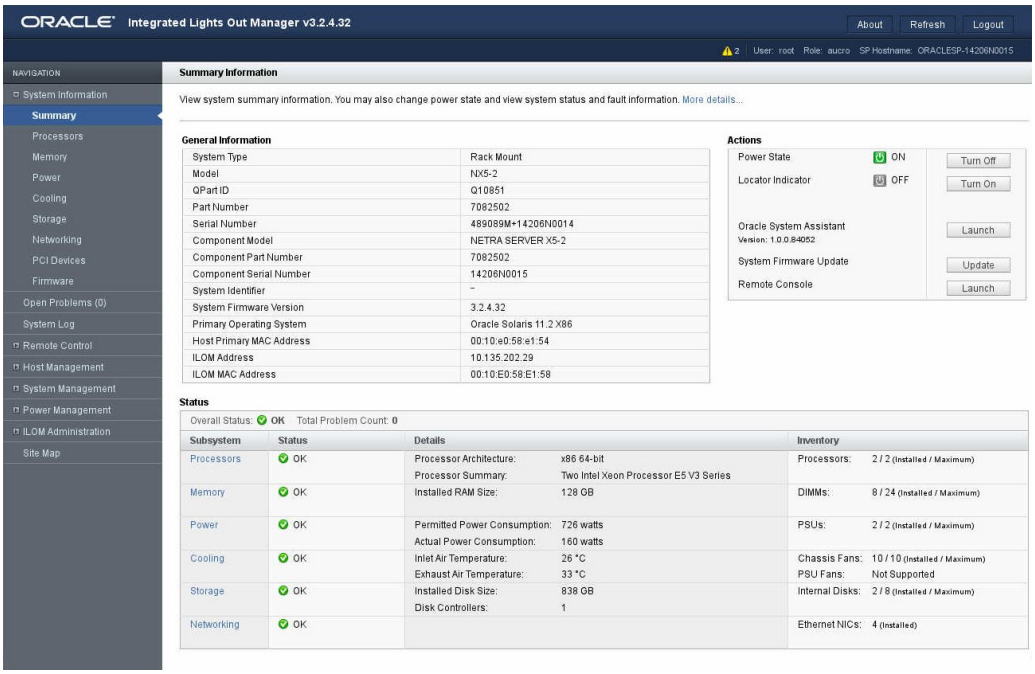
The Oracle ILOM web interface provides easy access to server information including the state, inventory, and health of components.

1. **Log in to the Oracle ILOM web interface.**

See “Log In To the Oracle ILOM Web Interface” on page 20.

2. **Navigate to the System Information → Summary page.**

   The Summary Information page is displayed.



The summary page provides this information:

- **General Information panel** – Provides general information such as the serial number, firmware version, primary OS, host MAC address, SP IP address and MAC address.
- **Actions panel** – Provides the power state of the host.
- **Status panel** – Provides the overall status of the server components.

3. **Click on specific sub-systems listed under System Information for more details.**

4. **(Optional) Log out of Oracle ILOM.**

   See “Log Out of Oracle ILOM” on page 27.

Related Information

- “Accessing Oracle ILOM” on page 19
- “Display Server Information (BIOS)” on page 107

- “Display Server Information (OSA)” on page 107

▼ Display Server Information (BIOS)

1. **Access the BIOS Setup utility.**
   See “Accessing BIOS” on page 28.
2. **Use the left and right arrows to display the Main menu.**
   See “Navigate BIOS Setup Utility Menus” on page 33.
3. **View system information.**
4. **Use the up and down arrows to select additional submenus.**
   You can view additional information about these items:
   - Product
   - CPU
   - DIMMs
   - Security setting
5. **Exit from the BIOS Setup utility.**
   See “Exit the BIOS Setup Utility” on page 34.

Related Information

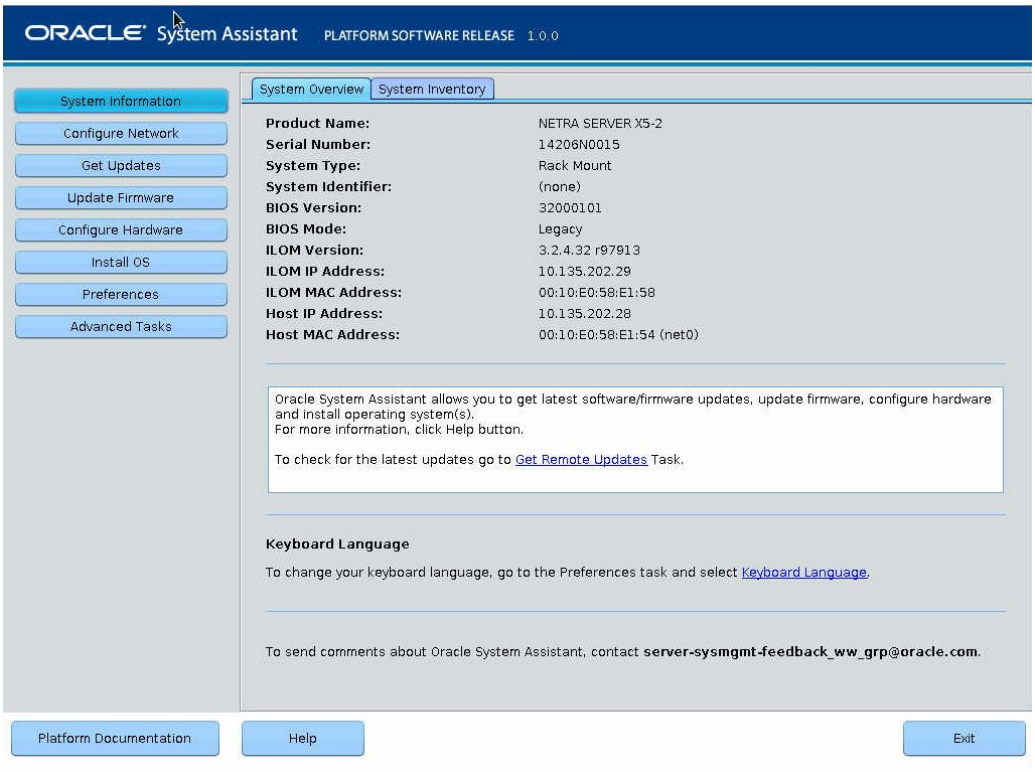
- “Accessing BIOS” on page 28
- “Display Server Information (Oracle ILOM Web Interface)” on page 105
- “Display Server Information (OSA)” on page 107

▼ Display Server Information (OSA)

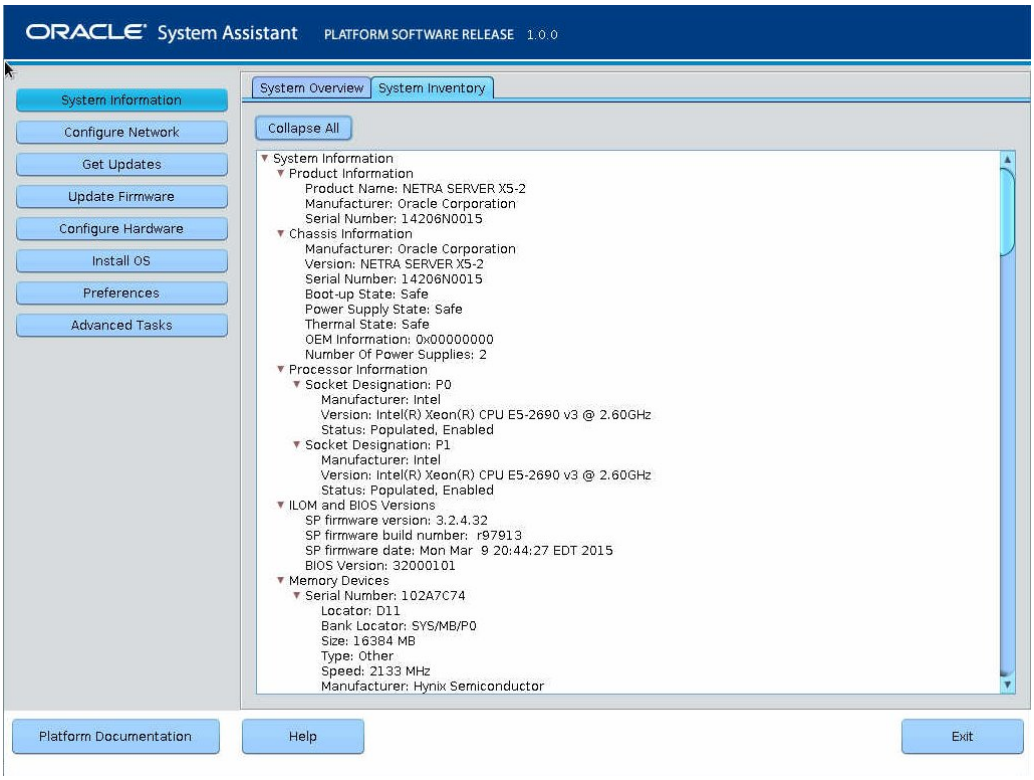
OSA provides server information and system inventory.

1. **Access OSA.**
   See “Accessing OSA” on page 35.

2. **Click System Information and then click the System Overview tab.**



3. **Click the System Inventory tab then click Expand All to see the server inventory.**



4. **(Optional) Log out of OSA.**

   See “Log Out of OSA” on page 38.

Related Information

- “Accessing OSA” on page 35
- “Display Server Information (Oracle ILOM Web Interface)” on page 105
- “Display Server Information (BIOS)” on page 107

Monitoring the Server Health (Oracle ILOM Web Interface)

Use these topics to monitor the server through the Oracle ILOM web interface:

Note - You can also monitor the server through the Oracle ILOM CLI. For details, refer to the Oracle ILOM 3.2 documentation.

- Oracle ILOM documentation library at: `http://www.oracle.com/goto/ILOM/docs`
- “Manage Event and Audit Log Entries” on page 111
- “View Power Consumption” on page 113

Related Information

- “Obtaining Server Information” on page 105
- “Understanding SNMP Traps” on page 115

Check for Problems

Use this procedure to check the server for potential problems. If problems are found, refer to *Server Service*, detecting faults for corrective actions and information on manually clearing faults.

1. **Log in to the Oracle ILOM web interface.**
   See “Log In To the Oracle ILOM Web Interface” on page 20.
2. **Navigate to the System Information → Summary page.**
3. **Check the status of the sub-systems in the Status panel.**
4. **Click Open Problems.**
   The Open Problems page is displayed.
   If open problems exist, details describing the problems appear in the Open Problems table.

   Note - Oracle ILOM automatically clears the messages in the Open Problems table upon detecting the replacement or repair of a server component.
5. **When applicable, click the link in the message to view further details about the problem and for suggested corrective actions.**
6. **(Optional) Log out of Oracle ILOM.**
   See “Log Out of Oracle ILOM” on page 27.

Related Information

- “Accessing Oracle ILOM” on page 19

- "Manage Event and Audit Log Entries" on page 111
- "View Power Consumption" on page 113
- *Server Service*, detecting and managing faults

▼ Manage Event and Audit Log Entries

Use this procedure to manage these logs:

- **Event log** – Tracks informational, warning, or error messages about a managed device such as the addition or removal of a component, or the failure of a component. The properties of the events recorded in the log can include the severity of the event, the event provider (class), and the date and time the event was logged.
- **Audit log** – Tracks all interface-related user actions such as user logins, logouts, configuration changes, and password changes. The user interfaces monitored for user actions include the Oracle ILOM web interface, the CLI, the fault management shell (captive shell), the restricted shell, and the SNMP and IPMI client interfaces.

Note - Oracle ILOM uses UTC/GMT time zones, by default, when capturing timestamps for log entries.

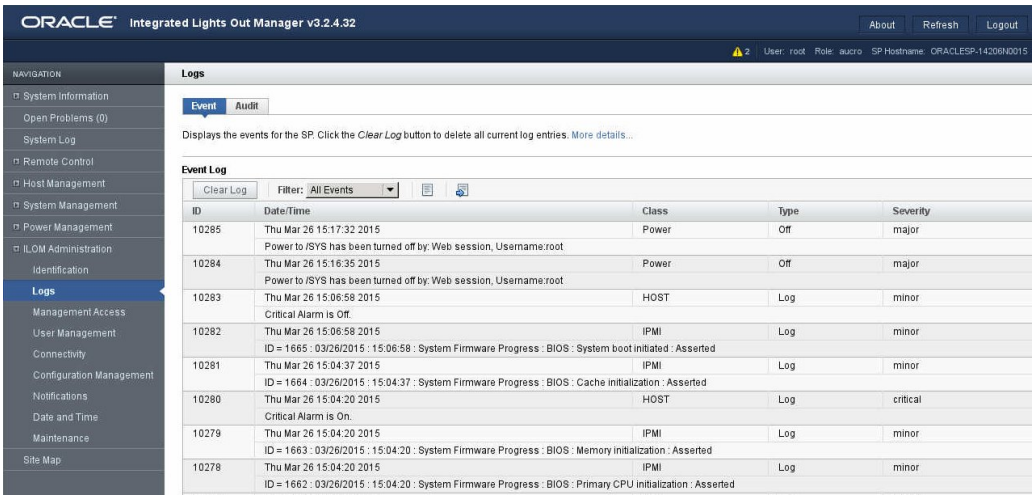
---

1. **Log in to the Oracle ILOM web interface.**

   See "Log In To the Oracle ILOM Web Interface" on page 20.

2. **Navigate to the ILOM Administration → Logs page.**

The event log is displayed.



3. **Alternatively, to view the audit logs, click the Audit tab.**

4. **If needed, filter the entry types shown, or control the display properties for rows and pages.**

   Use the controls at the top of the log table.

5. **If needed, click Clear Log to clear all log entries shown in the table.**

   A confirmation dialog appears. In the confirmation dialog, click OK to clear the entries.

6. **(Optional) Log out of Oracle ILOM.**

   See "Log Out of Oracle ILOM" on page 27.

Related Information

- "Accessing Oracle ILOM" on page 19
- "Check for Problems" on page 110
- "View Power Consumption" on page 113
- *Server Service*, detecting and managing faults

View Power Consumption

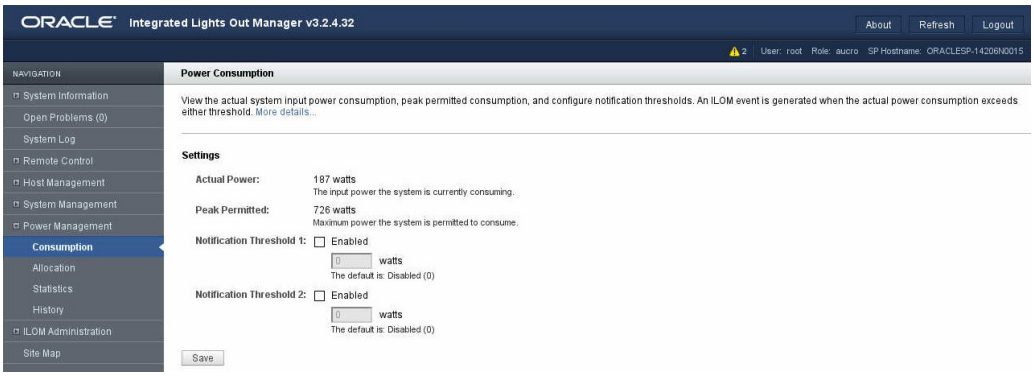
Use this procedure to view the server's current, statistical, and historical power consumption data. You can also view the power allocation requirements for the server components.

1. **Log in to the Oracle ILOM web interface.**

   See "Log In To the Oracle ILOM Web Interface" on page 20.

2. **Navigate to the Power Management → Consumption page.**

   The Power Consumption page is displayed.

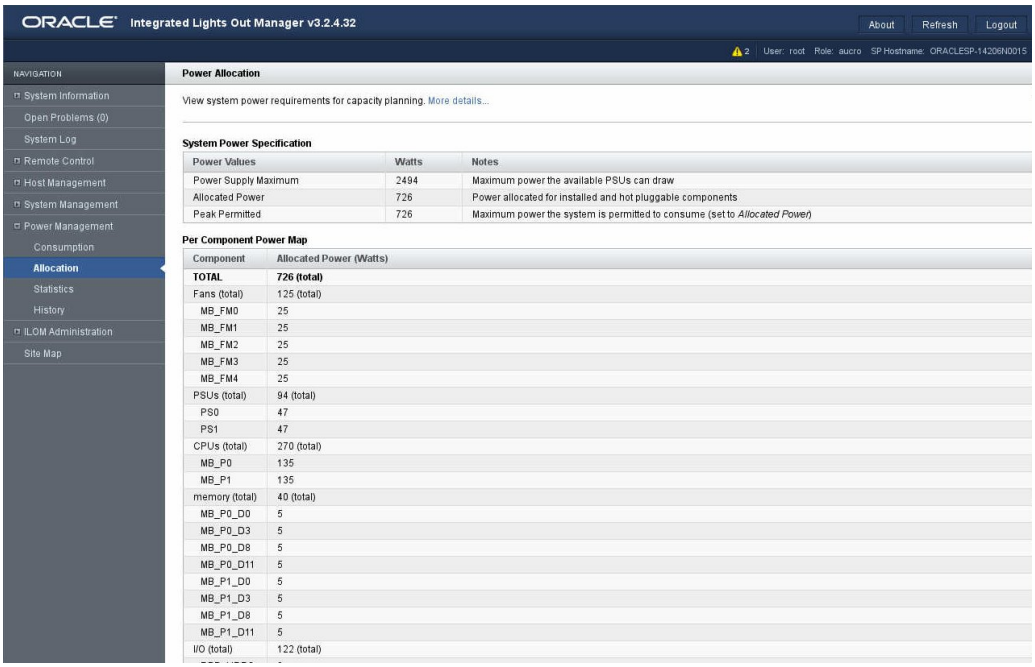


The server's power consumption wattage value is displayed for the Actual Power and Peak Permitted Power properties.

The consumption metric identifies the input power wattage that the server is currently consuming. The peak permitted power consumption metric identifies the maximum power wattage the server can consume.

3. **Navigate to the Power Management → Allocation page.**

The Power Allocation page is displayed.



The maximum power consumption permitted per component is displayed. The data is constant and does not reflect the actual power consumed. If a component exceeds the allocated power, an event is recorded.

4. **Navigate to the Power Management → Statistics page.**

   The power usage statistics are displayed in 15-, 30-, and 60-second intervals.

   The per-component power map provides power wattage allocations for each server component.

5. **Navigate to the Power Management → History page.**

   The power history for the minimum, average, and maximum power usage is displayed.

6. **(Optional) Log out of Oracle ILOM.**

   See “Log Out of Oracle ILOM” on page 27.

Related Information

- “Accessing Oracle ILOM” on page 19
- “Check for Problems” on page 110

- “Manage Event and Audit Log Entries” on page 111
- *Server Service*, detecting and managing faults

Understanding SNMP Traps

You can configure Oracle ILOM to generate SNMP traps when hardware problems occur.

For information about how to configure SNMP alert rule destinations to start receiving these traps, refer to the *Oracle Integrated Lights Out Manager (ILOM) SNMP, IPMI, CIM, WS-MAN Protocol Management Reference Guide* at:

`http://www.oracle.com/goto/ILOM/docs`

These topics list the SNMP traps that are generated for this server.

- “Generic Host Event Traps” on page 115
- “Environmental Event Traps” on page 116
- “Hard Disk Drive Event Traps” on page 117
- “Power Event Traps” on page 118
- “Fan Event Traps” on page 120
- “Memory Event Traps” on page 120
- “Entity Presence Event Traps” on page 125
- “Physical Security Event Traps” on page 125

Related Information

- Oracle ILOM documentation library at: `http://www.oracle.com/goto/ILOM/docs`
- “Obtaining Server Information” on page 105
- “Monitoring the Server Health (Oracle ILOM Web Interface)” on page 109

Generic Host Event Traps

Description – A sensor has detected an error. This generic *component* trap is generated when the SNMP agent does not recognize the component type.

SNMP Trap Message	Oracle ILOM Event Message	Severity	Sensor Name
`sunHwTrapComponentError`	Assert	Major	`/SYS/HOST_ERR`
`sunHwTrapComponentError`	Deassert	Major	`/SYS/HOST_ERR`

Related Information

- "Environmental Event Traps" on page 116
- "Hard Disk Drive Event Traps" on page 117
- "Power Event Traps" on page 118
- "Fan Event Traps" on page 120
- "Memory Event Traps" on page 120
- "Entity Presence Event Traps" on page 125
- "Physical Security Event Traps" on page 125

Environmental Event Traps

Description – A temperature sensor has reported that its value has gone above an upper fatal threshold setting or below a lower fatal threshold setting. The `sunHwTrapThresholdType` object indicates whether the threshold was an upper or lower.

SNMP Trap Message	Oracle ILOM Event Message	Severity	Sensor Name

`sunHwTrapTempFatalThresholdExceeded`	Lower fatal threshold exceeded	Critical	`/SYS/PS0/T_OUT`
			`/SYS/PS1/T_OUT`
			`/SYS/MB/T_IN_ZONE0`
			`/SYS/MB/T_OUT_ZONE0`
			`/SYS/MB/T_IN_ZONE1`
			`/SYS/MB/T_OUT_ZONE1`
			`/SYS/MB/T_IN_ZONE2`
			`/SYS/MB/T_OUT_ZONE2`

`sunHwTrapTempFatalThresholdDeasserted`	Lower fatal threshold no longer exceeded	Informational	`/SYS/PS0/T_OUT`
			`/SYS/PS1/T_OUT`
			`/SYS/MB/T_IN_ZONE0`
			`/SYS/MB/T_OUT_ZONE0`
			`/SYS/MB/T_IN_ZONE1`
			`/SYS/MB/T_OUT_ZONE1`
			`/SYS/MB/T_IN_ZONE2`
			`/SYS/MB/T_OUT_ZONE2`

`sunHwTrapTempCritThresholdExceeded`	Upper critical threshold exceeded	Critical	`/SYS/PS0/T_OUT`
			`/SYS/PS1/T_OUT`
			`/SYS/MB/T_IN_ZONE0`
			`/SYS/MB/T_OUT_ZONE0`
			`/SYS/MB/T_IN_ZONE1`
			`/SYS/MB/T_OUT_ZONE1`
			`/SYS/MB/T_IN_ZONE2`
			`/SYS/MB/T_OUT_ZONE2`

`sunHwTrapTempCritThresholdDeasserted`	Upper critical threshold no longer exceeded	Informational	`/SYS/PS0/T_OUT`
			`/SYS/PS1/T_OUT`
			`/SYS/MB/T_IN_ZONE0`
			`//SYS/MB/T_OUT_ZONE0`
			`/SYS/MB/T_IN_ZONE1`
			`/SYS/MB/T_OUT_ZONE1`
			`/SYS/MB/T_IN_ZONE2`
			`/SYS/MB/T_OUT_ZONE2`

`sunHwTrapTempFatalThresholdExceeded`	Lower fatal threshold exceeded	Critical	`/SYS/T_AMB`

SNMP Trap Message	Oracle ILOM Event Message	Severity	Sensor Name
			/SYS/MB/T_CORE_NET01 /SYS/MB/T_CORE_NET23 /SYS/MB/T_IN_PS
sunHwTrapTempFatalThresholdDeasserted	Lower fatal threshold no longer exceeded	Informational	/SYS/T_AMB /SYS/MB/T_CORE_NET01 /SYS/MB/T_CORE_NET23 /SYS/MB/T_IN_PS
sunHwTrapTempCritThresholdExceeded	Upper critical threshold exceeded	Critical	/SYS/MB/T_CORE_NET01 /SYS/MB/T_CORE_NET23 /SYS/MB/T_IN_PS
sunHwTrapTempCritThresholdDeasserted	Upper critical threshold no longer exceeded	Informational	/SYS/MB/T_CORE_NET01 /SYS/MB/T_CORE_NET23 /SYS/MB/T_IN_PS

Related Information

- “Generic Host Event Traps” on page 115
- “Hard Disk Drive Event Traps” on page 117
- “Power Event Traps” on page 118
- “Fan Event Traps” on page 120
- “Memory Event Traps” on page 120
- “Entity Presence Event Traps” on page 125
- “Physical Security Event Traps” on page 125

Hard Disk Drive Event Traps

SNMP Trap Message	Oracle ILOM Event Message	Severity and Description	Sensor Name
sunHwTrapSlotOrConnectorError	Assert	Major. A sensor associated with a slot or connector has detected an error.	/SYS/DBP/HDD[0-*x*]/STATE
sunHwTrapSlotOrConnectorOk	Deassert	Informational. A sensor associated with a slot or connector has returned to its normal state.	/SYS/DBP/HDD[0-*x*]/STATE

Related Information

- “Generic Host Event Traps” on page 115
- “Environmental Event Traps” on page 116
- “Power Event Traps” on page 118
- “Fan Event Traps” on page 120
- “Memory Event Traps” on page 120

- "Entity Presence Event Traps" on page 125
- "Physical Security Event Traps" on page 125

Power Event Traps

Description – A power supply sensor has detected an error.

SNMP Trap Message	Oracle ILOM Event Message	Severity	Sensor Name
sunHwTrapPowerSupplyError	Presence Assert	Major	/SYS/PS[0-1]/STATE
sunHwTrapPowerSupplyError	Presence Deassert	Major	/SYS/PS[0-1]/STATE
sunHwTrapPowerSupplyError	Failure Assert	Major	/SYS/PS[0-1]/STATE
sunHwTrapPowerSupplyError	Failure Deassert	Major	/SYS/PS[0-1]/STATE
sunHwTrapPowerSupplyError	Predictive Failure Assert	Major	/SYS/PS[0-1]/STATE
sunHwTrapPowerSupplyError	Predictive Failure Deassert	Major	/SYS/PS[0-1]/STATE
sunHwTrapPowerSupplyError	Input Lost Assert	Major	/SYS/PS[0-1]/STATE
sunHwTrapPowerSupplyError	Input Lost Deassert	Major	/SYS/PS[0-1]/STATE
sunHwTrapPowerSupplyError	Input Error Assert	Major	/SYS/PS[0-1]/STATE
sunHwTrapPowerSupplyError	Input Error Deassert	Major	/SYS/PS[0-1]/STATE
sunHwTrapPowerSupplyError	Input Range Error Assert	Major	/SYS/PS[0-1]/STATE
sunHwTrapPowerSupplyError	Input Range Error Deassert	Major	/SYS/PS[0-1]/STATE
sunHwTrapPowerSupplyError	Config Error Assert	Major	/SYS/PS[0-1]/STATE
sunHwTrapPowerSupplyError	Config Error Deassert	Major	/SYS/PS[0-1]/STATE
sunHwTrapSensorNonCritThresholdExceeded	Upper noncritical threshold exceeded	Minor	/SYS/VPS
sunHwTrapSensorThresholdOk	Upper noncritical threshold no longer exceeded	Informational	/SYS/VPS
sunHwTrapSensorNonCritThresholdExceeded	Upper noncritical threshold exceeded	Minor	/SYS/VPS_FANS /SYS/PS[0-1]/P_IN /SYS/PS[0-1]/P_OUT

SNMP Trap Message	Oracle ILOM Event Message	Severity	Sensor Name
sunHwTrapSensorThresholdOk	Upper noncritical threshold no longer exceeded	Informational	/SYS/VPS_FANS /SYS/PS[0-1]/P_IN /SYS/PS[0-1]/P_OUT
sunHwTrapSensorFatalThresholdExceeded	Lower fatal threshold exceeded	Critical	/SYS/PS[0-1]/P_IN /SYS/PS[0-1]/P_OUT
sunHwTrapSensorFatalThresholdDeasserted	Lower fatal threshold no longer exceeded	Informational	/SYS/PS[0-1]/P_IN /SYS/PS[0-1]/P_OUT
sunHwTrapSensorCritThresholdExceeded	Lower critical threshold exceeded	Major	/SYS/PS[0-1]/P_IN /SYS/PS[0-1]/P_OUT
sunHwTrapSensorCritThresholdDeasserted	Lower critical threshold no longer exceeded	Informational	/SYS/PS[0-1]/P_IN /SYS/PS[0-1]/P_OUT
sunHwTrapVoltageFatalThresholdExceeded	Lower fatal threshold exceeded	Critical	/SYS/PS[0-1]/V_12V /SYS/PS[0-1]/V_12V_STBY /SYS/PS[0-1]/V_IN /SYS/MB/P[0-*x*]/V_DIMM
sunHwTrapVoltageFatalThresholdDeasserted	Lower fatal threshold no longer exceeded	Informational	/SYS/PS[0-1]/V_12V /SYS/PS[0-1]/V_12V_STBY /SYS/PS[0-1]/V_IN /SYS/MB/P[0-*x*]/V_DIMM
sunHwTrapVoltageCritThresholdExceeded	Upper critical threshold exceeded	Critical	/SYS/PS[0-1]/V_12V /SYS/PS[0-1]/V_12V_STBY /SYS/PS[0-1]/V_IN /SYS/MB/P[0-*x*]/V_DIMM
sunHwTrapVoltageCritThresholdDeasserted	Upper critical threshold no longer exceeded	Informational	/SYS/PS[0-1]/V_12V /SYS/PS[0-1]/V_12V_STBY /SYS/PS[0-1]/V_IN /SYS/MB/P[0-*x*]/V_DIMM
sunHwTrapVoltageNonCritThresholdExceeded	Upper noncritical threshold exceeded	Minor	/SYS/PS[0-1]/V_12V /SYS/PS[0-1]/V_12V_STBY /SYS/PS[0-1]/V_IN /SYS/MB/P[0-*x*]/V_DIMM
sunHwTrapVoltageOk	Upper noncritical threshold no longer exceeded	Informational	/SYS/PS[0-1]/V_12V /SYS/PS[0-1]/V_12V_STBY /SYS/PS[0-1]/V_IN /SYS/MB/P[0-*x*]/V_DIMM

Related Information

- "Generic Host Event Traps" on page 115
- "Environmental Event Traps" on page 116
- "Hard Disk Drive Event Traps" on page 117
- "Fan Event Traps" on page 120
- "Memory Event Traps" on page 120
- "Entity Presence Event Traps" on page 125

- “Physical Security Event Traps” on page 125

Fan Event Traps

Description – A fan speed sensor has reported that its value has gone above an upper critical threshold setting or below a lower critical threshold setting. The `sunHwTrapThresholdType` object indicates whether the threshold was an upper or lower.

SNMP Trap Message	Oracle ILOM Event Message	Severity	Sensor Name
`sunHwTrapFanSpeedCritThresholdExceeded`	Lower critical threshold exceeded	Major	`/SYS/MB/FM[0-4]/F[0-1]/TACH`
`sunHwTrapFanSpeedCritThresholdDeasserted`	Lower critical threshold no longer exceeded	Informational	`/SYS/MB/FM[0-4]/F[0-1]/TACH`
`sunHwTrapFanSpeedFatalThresholdExceeded`	Lower fatal threshold exceeded	Critical	`/SYS/MB/FM[0-4]/F[0-1]/TACH`
`sunHwTrapFanSpeedFatalThresholdDeasserted`	Lower fatal threshold no longer exceeded	Informational	`/SYS/MB/FM[0-4]/F[0-1]/TACH`

Related Information

- “Generic Host Event Traps” on page 115
- “Environmental Event Traps” on page 116
- “Hard Disk Drive Event Traps” on page 117
- “Power Event Traps” on page 118
- “Memory Event Traps” on page 120
- “Entity Presence Event Traps” on page 125
- “Physical Security Event Traps” on page 125

Memory Event Traps

SNMP Trap Message	Oracle ILOM Event Message	Severity and Description	Sensor Name
`sunHwTrapSensorNonCritThresholdExceeded`	Upper noncritical threshold exceeded	Minor. A sensor has reported that its value has gone above an upper noncritical threshold setting or below a lower noncritical threshold setting. This generic *sensor* trap is generated when the SNMP agent does not recognize the component type. The	`/SYS/VPS_CPUS` `/SYS/VPS_MEMORY`

SNMP Trap Message	Oracle ILOM Event Message	Severity and Description	Sensor Name
		sunHwTrapThresholdType object indicates whether the threshold was an upper or lower.	
sunHwTrapSensorThresholdOk	Upper noncritical threshold no longer exceeded	Informational. A sensor has reported that its value is in the normal operating range. This generic 'sensor' trap is generated when the SNMP agent does not recognize the component type.	/SYS/VPS_CPUS /SYS/VPS_MEMORY
sunHwTrapMemoryFault	event fault.cpu.intel.quickpath.link_slow	Major. A memory component is suspected of causing a fault. This generic 'component' trap is generated when the SNMP agent does not recognize the component type.	/SYS/MB
sunHwTrapMemoryFaultCleared	event fault.cpu.intel.quickpath.link_slow	Informational. A memory component fault has been cleared. This generic 'component' trap is generated when the SNMP agent does not recognize the component type.	/SYS/MB
sunHwTrapMemoryFault	event fault.cpu.intel.quickpath.unknown-errcode	Major. A memory component is suspected of causing a fault. This generic 'component' trap is generated when the SNMP agent does not recognize the component type.	/SYS/MB
sunHwTrapMemoryFaultCleared	event fault.cpu.intel.quickpath.unknown-errcode	Informational. A memory component fault has been cleared. This generic 'component' trap is generated when the SNMP agent does not recognize the component type.	/SYS/MB
sunHwTrapMemoryFault	event fault.memory.intel.dimm.none	Major. A memory component is suspected of causing a fault. This generic 'component' trap is generated when the SNMP agent does not recognize the component type.	/SYS/MB
sunHwTrapMemoryFaultCleared	event fault.memory.intel.dimm.none	Informational. A memory component fault has been cleared. This generic 'component' trap is generated when the SNMP	/SYS/MB

SNMP Trap Message	Oracle ILOM Event Message	Severity and Description	Sensor Name
		agent does not recognize the component type.	
sunHwTrapMemoryFault	event fault.memory.intel.dimm.memtest-failed	Major. A memory component is suspected of causing a fault. This generic 'component' trap is generated when the SNMP agent does not recognize the component type.	/SYS/MB
sunHwTrapMemoryFaultCleared	event fault.memory.intel.dimm.memtest-failed	Informational. A memory component fault has been cleared. This generic 'component' trap is generated when the SNMP agent does not recognize the component type.	/SYS/MB
sunHwTrapMemoryFault	event fault.memory.intel.dimm.quadrank-3rd-slot	Major. A memory component is suspected of causing a fault. This generic 'component' trap is generated when the SNMP agent does not recognize the component type.	/SYS/MB
sunHwTrapMemoryFaultCleared	event fault.memory.intel.dimm.quadrank-3rd-slot	Informational. A memory component fault has been cleared. This generic 'component' trap is generated when the SNMP agent does not recognize the component type.	/SYS/MB
sunHwTrapMemoryFault	event fault.memory.intel.dimm.ddr3u-unsupported	Major. A memory component is suspected of causing a fault. This generic 'component' trap is generated when the SNMP agent does not recognize the component type.	/SYS/MB
sunHwTrapMemoryFaultCleared	event fault.memory.intel.dimm.ddr3u-unsupported	Informational. A memory component fault has been cleared. This generic 'component' trap is generated when the SNMP agent does not recognize the component type.	/SYS/MB
sunHwTrapMemoryFault	event fault.memory.intel.mrc.unknown-errcode	Major. A memory component is suspected of causing a fault. This generic 'component' trap is generated when the SNMP agent does not recognize the component type.	/SYS/MB

SNMP Trap Message	Oracle ILOM Event Message	Severity and Description	Sensor Name
sunHwTrapMemoryFaultCleared	event fault.memory.intel.mrc.unknown-errcode	Informational. A memory component fault has been cleared. This generic 'component' trap is generated when the SNMP agent does not recognize the component type.	/SYS/MB
sunHwTrapMemoryFault	event fault.memory.intel.dimm.udimm-unsupported	Major. A memory component is suspected of causing a fault.	/SYS/MB/P[0-*x*]/D[0-11]
sunHwTrapMemoryFaultCleared	event fault.memory.intel.dimm.udimm-unsupported	Informational. A memory component fault has been cleared.	/SYS/MB/P[0-*x*]/D[0-11]
sunHwTrapMemoryFault	event fault.memory.intel.dimm.sodimm-unsupported	Major. A memory component is suspected of causing a fault.	/SYS/MB/P[0-*x*]/D[0-11]
sunHwTrapMemoryFaultCleared	event fault.memory.intel.dimm.sodimm-unsupported	Informational. A memory component fault has been cleared.	/SYS/MB/P[0-*x*]/D[0-11]
sunHwTrapMemoryFault	event fault.memory.intel.dimm.4gb-fused	Major. A memory component is suspected of causing a fault.	/SYS/MB/P[0-*x*]/D[0-11]
sunHwTrapMemoryFaultCleared	event fault.memory.intel.dimm.4gb-fused	Informational. A memory component fault has been cleared.	/SYS/MB/P[0-*x*]/D[0-11]
sunHwTrapMemoryFault	event fault.memory.intel.dimm.8gb-fused	Major. A memory component is suspected of causing a fault.	/SYS/MB/P[0-*x*]/D[0-11]
sunHwTrapMemoryFaultCleared	event fault.memory.intel.dimm.8gb-fused	Informational. A memory component fault has been cleared.	/SYS/MB/P[0-*x*]/D[0-11]
sunHwTrapMemoryFault	event fault.memory.intel.dimm.incompatible	Major. A memory component is suspected of causing a fault.	/SYS/MB/P[0-*x*]/D[0-11]
sunHwTrapMemoryFaultCleared	event fault.memory.intel.dimm.incompatible	Informational. A memory component fault has been cleared.	/SYS/MB/P[0-*x*]/D[0-11]
sunHwTrapMemoryFault	event fault.memory.intel.dimm.incompatible-maxranks	Major. A memory component is suspected of causing a fault.	/SYS/MB/P[0-*x*]/D[0-11]
sunHwTrapMemoryFaultCleared	event fault.memory.intel.dimm.incompatible-maxranks	Informational. A memory component fault has been cleared.	/SYS/MB/P[0-*x*]/D[0-11]
sunHwTrapMemoryFault	event fault.memory.intel.dimm.incompatible-quadrank	Major. A memory component is suspected of causing a fault.	/SYS/MB/P[0-*x*]/D[0-11]

SNMP Trap Message	Oracle ILOM Event Message	Severity and Description	Sensor Name
sunHwTrapMemoryFaultCleared	event fault.memory.intel.dimm.incompatible-quadrank	Informational. A memory component fault has been cleared.	/SYS/MB/P[0-*x*]/D[0-11]
sunHwTrapMemoryFault	event fault.memory.intel.dimm.numranks-unsupported	Major. A memory component is suspected of causing a fault.	/SYS/MB/P[0-*x*]/D[0-11]
sunHwTrapMemoryFaultCleared	event fault.memory.intel.dimm.numranks-unsupported	Informational. A memory component fault has been cleared.	/SYS/MB/P[0-*x*]/D[0-11]
sunHwTrapMemoryFault	event fault.memory.intel.dimm.speed-slow	Major. A memory component is suspected of causing a fault.	/SYS/MB/P[0-*x*]/D[0-11]
sunHwTrapMemoryFaultCleared	event fault.memory.intel.dimm.speed-slow	Informational. A memory component fault has been cleared.	/SYS/MB/P[0-*x*]/D[0-11]
sunHwTrapMemoryFault	event fault.memory.intel.dimm.disable-quadrank	Major. A memory component is suspected of causing a fault.	/SYS/MB/P[0-*x*]/D[0-11]
sunHwTrapMemoryFaultCleared	event fault.memory.intel.dimm.disable-quadrank	Informational. A memory component fault has been cleared.	/SYS/MB/P[0-*x*]/D[0-11]
sunHwTrapMemoryFault	event fault.memory.intel.dimm.population-invalid	Major. A memory component is suspected of causing a fault.	/SYS/MB/P[0-*x*]/D[0-11]
sunHwTrapMemoryFaultCleared	event fault.memory.intel.dimm.population-invalid	Informational. A memory component fault has been cleared.	/SYS/MB/P[0-*x*]/D[0-11]
sunHwTrapMemoryFault	event fault.memory.intel.dimm.out-of-order	Major. A memory component is suspected of causing a fault.	/SYS/MB/P[0-*x*]/D[0-11]
sunHwTrapMemoryFaultCleared	event fault.memory.intel.dimm.out-of-order	Informational. A memory component fault has been cleared.	/SYS/MB/P[0-*x*]/D[0-11]
sunHwTrapMemoryFault	event fault.memory.intel.dimm.category-unknown	Major. A memory component is suspected of causing a fault.	/SYS/MB/P[0-*x*]/D[0-11]
sunHwTrapMemoryFaultCleared	event fault.memory.intel.dimm.category-unknown	Informational. A memory component fault has been cleared.	/SYS/MB/P[0-*x*]/D[0-11]

Related Information

- “Generic Host Event Traps” on page 115
- “Environmental Event Traps” on page 116
- “Hard Disk Drive Event Traps” on page 117

- "Power Event Traps" on page 118
- "Fan Event Traps" on page 120
- "Entity Presence Event Traps" on page 125
- "Physical Security Event Traps" on page 125

Entity Presence Event Traps

Description – A sensor has detected an error. This generic *component* trap is generated when the SNMP agent does not recognize the component type.

SNMP Trap Message	Oracle ILOM Event Message	Severity	Sensor Name
sunHwTrapProcessorError	ENTITY_PRESENT ASSERT	Major	/SYS/MB/P[0-*x*]/PRSNT
sunHwTrapProcessorOk	ENTITY_PRESENT DEASSERT	Major	/SYS/MB/P[0-*x*]/PRSNT
sunHwTrapProcessorError	ENTITY_DISABLED ASSERT	Major	/SYS/MB/P[0-*x*]/PRSNT
sunHwTrapProcessorOK	ENTITY_DISABLED DEASSERT	Major	/SYS/MB/P[0-*x*]/PRSNT

Related Information

- "Generic Host Event Traps" on page 115
- "Environmental Event Traps" on page 116
- "Hard Disk Drive Event Traps" on page 117
- "Power Event Traps" on page 118
- "Fan Event Traps" on page 120
- "Memory Event Traps" on page 120
- "Physical Security Event Traps" on page 125

Physical Security Event Traps

Description – An intrusion sensor has detected that someone might have physically tampered with the system.

SNMP Trap Message	Oracle ILOM Event Message	Severity	Sensor Name
sunHwTrapSecurityIntrusion	Assert	Major	/SYS/INTSW
sunHwTrapSecurityIntrusion	Deassert	Major	/SYS/INTSW

Related Information

- “Generic Host Event Traps” on page 115
- “Environmental Event Traps” on page 116
- “Hard Disk Drive Event Traps” on page 117
- “Power Event Traps” on page 118
- “Fan Event Traps” on page 120
- “Memory Event Traps” on page 120
- “Entity Presence Event Traps” on page 125

Updating the Firmware and Software

Over time, Oracle updates the firmware and OSA software.

Updates are available as a *software release*. Software releases contain all the firmware, hardware drivers, and utilities for the server. All of these items are tested together. A `README` document is provided with each software release. The `README` explains what has changed and what has not changed from the prior software release.

Use these topics to obtain and update the server's firmware and software:

Description	Links
Use OSA to obtain and update the server firmware and software.	“Obtain and Update Firmware (OSA)” on page 129
Restore OSA to a server with corrupted OSA.	“Restore OSA” on page 131
Mounting and accessing OSA USB flash drive.	“Mounting the OSA USB Flash Drive” on page 133 “Access the Firmware and Software on the OSA USB Flash Drive” on page 136
Obtain updates by downloading zip files from My Oracle Support.	“Download Software Releases (My Oracle Support)” on page 137 “Available Software Release Packages” on page 138
Obtain updates on physical media.	“Requesting Updates on Physical Media” on page 139 “Available Software Release Packages” on page 138

Related Information

- “Understanding Administration Resources” on page 11
- “Accessing Administration Tools” on page 19
- “Controlling the Server” on page 43
- “Configuring Power-On and Boot Options” on page 49
- “Configuring Oracle ILOM” on page 59
- “Configuring BIOS” on page 87
- “Enabling or Disabling OSA” on page 99

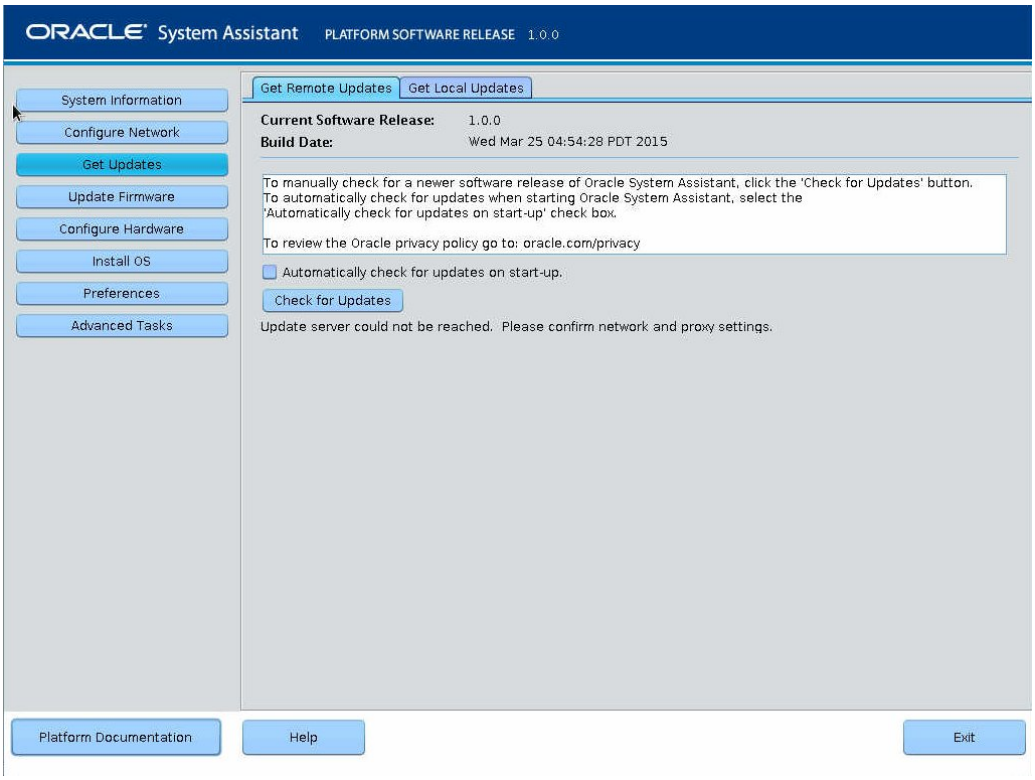
- “Monitoring the Server” on page 103

Update to a New OSA Release

You use OSA to download and update OSA on your server.

1. **Access OSA.**
   See “Accessing OSA” on page 35.

2. **Click Get Updates.**



3. **Click Check for Updates.**
   After running the Check Updates process, a new list and button appear in the pane.

4. **From the Available Updates list, choose the update, then click Download and Apply Updates to start the update process.**

The update is downloaded and applied.

5. **Click Exit.**

Related Information

- “OSA Overview” on page 15
- “Obtain and Update Firmware (OSA)” on page 129
- “Restore OSA” on page 131
- “Obtaining Updated Software” on page 137
- “Requesting Updates on Physical Media” on page 139

▼ Obtain and Update Firmware (OSA)

You can use OSA to update the server firmware, hardware drivers, and utilities.

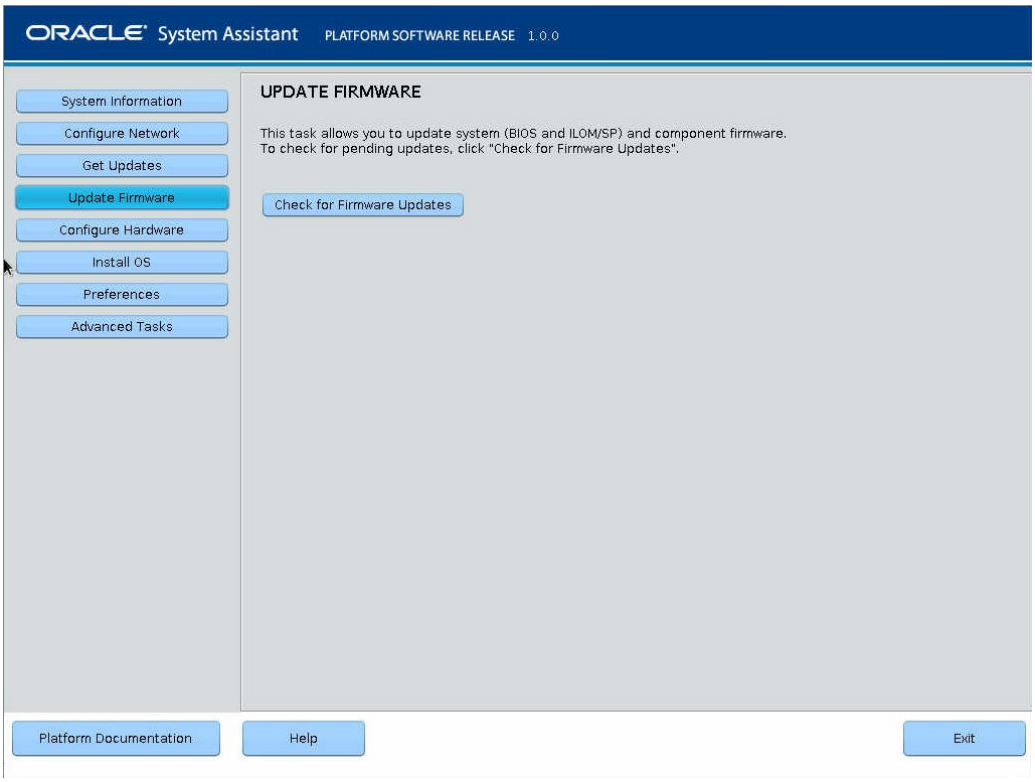
This procedure checks for and obtains updates, enables you to select which updates you want installed, and then installs them.

1. **Access OSA.**

   See “Accessing OSA” on page 35.

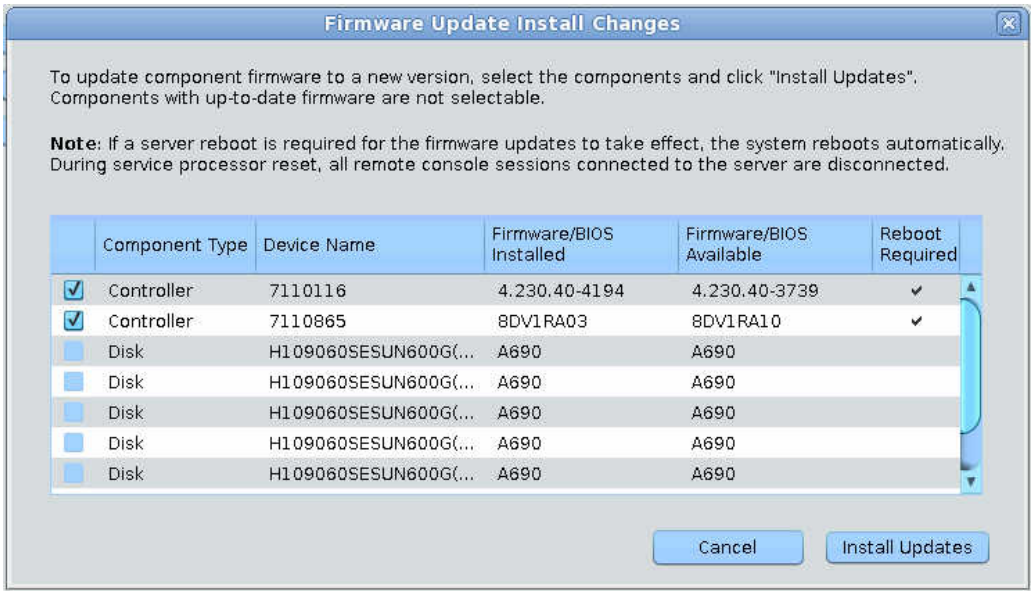
2. **Click Update Firmware.**

The Update Firmware page is displayed.



3. **Click Check for Firmware Updates to determine whether any hardware components can be updated using OSA.**

A window appears displaying the firmware updates that were found for the server.



4. **Select the checkbox for the firmware updates you want to install.**

5. **Click Install Updates to install the firmware updates.**

   If a reboot is required for the firmware updates to take effect, the server automatically reboots.

6. **Click Exit.**

Related Information

- “OSA Overview” on page 15
- “Update to a New OSA Release” on page 128
- “Restore OSA” on page 131
- “Obtaining Updated Software” on page 137
- “Requesting Updates on Physical Media” on page 139

▼ Restore OSA

If OSA has been erased or corrupted, you can download the image file that is available from the My Oracle Support web site and restore it to the USB device.

1. **Download the appropriate image from the My Oracle Support web site.**

   Download the image that is specific to your server from this location:

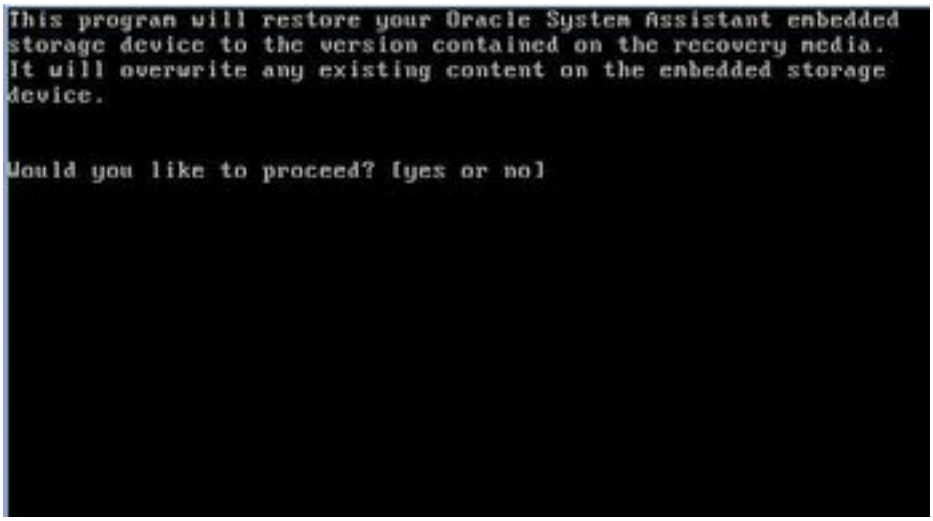
   `https://support.oracle.com`

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

   - Burn the ISO image file to a physical CD/DVD.
   - Make the ISO image file available on the server as a boot device.

3. **Boot from the CD/ DVD or the ISO image file.**

   This action starts the recovery program. After the program verifies that the OSAUSB device is valid, a recovery continuation prompt appears.



4. **Continue the recovery process by typing `yes`.**

   The recovery process begins. When the recovery is finished, the server reboots and starts OSA.

5. **Unmount the ISO image or remove the CD/DVD from the drive.**

Related Information

- “OSA Overview” on page 15
- “Update to a New OSA Release” on page 128
- “Obtain and Update Firmware (OSA)” on page 129
- “Obtaining Updated Software” on page 137
- “Requesting Updates on Physical Media” on page 139

Mounting the OSA USB Flash Drive

Before you can access the OSA USB flash drive through Oracle VM 3.3, Oracle Solaris 11.2, or Linux operating systems, you must first mount the USB flash drive.

Choose one of the following procedures to mount the OSA USB flash drive:

- “Mount the OSA USB Flash Drive on Oracle VM 3.3” on page 133
- “Mount the OSA USB Flash Drive on a Linux OS” on page 134
- “Mount the OSA USB Flash Drive on an Oracle Solaris 11.2 OS” on page 135

Note - Currently you cannot directly mount the OSA USB flash drive if the system is using the VMware ESXi 5.0 virtual machine software. Go to My Oracle Support to retrieve the required drivers for the VMware ESXi software.

Related Information

- “Access the Firmware and Software on the OSA USB Flash Drive” on page 136
- “Restore OSA” on page 131

▼ Mount the OSA USB Flash Drive on Oracle VM 3.3

1. **Connect to your Oracle VM 3.3 server as the root user.**

2. **To determine the device mapping of the OSA USB flash drive, type the `lsscsi` command.**

   An example of how this command displays the storage devices on the server is shown below.

```
# lsscsi
[0:0:0:0]  disk    SEAGATE ST360057SSUN600G 0805 /dev/sda
[0:0:1:0]  disk    SEAGATE ST32000SSSUN2.0T 0313 /dev/sdb
[0:0:2:0]  disk    SEAGATE ST32000SSSUN2.0T 0313 /dev/sdc
[0:0:3:0]  disk    ATA INTEL HDDSA2BZ30     0362 /dev/sdd
[0:0:4:0]  enclosu ORACLE BLADE14           0903 -
[7:0:0:0]  disk    SUN StorEdge 3511        421F /dev/sde
[7:0:0:1]  disk    SUN StorEdge 3511        421F /dev/sdf
[7:0:0:2]  disk    SUN StorEdge 3511        421F /dev/sdg
[7:0:0:3]  disk    SUN StorEdge 3511        421F /dev/sdh
[9:0:0:0]  disk    SUN CSM200_R             0660 /dev/sdi
[9:0:0:1]  disk    SUN CSM200_R             0660 /dev/sdj
[9:0:0:2]  disk    SUN CSM200_R             0660 /dev/sdk
[9:0:0:3]  disk    SUN CSM200_R             0660 /dev/sdl
```

```
[9:0:0:4]  disk    SUN CSM200_R             0660 /dev/sdm
[9:0:0:5]  disk    SUN CSM200_R             0660 /dev/sdn
[11:0:0:0] disk     ORACLE SSM              PMAP /dev/sdo
```

The OSA USB flash drive is the disk labelled ORACLE SSM and in this example is mapped to `/dev/sdo`.

3. **To determine the name of the partition on the OSA USB device, type the `fdisk -l /dev/sdo` command.**

   An example of the output produced by this command is shown below.

```
# fdisk -l /dev/sdo
Disk /dev/sdo: 3880 MB, 3880452096 bytes
4 heads, 32 sectors/track, 59211 cylinders
Units = cylinders of 128 * 512 = 65536 bytes
Device Boot Start End   Blocks  Id System
/dev/sdo1 * 17    57344 3668992 ef EFI (FAT-12/16/32)
```

   The name of the partition is in the `Device` column. For this example, it is `/dev/sdo1`.

4. **Create a mount point to use when mounting the OSA USB flash drive.**

   For example:

```
# mkdir /mnt/OSA
```

5. **To mount the OSA USB device, use the partition name determined in Step 3 and an existing mount point or the mount point that you created in Step 4.**

   Here is an example of a mount command:

```
# mount -t vfat -o codepage=850 /dev/sdo1 /mnt/OSA
# ls /mnt/OSA
boot          Firmware    LiveOS       OracleVM    syslinux.cfg
Documentation ldlinux.sys manifest.xml readme.html Versions.txt
EFI           Linux       Oracle       Solaris     Windows
#
```

   The OSA USB flash drive is now mounted at the location specified.

▼ Mount the OSA USB Flash Drive on a Linux OS

If the server is running a Linux OS, you must mount the OSA USB flash drive before you use the filesystem to display or access its contents.

This procedure shows how to mount the OSA USB flash drive on a Linux OS.

- **To mount the OSA USB flash drive, type these commands.**

```
#>mkdir /mnt/OSA
#>mount LABEL=ORACLE_SSM /mnt/OSA
#>cd /mnt/OSA
#>ls -l
total 916
drwxr-xr-x 2  root root 4096   Nov 21 07:42 boot
drwxr-xr-x 3  root root 4096   Nov 21 07:42 Documentation
drwxr-xr-x 3  root root 4096   Oct 26 21:05 EFI
drwxr-xr-x 16 root root 4096   Nov 21 07:42 Firmware
-r-xr-xr-x 1  root root 15218  Oct 26 19:10 ldlinux.sys
drwxr-xr-x 5  root root 4096   Nov 21 07:41 Linux
drwxr-xr-x 2  root root 4096   Oct 26 21:05 LiveOS
-rwxr-xr-x 1  root root 787672 Nov 21 08:17 manifest.xml
drwxr-xr-x 2  root root 4096   Nov 21 08:00 Oracle
-rwxr-xr-x 1  root root 78879  Nov 21 07:42 readme.html
drwxr-xr-x 4  root root 4096   Nov 21 07:41 Solaris
-rwxr-xr-x 1  root root 263    Oct 26 21:05 syslinux.cfg
-rwxr-xr-x 1  root root 3755   Nov 21 07:42 Versions.txt
drwxr-xr-x 3  root root 4096   Nov 21 07:42 VMware
drwxr-xr-x 4  root root 4096   Nov 21 07:42 Windows
#>
```

The OSA USB flash drive is now mounted at the location specified.

▼ Mount the OSA USB Flash Drive on an Oracle Solaris 11.2 OS

If the server is running the Oracle Solaris 11.2, you must mount the OSA USB flash drive before you use the filesystem to display or access its contents.

1. **Turn off the volfs service.**

```
# svcadm disable volfs
```

2. **Identify the USB flash drive.**

```
# rmformat -l
```

The system displays a list of devices:

```
Looking for devices...
1. Logical Node: /dev/rdsk/c1t0d0p0
   Physical Node:
/pci@0,0/pci108e,484e@1a/hub@1/storage@2/disk@0,0
   Connected Device: ORACLE    SSM    PMAP
   Device Type: Removable
   #
```

3. **Create a mount point to use when mounting the OSA USB flash drive.**

   For example:

   ```
   # mkdir /mnt/OSA
   ```

4. **Manually mount the USB flash drive, read-only.**

   ```
   # mount -F pcfs -o ro /dev/dsk/c1t0d0p1 /mnt/OSA
   ```

   The OSA USB flash drive is now mounted at the mount location specified.

Access the Firmware and Software on the OSA USB Flash Drive

The OSA USB flash drive contains firmware and software for your server. The USB flash drive is accessible through the OS or virtual machine software filesystem. Updated firmware and software are downloaded with every software release update using the Get Updates task within OSA.

This procedure describes how to access and view the firmware and software that resides on the OSA USB flash drive.

1. **Ensure that the server is powered on and the OS is running.**

2. **Mount the OSA USB flash drive.**

   For OS specific mounting instructions, see:

   - Oracle VM: “Mount the OSA USB Flash Drive on Oracle VM 3.3” on page 133
   - Linux OS: “Mount the OSA USB Flash Drive on a Linux OS” on page 134
   - Oracle Solaris 11.2: “Mount the OSA USB Flash Drive on an Oracle Solaris 11.2 OS” on page 135

3. **Use a filesystem browser to navigate to the internal OSA USB flash drive.**

   The label for the USB flash drive is: ORACLE SSM on Oracle VM OS, and ORACLE_SSM on the Oracle Solaris 11.2 OS and Linux OS.

   Note - If the OSA USB flash drive is mounted but is still is not visible, OSA might be disabled. To enable OSA, see “Enable OSA” on page 100.

4. **To view the contents of the Oracle_SSM drive, double-click on the drive.**

   The OSA USB flash drive directory is displayed and lists the contents of the drive.

Obtaining Updated Software

Use these topics to obtain the latest updated software releases from My Oracle Support:

- "Download Software Releases (My Oracle Support)" on page 137
- "Available Software Release Packages" on page 138

Related Information

- "Requesting Updates on Physical Media" on page 139

▼ Download Software Releases (My Oracle Support)

1. **Go to the My Oracle Support website.**

   `https://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 window appears.

4. **In the Search window, click Product or Family (Advanced Search).**

   The window appears with search fields.

5. **In the Product field, select the product from the drop-down menu.**

   Alternatively, type a full or partial product name (for example, Netra Server X5-2) until a match appears.

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).

   See "Available Software Release Packages" on page 138 for a description of the available downloads.

8. **Click the check box next to each patch you want.**

   A dialog box that contains several action options is displayed.

9. **To download the update, click Download in the pop-up panel.**

   The download begins automatically.

10. **Unzip the downloaded files and read the `README` files for update instructions.**

Related Information

- "Available Software Release Packages" on page 138

Available Software Release Packages

Downloads on My Oracle Support are grouped by product family, then product, then version. The version contains one or more downloads (patches).

Each download is a zip file that contains a `README` file and a set of subdirectories containing firmware or software files. The `README` file contains details on the components that have changed since the prior software release and the bugs that have been fixed.

When to Download This Package	Package Name	Description
To update a combination of system firmware and OS-specific software.	Netra Server X5-2 SW 1.0.0 - ALL PACKS (Patch)	Firmware Pack, all OS Packs, and all documents. This pack does not include Oracle VTS or the OSA image.
To obtain the latest firmware.	Netra Server X5-2 SW 1.0.0 - FIRMWARE PACK (Patch)	All the system firmware, including Oracle ILOM, BIOS, and option card firmware.
To obtain the Oracle VTS diagnostics image.	Netra Server X5-2 SW 1.0.0 - DIAGNOSTICS (Patch)	Oracle VTS diagnostics image.
To update OS-specific drivers, tools, or utilities.	Netra Server X5-2 SW 1.0.0 - OS PACK *OS_Version* (Patch) Where the *OS_Versions* are: ■ OL_6U6 ■ OVM_3U3P2 ■ RHEL_6U5 ■ SLES_11SP3 ■ SOLARIS_11U2 ■ VMWARE_ESXI_55 ■ WINDOWS_2012 ■ WINDOWS_2012_R2	An OS Pack is available for each supported OS version. Each OS Pack includes a package of all tools, drivers, and utilities for that version of the OS. Software includes Oracle HMP and LSI MegaRAID software. **Note -** The Windows OS Packs also include Intel Network Teaming and Install Pack.
To manually recover or update OSA.	Netra Server X5-2 SW 1.0.0 - ORACLE SYSTEM ASSISTANT UPDATER (Patch)	OSA recovery and ISO update image.

Related Information

- “Download Software Releases (My Oracle Support)” on page 137

Requesting Updates on Physical Media

You must have a warranty or support contract for your server in order to make a physical media request.

Use one of these method to request physical media:

- “Request Physical Media (Online)” on page 139
- “Request Physical Media (By Phone)” on page 140

Related Information

- “Obtaining Updated Software” on page 137

▼ Request Physical Media (Online)

1. **Gather this information.**
   - **Product name, software release version, and patches required.**
     See “Available Software Release Packages” on page 138.
   - **Your shipping information.**
2. **Go to My Oracle Support at:**
   `https://support.oracle.com`
3. **Sign in.**
4. **Click on the Contact Us link in the upper right corner of the window.**
5. **In the Request Description section, fill in this information.**
   a. **In the Request Category drop-down menu, select the following:**
      Physical Media Request (Legacy Oracle Products, Primavera, BEA, Sun Products)
   b. **In the Request Summary field, type.**
      `PMR for latest software release for Netra Server X5-2.`

6. **In the Request Details section, answer the questions in this table.**

Question	Your Answer
Is this a physical software media shipment request?	Yes
Which product line does the media request involve?	Sun Products
Are you requesting a required password for a patch download?	No
Are you requesting a patch on CD/DVD?	Yes
If requesting a patch on CD/DVD, please provide the patch number and OS/platform?	Enter the patch number for each download that you want from the software release.
List the product name and version requested for the physical media shipment?	*Product Name:* Netra Server X5-2 *Version:* Latest software release number
What is the OS/platform for the requested media?	If you are requesting OS-specific downloads, specify the OS here. If you are requesting system firmware only, enter Generic.
Are any languages required for this shipment?	No

7. **Fill in the Ship-To contact, phone number, email address, company name, and shipping address information.**
8. **Click Next.**
9. **Under Relevant Files, type.**

   `Knowledge Article 1361144.1`.
10. **Click Submit.**

Related Information

- “Request Physical Media (By Phone)” on page 140

▼ Request Physical Media (By Phone)

1. **Gather this information.**
   - **Product name, software release version, and patches required.**

     See “Available Software Release Packages” on page 138.
   - **Your shipping information.**
2. **Call Oracle support, using the appropriate number from the Oracle Global Customer Support Contacts Directory.**

   `http://www.oracle.com/us/support/contact-068555.html`

3. **Tell Oracle support that you want to make a physical media request for the Netra Server X5-2.**

   - **If you are able to access the specific software release and patch number information from My Oracle Support, provide this information to the support representative.**

   - **If you are unable to access the software release information, request the latest software release for Oracle's Netra Server X5-2.**

Related Information

- “Request Physical Media (Online)” on page 139

Glossary

A

ACPI Advanced Configuration and Power Interface.

ANSI SIS American National Standards Institute Status Indicator Standard.

ASF Alert standard format.

ASR Automatic system recovery.

AWG American wire gauge.

B

BAT basic assurance test.

BIOS Basic Input Output System.

BMC Baseboard management controller.

BOB Memory buffer on board.

C

chassis Refers to the server enclosure. For server modules, refers to the modular system enclosure.

CMA Cable management arm.

D

DHCP Dynamic Host Configuration Protocol.

DTE Data terminal equipment.

E

ECC Error-correcting code.

EIA Electronics Industries Alliance.

ESD Electrostatic discharge.

F

FRU Field-replaceable unit.

G

GPT GUID partition table.

GRUB GRand Unified Bootloader. A GNU implementation that supports booting multiple OSs on a computer.

H

HBA Host bus adapter.

HMP Hardware Management Pack.

host The part of the server with the CPU and other hardware that runs the Oracle Solaris OS and other applications. The term *host* is used to distinguish the primary computer from the SP. *See* SP.

I

ICMP Internet Control Message Protocol.

ID PROM Chip that contains system information for the server or server module.

IDE Integrated Development Environment.

IP Internet Protocol.

K

KVM Keyboard, video, mouse. Refers to using a switch to enable sharing of one keyboard, one display, and one mouse with more than one computer.

L

LRDIMM Load Reduced DIMM.

LwA Sound power level.

M

MAC Machine access code.

MAC address Media access controller address.

MBR Master boot record.

MSGID Message identifier.

N

NEBS Network Equipment-Building.

NET MGT Network management port. An Ethernet port on the server SP.

NIC Network interface card or controller.

NMI Nonmaskable interrupt.

NVMe A specification for accessing solid-state drives (SSDs) attached through the PCI Express (PCIe) bus. "NVM" is an acronym for non-volatile memory, which is used in SSDs.

O

OBP OpenBoot PROM.

Oracle ILOM Oracle Integrated Lights Out Manager. Oracle ILOM firmware is preinstalled on a variety of Oracle systems. Oracle ILOM enables you to remotely manage your Oracle servers regardless of the state of the host system.

Oracle Solaris OS Oracle Solaris operating system.

OS Operating system.

OSA Oracle System Assistant.

P

PCI Peripheral component interconnect.

PDB Power distribution board.

PMR Physical media request.

POST Power-on self-test.

PROM Programmable read-only memory.

PSH Predictive self healing.

PXE Preboot eXecution environment.

Q

QSFP Quad small form-factor pluggable.

R

RDIMM Registered DIMM.

REM RAID expansion module. Sometimes referred to as an HBA *See* HBA. Supports the creation of RAID volumes on drives.

RHEL Red Hat Enterprise Linux.

S

SAN Storage area network.

SAS Serial attached SCSI.

SATA Serial advanced technology attachment.

SCC System configuration chip.

SER MGT Serial management port. A serial port on the server SP, the server module SP, and the CMM.

SLES SUSE Linux Enterprise Server.

SMART Self-Monitoring, Analysis, and Reporting Technology.

SNMP Simple Network Management Protocol.

SP Service processor. In the server or server module, the SP is a card with its own OS. The SP processes Oracle ILOM commands providing lights out management control of the host. *See* host.

SRU Support Repository Update. Used to updated the Oracle Solaris OS.

SSD Solid-state drive.

SSH Secure shell.

T

TIA Telecommunications Industry Association (Netra products only).

Tma Maximum ambient temperature.

TPM Trusted Platform Module.

U

U.S. NEC United States National Electrical Code.

UCP Universal connector port.

UEFI Unified Extensible Firmware Interface.

UI User interface.

UL Underwriters Laboratory Inc.

UTC Coordinated Universal Time.

UUID Universal unique identifier.

V

VM Virtual machine.

W

WDS Windows Deployment Services.

WIM Windows Imaging Format.

WWN World wide name. A unique number that identifies a SAS target.

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