Sun Blade X3-2B (formerly Sun Blade X6270 M3) Administration Guide

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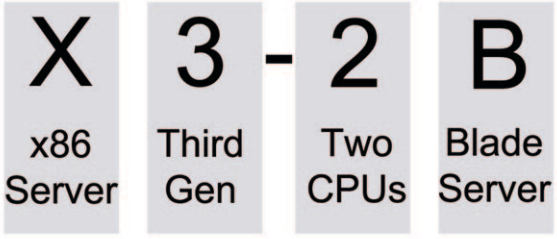
Using This Documentation

This section describes how to get the latest firmware and software for the system, documentation and feedback, and a document change history.

- "Sun Blade X3–2B Model Name Change" on page 7
- "Getting the Latest Firmware and Software" on page 8
- "Documentation and Feedback" on page 8
- "About This Documentation" on page 8
- "Support and Training" on page 9
- "Contributors" on page 9
- "Change History" on page 9

Sun Blade X3–2B Model Name Change

The Sun Blade X3-2B was previously named the Sun Blade X6270 M3 Server Module. This name might still appear in the software. The name change does not indicate any change in system features or functionality.



The new name identifies the following:

- X identifies an x86 product.
- The first number, 3, identifies the generation of the server.
- The second number, 2, identifies the number of processors.
- The alpha character, B, identifies the product as a blade server.

Getting the Latest Firmware and Software

Firmware, drivers, and other hardware-related software for each Oracle x86 server, server module (blade), and blade chassis are updated periodically.

You can obtain the latest version in one of three ways:

- Oracle System Assistant – This is a new factory-installed option for Sun Oracle x86 servers. It has all the tools and drivers you need and resides on a USB drive installed in most servers.
- My Oracle Support – `http://support.oracle.com`
- Physical media request

For more information, see "Getting Server Firmware and Software" on page 229.

Documentation and Feedback

Documentation	Link
All Oracle products	`http://www.oracle.com/documentation`
Sun Blade X3-2B	`http://www.oracle.com/pls/topic/lookup?ctx=SunBladeX3-2B`
Oracle ILOM 3.1	`http://www.oracle.com/pls/topic/lookup?ctx=ilom31`
Oracle Hardware Management Pack	`http://www.oracle.com/pls/topic/lookup?ctx=ohmp`

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

About This Documentation

This documentation set is available in both PDF and HTML. The information is presented in topic-based format (similar to online help) and therefore does not include chapters, appendixes, or section numbering.

You can generate a PDF that includes all information about a particular topic subject (such as hardware installation or product notes) by clicking the PDF button in the upper left corner of the HTML page.

Some of the documents are translated into French, Spanish, Simplified Chinese, and Japanese.

The most up-to-date versions of the documents are available in English.

Support and Training

These web sites provide additional resources:

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

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Change History

The following lists the release history of this documentation set:

- May/August 2013, Updated the supported OS list in *Product Notes* and revised *Administration Guide*, *Installation Guide*, *Security Guide*.
- March 2013, Revised *Installation Guide* and *Product Notes*.
- January 2013. Revised *Product Notes*, *Administration Guide*, *Installation Guide*
- November 2012. Updated for SW 1.2 and document refresh. Revised *Product Notes*, *Service Manual*, *Installation Guide*, and *Administration Guide*.
- August 2012. Revised *Product Notes* only.
- July 2012. Revised *Product Notes* only.
- July 2012. Server model name changed. All documents revised.
- June 2012. Updated for SW 1.1. Revised *Product Notes* and *Service Manual*.
- May 2012. Updated for SW 1.0.1. Documentation library re-released with editorial revisions.
- April 2012. Initial publication.

About the User Administration Guide

Note – Important: The Sun Blade X3-2B was formerly named the Sun Blade X6270 M3 server module. This name might still appear in the software. The name change does not indicate any change in system features or functionality.

The following table describes the organization of the Sun Blade X3-2B Administration Guide.

Description	Links
Information to help you plan your system management strategy.	"Planning the System Management Environment" on page 15
Procedures for accessing the various system management tools.	"Accessing System Management Tools" on page 27
Information and procedures for setting up the server using Oracle System Assistant.	"Setting Up Oracle System Assistant and Updating the Server" on page 41
Procedures for using Oracle System Assistant to configure the server.	"Setting Up Oracle System Assistant and Updating the Server" on page 41
Information and procedures about the administrative tools in Oracle System Assistant.	"Oracle System Assistant Administrative Tasks" on page 67
Information and procedures for installing an operating system on the server.	"Setting Up Software and Firmware " on page 95
Information and procedures related to Oracle ILOM power-on and management policies.	"Managing Server Policies Using Oracle ILOM" on page 101
Configure RAID for the server.	"Configuring RAID" on page 111
How to use the BIOS Setup Utility to configure the server BIOS.	"Setting Up the Server With BIOS Setup Utility" on page 115
Information and configuration procedures for legacy and UEFI BIOS.	"Selecting Legacy and UEFI BIOS" on page 123
Procedures for performing common BIOS Setup Utility tasks.	"Common BIOS Setup Utility Tasks" on page 129

Description	Links
Screen-by-screen reference information for the BIOS Setup Utility.	"BIOS Setup Utility Screen Reference " on page 149
Screen-by-screen reference information for the LSI MegaRAID Configuration Utility..	"BIOS LSI MegaRAID Configuration Utility Screen Reference" on page 189
Information about server sensors, field replaceable units (FRU), and IPMI and SMNP traps.	"Identifying Hardware Components and SNMP Messages" on page 213
Information about using My Oracle Support (MOS) to get server firmware and software.	"Getting Server Firmware and Software" on page 229

Terminology

This section contains commonly used terms, product names, and acronyms found in the Sun Blade X3–2B documentation.

- Command-line interface: CLI
- Chassis monitoring module: CMM
- Fabric expansion module: FEM
- Hard drive: HD or HDD
- Host bus adapter: HBA
- Keyboard, video, mouse, and storage: KVMS
- My Oracle Support: MOS
- Network expansion module: NEM
- Oracle Hardware Management Pack: Oracle HMP
- Oracle Integrated Lights Out Manager: Oracle ILOM
- PCIe ExpressModules: PCIe EMs
- RAID expansion module: REM
- Service processor: SP
- Solid-state drive: SSD

Planning the System Management Environment

This section includes information about available management tools and how to select the best tool to use to manage the Sun Blade X3-2B.

The following topics are covered.

Description	Link
Review descriptions of the tools available to manage a single server.	"Choosing Tools for Single System Management" on page 15
Review descriptions of tools available to manage multiple servers.	"Choosing Tools for Multiple System Management" on page 16
Review advantages of the system management tools.	"System Management Tools Overview" on page 17
View a list of common system management tasks to see which tool you can use.	"Common System Management Tasks" on page 20
View a list of common system administrative tasks to see which tool you can use.	"Common System Administrative Tasks" on page 20
Evaluate which tool fits your server environment.	"Evaluating the Server Environment" on page 23
Locate system management documentation.	"Server Management Documentation" on page 25

Choosing Tools for Single System Management

A data center administrator can use system management tools for local management or for remote access management over a network. In addition, system management tools provide interfaces for integrating with other Oracle enterprise tools and third-party management applications.

Use the following system management tools to manage Oracle servers.

SSM Tool	Availability	Function	Server Boot Required?	Link
Oracle System Assistant	Pre-installed in the server on an embedded USB drive. No installation required.	Server set up and system (BIOS/Oracle ILOM) and component firmware, drivers, and tools updates.	Yes	"Oracle System Assistant" on page 17
Oracle Integrated Lights Out Manager (Oracle ILOM)	Pre-installed on the server service processor (SP). No installation required.	Maintain and manage server and server components.	No	"Oracle Integrated Lights Out Manager (ILOM)" on page 18
Oracle Hardware Management Pack	Included with Oracle System Assistant or My Oracle Support download packages.	Monitor hardware through the host operating system using command-line interface tools.	No	"Oracle Hardware Management Pack" on page 19

Related Information

- "System Management Tools Overview" on page 17
- "Accessing System Management Tools" on page 27
- "Planning for System Component Updating and Monitoring" on page 24

Choosing Tools for Multiple System Management

If you need to perform system management functions across several systems simultaneously, consider using Oracle Enterprise Manager Ops Center. Oracle Enterprise Manager Ops Center might be included with your server as part of a server support contract. You can also order Oracle Enterprise Manager Ops Center software from Oracle.

Oracle Enterprise Manager Ops Center is a highly scalable, unified management platform for physical and virtual environments. Use Oracle Enterprise Manager Ops Center to manage multiplatform x86 and SPARC systems and to integrate these systems with existing toolsets. Oracle Enterprise Manager Ops Center facilitates many aspects of compliance reporting (ITIL) and data center automation, enabling you to manage a large number of systems simultaneously.

For Oracle Enterprise Manager Ops Center product information refer to:
`http://www.oracle.com/technetwork/oem/ops-center/index.html`

Related Information

- "Choosing Tools for Single System Management" on page 15

System Management Tools Overview

These topics briefly describe the following system management tools:

- "Oracle System Assistant" on page 17
- "Oracle Integrated Lights Out Manager (ILOM)" on page 18
- "Oracle Hardware Management Pack" on page 19

Oracle System Assistant

Oracle System Assistant is a server provisioning and update tool that assists in initial server set up and OS installation and allows you to easily manage server updates. Once the server is set up and an OS installed, use Oracle System Assistant to keep the server up to date. With Oracle System Assistant, you can download platform-specific update packages from the Oracle support site as soon as they become available. The packages contain everything you need to keep your server up to date, including system (BIOS/Oracle ILOM SP) firmware, component firmware, drivers, and tools.

Oracle System Assistant is delivered on a USB storage drive that is embedded in the server. The embedded storage drive is factory configured with a server-specific version of Oracle System Assistant that you maintain as such by using an online update feature. Oracle System Assistant provides a graphical user interface from which you can manage server provisioning and update tasks. You can start Oracle System Assistant from the server boot screen or from Oracle ILOM.

With Oracle System Assistant, you can:

- Get a single server-specific bundle of the latest available BIOS, Oracle ILOM, and hardware firmware and the latest tools and OS drivers from the Oracle support site.
- Update OS drivers and component firmware.
- Configure RAID 0, 1, and 10.
- Install supported operating systems with the latest drivers and supported tools.
- Configure a subset of Oracle ILOM settings.
- Save and restore customized BIOS settings or revert the BIOS to the factory defaults.
- Access the Oracle System Assistant (Linux) shell terminal window allowing use of the runtime environment.
- Display system overview and detailed hardware inventory information.
- Access embedded product documentation.

Related Information

- "Setting Up Oracle System Assistant and Updating the Server" on page 41

Oracle Integrated Lights Out Manager (ILOM)

Oracle Integrated Lights Out Manager (Oracle ILOM) is system management firmware that is preinstalled on an embedded service processor (SP) on Oracle x86- and SPARC-based servers. Oracle ILOM enables you to actively manage and monitor the server and server components. Using Oracle ILOM, you can remotely manage and monitor the server from both standby and full power modes. The Oracle ILOM firmware automatically initializes when standby power is applied to the server.

Oracle ILOM firmware allows you to choose either a browser-based Web interface or an command-line interface (CLI).

With Oracle ILOM, you can:

- Monitor the current status of the server sensors and indicators.
- Monitor hardware errors and faults as they occur.
- Send events using SNMP traps or email alerts when faults occur.
- Remotely control the power state of your the server.
- Configure the server hardware.
- Launch Oracle System Assistant

  .

You can also configure Oracle ILOM to integrate with other management tools in your data center. You can easily integrate Oracle ILOM SNMP interface and IPMI management interfaces with other management tools and processes, such as Oracle Enterprise Manager Ops Center.

In addition, you can integrate Oracle ILOM with several enterprise management, third-party tools, such as CA Unicenter, HP OpenView Operations, BMC Patrol, and IBM Tivoli. For more information about which tools are supported, go to:

```
http://www.oracle.com/
technetwork/server-storage/servermgmt/tech/isv-hardware-connectors/index.html
```

Related Information

- "Choosing Tools for Multiple System Management" on page 16
- Oracle ILOM 3.1 Documentation Collection

Oracle Hardware Management Pack

Oracle Hardware Management Pack features two components: an SNMP monitoring agent and a suite of command-line interface tools (CLI Tools) for managing your servers.

With the Hardware Management Agent SNMP Plugins, 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.

Hardware Management Agent SNMP Plugins run on the host operating system of Oracle servers. The SNMP Plugins use the Oracle Hardware Storage Access Libraries to communicate with the service processor. Information about the current state of the server is fetched automatically by the Hardware Management Agent.

You can use the Oracle Server CLI Tools to configure Oracle servers. The CLI Tools work with Oracle Solaris, Oracle Linux, Oracle VM, other variants of Linux, and Windows operating systems. The following table describes the tasks that you can perform using the CLI Tools.

CLI Tool	System Management Task From Host OS
`ubiosconfig`	Configure BIOS settings, device boot order, and some SP settings.
`fwupdate`	Update Oracle ILOM and BIOS.
	Query, update, and validate firmware versions on supported SAS storage devices, embedded SAS storage controllers, SAS storage expanders, and storage drives.
`ilomconfig`	Restore, set, and view Oracle ILOM configuration settings, as well as viewing and setting Oracle ILOM properties that are associated with network management, clock configuration, and user management.
`raidconfig`	View or create RAID volumes on storage drives that are attached to RAID controllers, including storage arrays.
`hwmgmt`	Monitor system health.

Related Information

- Oracle Hardware Management Pack Documentation Library at: `http://www.oracle.com/pls/topic/lookup?ctx=ohmp`

Common System Management Tasks

You can use each system management tool independently, or, depending on your platform, you can use the tools together for more comprehensive system management. The following table describes common server management tasks that you can perform using single system management software.

Task	Oracle System Assistant	Oracle ILOM	Oracle Hardware Management Pack
Update BIOS firmware.	✓	✓	✓
Update Oracle ILOM firmware.	✓	✓	✓
Back up and restore BIOS settings.	✓	✓	✓
Configure Oracle ILOM.	✓	✓	✓
Update HBA firmware.	✓	–	✓
Update expander firmware (REM or FEM).	✓	–	✓
Install Linux operating system and drivers.	✓	–	–
Install Windows operating system and drivers.	✓	–	–
Install Oracle VM software and drivers.	✓	–	–
Monitor hardware components.	–	✓	✓
Configure RAID.	✓	–	✓

Related Information

- "System Management Tools Overview" on page 17
- "Planning for System Component Updating and Monitoring" on page 24
- "Installing System Management Tools" on page 25

Common System Administrative Tasks

The following table includes information about common administrative tasks that you can perform using system management tools.

Task	Oracle System Assistant	Oracle ILOM	Oracle Hardware Management Pack	Other
Setup software and firmware.	"Set Up Software and Firmware Using Oracle System Assistant" on page 95	"Set Up Software and Firmware Using Oracle ILOM" on page 96	"Set Up Software and Firmware Using Oracle Hardware Management Pack" on page 98	Not applicable
Set power-on and cooling policies.	Not applicable	"Managing Server Policies Using Oracle ILOM" on page 101	Not applicable	Not applicable
Update BIOS or Oracle ILOM firmware.	Update Firmware	CLI: load Web interface: ILOM Administration > Maintenance > Firmware Upgrade	`fwupdate`	Not applicable
Back up and restore BIOS settings.	Configure Hardware > BIOS Configuration		`biosconfig`	Not applicable
Update HBA and expander firmware.	Update Firmware	Not applicable	`fwupdate`	Not applicable
Configure a preinstalled operating system.	Not applicable	Not applicable	Not applicable	*Sun Blade X3-2B (formerly Sun Blade X6270 M3) Installation Guide*
Install Linux operating system.	Install OS	Not applicable	Not applicable	*Sun Blade X3-2B (formerly Sun Blade X6270 M3) Installation Guide for Linux Operating Systems*
Install Windows operating system.	Install OS	Not applicable	Not applicable	*Sun Blade X3-2B (formerly Sun Blade X6270 M3) Installation Guide for Windows Operating Systems*
Install Oracle VM operating system.	Install OS	Not applicable	Not applicable	*Sun Blade X3-2B (formerly Sun Blade X6270 M3) Installation Guide for Oracle VM Server*
Install Oracle Solaris operating system.	Not applicable	Not applicable	Not applicable	*Sun Blade X3-2B (formerly Sun Blade X6270 M3) Installation Guide for the Oracle Solaris Operating System*

Task	Oracle System Assistant	Oracle ILOM	Oracle Hardware Management Pack	Other
Install ESXi VMware.	Not applicable	Not applicable	Not applicable	*Sun Blade X3-2B (formerly Sun Blade X6270 M3) Installation Guide for ESX Software*
Display server SP IP address.	System Overview	CLI: `show /SP/network` Web interface: System Information > Summary	Not applicable	Not applicable
Display the host MAC address.	System Overview	CLI: `show /System` Web interface: System Information > Summary	Not applicable	Not applicable
Configure Oracle ILOM network settings.	Configure Hardware > Service Processor Configuration	CLI: `set /SP/network/properties` Web interface: ILOM Administration > Network Settings	`ILOMconfig`	Not applicable
Configure RAID.	Configure Hardware > RAID Configuration	Not applicable	`RAIDconfig`	"Configuring RAID" on page 111
Power on the server remotely.	Not applicable	CLI: `start /System` Web interface: System Information > Summary	Not applicable	Not applicable
Power off the server remotely.	Not applicable	CLI: `stop /System` Web interface: System Information > Summary	Not applicable	Not applicable
Reset the SP to default values.	Not applicable	CLI: `set /SP reset_to_defaults` Web interface: ILOM Administration > Configuration Management > Reset Defaults	Not applicable	Not applicable
Monitor hardware components.	Not applicable	CLI: `show System` Web interface: System Information	Hardware Management Agent	Not applicable

Related Information

- Oracle ILOM 3.1 Documentation Collection

- Oracle Hardware Management Pack Documentation Library (`http://www.oracle.com/pls/topic/lookup?ctx=ohmp`)
- "About the User Administration Guide" on page 11

Evaluating the Server Environment

This section can help you to decide which type of single system management tool or combination of tools is best for your server environment.

The evaluation covers the following information:

- "Planning for Operating System Installation" on page 23
- "Planning for System Component Updating and Monitoring" on page 24
- "Installing System Management Tools" on page 25
- "Server Management Documentation" on page 25

Planning for Operating System Installation

Most of the system management tools work with most operating systems that are supported for Oracle servers. However, there are some exceptions that are important to note. See the following table for detailed information.

For a list of the supported operating systems for your server, refer to the *Sun Blade X3-2B (formerly Sun Blade X6270 M3) Product Notes*.

System Management Tool	Operating System Limitations
Oracle System Assistant	Oracle System Assistant might not support the *installation* of all server–supported operating systems. However, Oracle System Assistant *does* support *software updates* for all supported and installed operating systems. For example, you need to manually install Oracle Solaris or VMware ESXi on the server; however, once installed you can use the Oracle System Assistant update tasks to keep the server up-to-date. Oracle System Assistant functions independently of the installed OS.
Oracle Integrated Lights Out Manager (Oracle ILOM)	Oracle ILOM functions independently of the installed OS.
Oracle Hardware Management Pack	To confirm which operating systems are supported with the Hardware Management Pack components, refer to the Support Matrix (`http://www.oracle.com/goto/hmp`)

Planning for System Component Updating and Monitoring

Use the system management tools to update or monitor server software or components.

The following table lists the main functions of each tool.

Server Management Software	Update Functions	Monitoring Functions
Oracle System Assistant	Updates Oracle ILOM and BIOS firmware. Updates and configures HBA firmware. Configures RAID. Assists in operating system and driver installation. Configures Oracle ILOM firmware.	Provides minimal system status information.
Oracle Integrated Lights Out Manager (ILOM)	Updates Oracle ILOM and BIOS firmware.	Monitors component status. Reports faults.
Oracle Hardware Management Pack	Configures Oracle ILOM and BIOS firmware. Updates HBA and expander firmware. Configures RAID.	Monitors component status. Reports faults.

Updating Firmware and Software

- The easiest way to get and update firmware and software is by using Oracle System Assistant. See "Setting Up Software and Firmware " on page 95.

Alternatively you can get the latest firmware and software from My Oracle Support or by requesting physical media. For more information, see "Getting Server Firmware and Software" on page 229.

Related Information

- "System Management Tools Overview" on page 17
- "Installing System Management Tools" on page 25
- "Common System Management Tasks" on page 20

Planning for Modular System Management

You can use all of the system management tools to manage modular systems (blades) or rack servers. However, only Oracle ILOM can be used to manage blade servers from both the chassis monitoring module (CMM) of the modular system and blade server interfaces.

Related Information

- "System Management Tools Overview" on page 17
- Oracle ILOM 3.1 Documentation Collection

Installing System Management Tools

The following table describes how you can install the single system management software tools.

System Management Tool	Installation Method
Oracle System Assistant	Preinstalled. Embedded in a server USB drive. No installation required.
Oracle Integrated Lights Out Manager	Preinstalled. Embedded on system service processor. No installation required.
Oracle Hardware Management Pack	Get from Oracle System Assistant or download from `http://www.oracle.com/goto/system-management`

Related Information

- "Accessing System Management Tools" on page 27
- "Getting Server Firmware and Software" on page 229
- `http://www.oracle.com/goto/system-management`.

Server Management Documentation

The following table describes where you can find additional documentation for the system management tools.

Server Management Tool	Link
Oracle System Assistant	■ Refer to the Oracle System Assistant online Help. See "Organization of Oracle System Assistant" on page 41. ■ Documentation for Oracle System Assistant is primarily within this administration guide and the *Sun Blade X3-2B (formerly Sun Blade X6270 M3) Installation Guide*.

Server Management Tool	Link
Oracle Integrated Lights Out Manager (Oracle ILOM)	http://www.oracle.com/pls/topic/lookup?ctx=ilom31
Oracle Hardware Management Pack	http://www.oracle.com/pls/topic/lookup?ctx=ohmp

Related Information

- "Accessing System Management Tools" on page 27
- "Getting Server Firmware and Software" on page 229

Accessing System Management Tools

This section describes how to access each of the system management tools available for the Sun Blade X3-2B after installation.

The following topics are covered.

Access	Link
Oracle System Assistant	"Access Oracle System Assistant" on page 27
Oracle ILOM	"Access Oracle ILOM " on page 35
Oracle Hardware Management Pack	"Access Oracle Hardware Management Pack" on page 38

Access Oracle System Assistant

To access Oracle System Assistant, choose one of the following options:

Option	Link
Access locally with an attached KVM. Boot the server, and during boot-up, press the F9 key.	"Access Oracle System Assistant Locally" on page 27
Access remotely using the Oracle ILOM Web interface and the Remote Console application to boot the server. During boot-up, press the F9 key.	"Access Oracle System Assistant Remotely" on page 30
Access using Oracle ILOM command-lineinterface (CLI).	"Access Oracle System Assistant Using Oracle ILOM CLI" on page 34

▼ Access Oracle System Assistant Locally

Use this procedure to access Oracle System Assistant during server startup when you are physically present at (local to)the server.

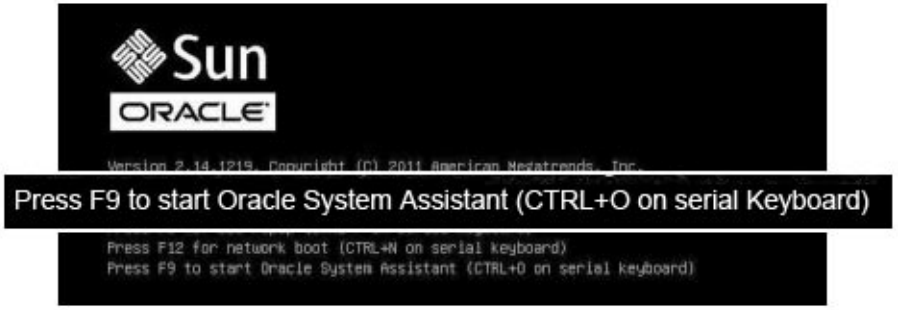
Before You Begin Attach a keyboard, video, and mouse (KVM) to the server (for more information see,"Attach a Keyboard and Mouse to the Dongle or Server Module" in *Sun Blade X3-2B (formerly Sun Blade X6270 M3) Installation Guide*).

1. **Verify that the server is in standby power mode (recommended) or full power mode.**
2. **Verify that a monitor, keyboard, and mouse are attached locally to the server.**
3. **Start (boot) the server.**

   Perform one of the following actions, depending on the server power state:

   - **Standby mode**: Press the Power button on the front of the server.
   - **Full power mode**: Power the server on and off.

   Boot messages appear on the monitor, including a list of Function key prompts. Use the F9 key to access Oracle System Assistant.



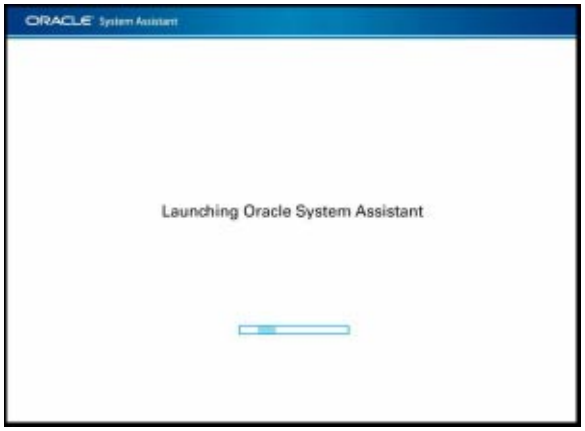
4. **To start Oracle System Assistant, press the F9 key when the prompt appears.**

   Note – If the F9 prompt does not appear in the list of Function key prompts, see "Troubleshooting and Verifying Oracle System Assistant" on page 67.

   You can also press CTRL-O on a serial keyboard.

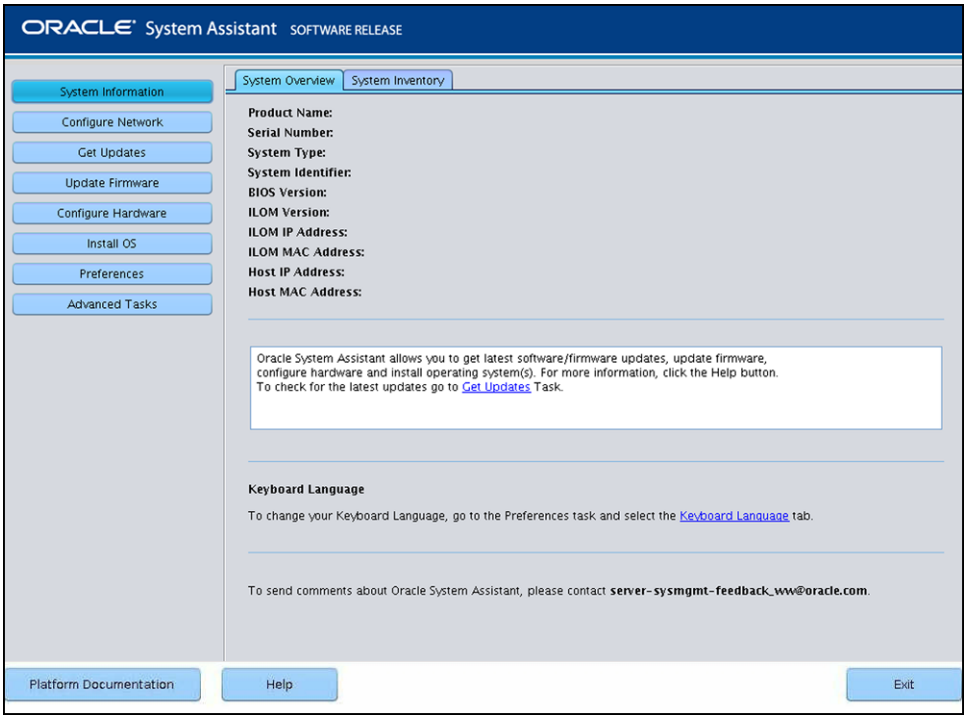
   Checkpoint messages appear, including the text `[Oracle System Assistant Selected]`.

The Launching Oracle System Assistant screen appears.



Then the System Information home screen appears.

Note – If this is your first time launching Oracle System Assistant, or if you have just performed an update, a Software License Screen might appear. To use Oracle System Assistant, you must agree to the software license.



5 **Perform Oracle System Assistant tasks.**

More Information Related Information

- "Setting Up Oracle System Assistant and Updating the Server" on page 41

▼ Access Oracle System Assistant Remotely

Use the following procedure to access Oracle System Assistant remotely from the Oracle ILOM Web interface.

1 **Log in to Oracle ILOM using the Web interface.**

See "Access Oracle ILOM Using a Web Browser" on page 36.

2 **To power off the host, do one of the following:**

- **From the Actions section of the Summary screen, click the Turn Off button for the Power State action.**

- **Select Host Management and then Power Control.**

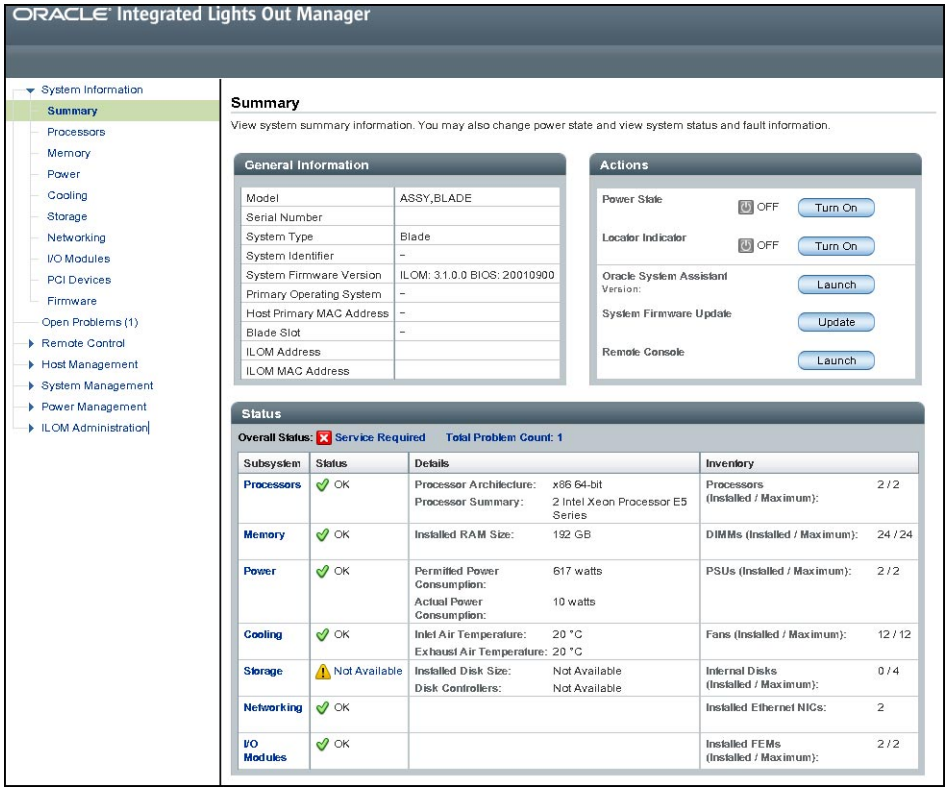
  a. **Select Server Power Control Management graceful shutdown and power off from the list.**

  b. **Click Save.**

Note – The host operating system must have power shutdown enabled.

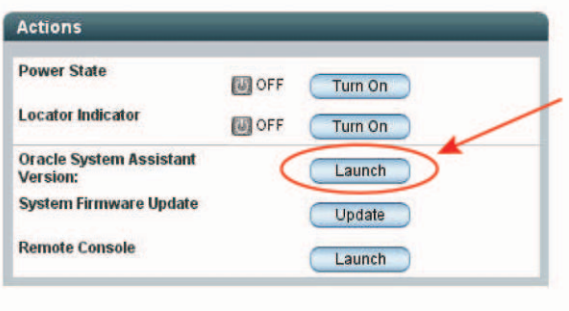
---

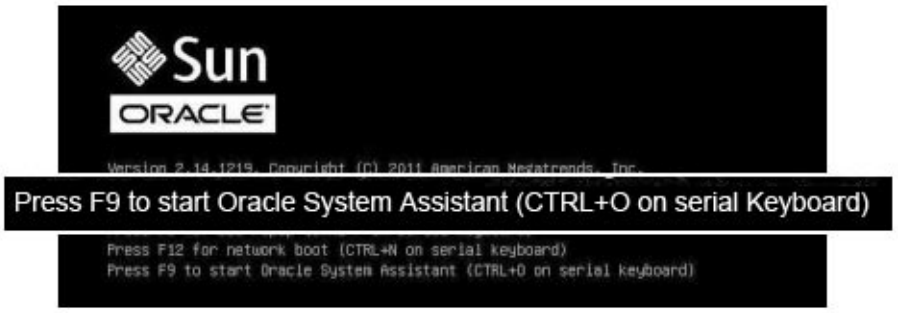
3 Access Oracle ILOM Web interface System Information > Summary page.



4 **To access Oracle System Assistant, click Launch Oracle System Assistant.**

Boot messages appear on the monitor, including a list of Function key prompts. Use the F9 key to access Oracle System Assistant.



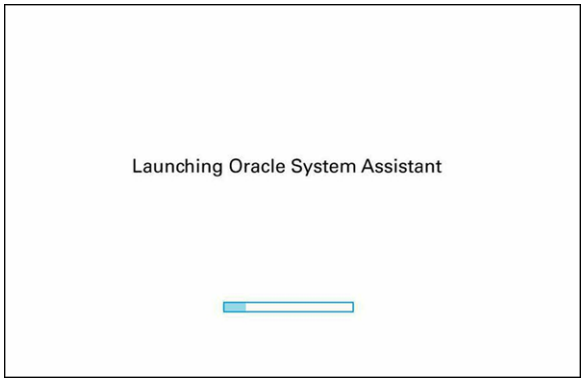


5 **To start Oracle System Assistant, press the F9 key when the prompt appears.**

Note – If the F9 prompt does not appear in the list of Function key prompts, see "Troubleshooting and Verifying Oracle System Assistant" on page 67.

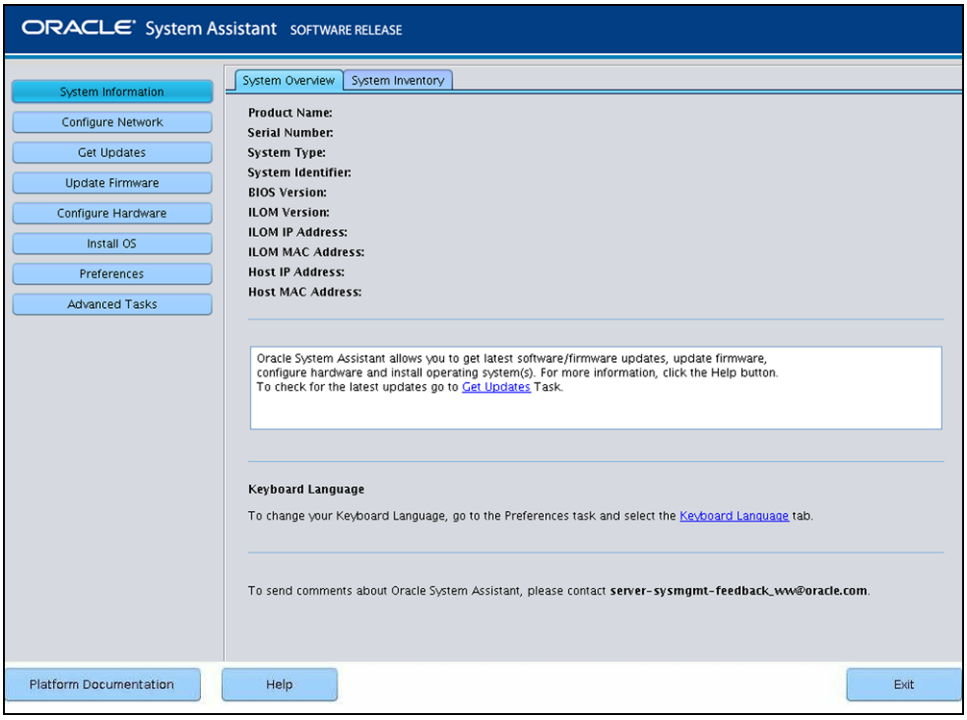
Checkpoint messages appear, including the text `[Oracle System Assistant Selected]`.

The Launching Oracle System Assistant screen appears.



Then the System Information home screen appears.

Note – If this is your first time launching Oracle System Assistant, or if you have just performed an update, a Software License Screen might appear. To use Oracle System Assistant, you must agree to the software license.



More Information Related Information

- "Setting Up Oracle System Assistant and Updating the Server" on page 41

Oracle ILOM 3.1 Documentation Collection

▼ Access Oracle System Assistant Using Oracle ILOM CLI

Use this procedure to access Oracle System Assistant from the Oracle ILOM command-line interface (CLI).

1. **Access the Oracle ILOM CLI.**

   See "Access Oracle ILOM Using CLI" on page 37.

2. **In the Oracle ILOM CLI, type:**

   ```
   start /HOST/provisioning/system-assistant
   ```

   The following prompt appears:

   ```
   Are you sure that you want to start /HOST/provisioning/system-assistant (y/n)?
   ```

3 **To launch Oracle System Assistant, type y.**

Oracle ILOM launches Oracle System Assistant.

The Oracle System Assistant System Overview task screen appears.

- **Or to cancel the operation, type n.**

4 **Perform tasks using Oracle System Assistant.**

More Information Related Information

- "Setting Up Oracle System Assistant and Updating the Server" on page 41

Oracle ILOM 3.1 Documentation Collection

Access Oracle ILOM

This section provides information about Oracle ILOM, including information about password security and procedures for accessing Oracle ILOM and changing the default password.

Option	Link
Information about password securtiy	"About Oracle ILOM Password Security" on page 35
Access Oracle ILOM using the Web browser.	"Access Oracle ILOM Using a Web Browser" on page 36.
Access Oracle ILOM using CLI commands.	"Access Oracle ILOM Using CLI" on page 37.
Change the Default Oracle ILOM Password	"Change Default Oracle ILOM Password" on page 38

About Oracle ILOM Password Security

To enable first-time login and access to Oracle ILOM, a default Administrator account and its password are provided with the system. To build a secure environment and enforce user authentication and authorization in Oracle ILOM, you must change the default password (changeme) for the default Administrator account (root) after your initial login to Oracle ILOM. If this default Administrator account has since been changed, contact your system administrator for an Oracle ILOM user account with Administrator privileges.

Related Information:

- "Change Default Oracle ILOM Password" on page 38

▼ Access Oracle ILOM Using a Web Browser

Use this procedure to log in to Oracle ILOM from Web browser interface.

1 Connect the Sun Blade X3-2B cables, and set up the IP addresses.

Refer to the *Sun Blade X3-2B (formerly Sun Blade X6270 M3) Installation Guide*.

2 Type the IP address of the server SP into the Web browser's address field.

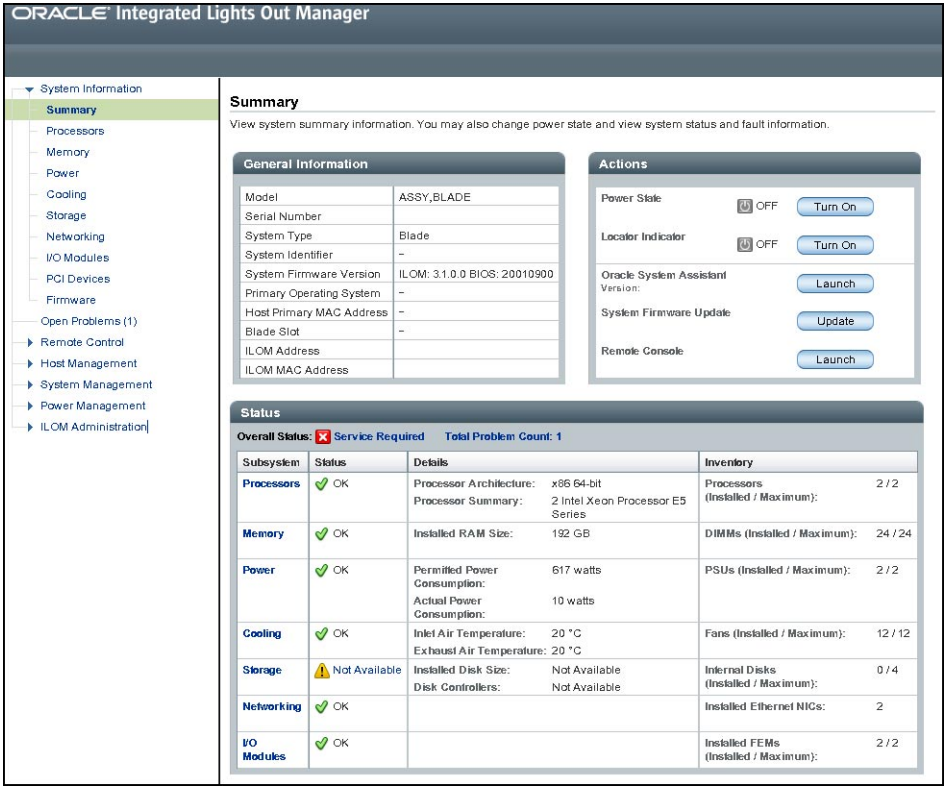
3 Type your user name and password at the prompt.

Tip – If the default administrator account has been changed, contact your system administrator for an Oracle ILOM user account with administrator privileges.

---

4 Click the Log In button.

The Oracle ILOM Summary page appears.



5 **Perform Oracle ILOM tasks in the Web browser or launch Oracle System Assistant.**

For more information, refer to Oracle ILOM 3.1 Documentation Collection

Next Steps

- "Change Default Oracle ILOM Password" on page 38

▼ Access Oracle ILOM Using CLI

Use this procedure to log in to Oracle ILOM from the Oracle ILOM command-line interface (CLI) .

Before You Begin You need the server service processor (SP) IP address.

1 **Open a terminal window.**

2 **Log in to the server SP using a Secure Shell (SSH) session:**

$ **ssh** *username@SPIPaddress*

Variable	Definition
username	User account with administrative privileges
SPIPaddress	IP address of the server's SP

Tip – If the default administrator account has been changed, contact your system administrator for an Oracle ILOM user account with administrator privileges.

After you have successfully logged in to Oracle ILOM, the CLI prompt appears:

```
->
```

For more information, refer to Oracle ILOM 3.1 Documentation Collection

3 **Perform Oracle ILOM CLI tasks.**

Next Steps

- "Change Default Oracle ILOM Password" on page 38

▼ Change Default Oracle ILOM Password

1. **Log in to Oracle ILOM as a user with administrator privileges.**
2. **In the left navigation panel, click ILOM Administration.**
3. **From the submenu list, click User Management.**
   The User Management screen appears in the main window section.
4. **In the User Management window, click the User Accounts tab.**
   The User Accounts screen appears.
5. **In the Users section, highlight the root user row.**
6. **Click Edit.**
   A Change Password popup screen appears.
7. **Change the password.**
   The password is case sensitive and must be 8 to 16 characters. Use any characters except a colon and space.

   Note – Roles *cannot* be modified for the special user 'root'.

8. **Click Save.**

Access Oracle Hardware Management Pack

To access Oracle Hardware Management Pack, choose one of the following methods.

Option	Link
Using Oracle System Assistant	"Access Oracle Hardware Management Pack From Oracle System Assistant" on page 39
Download the Oracle Hardware Management Pack software	"Access Oracle Hardware Management Pack From My Oracle Support" on page 39

Access Oracle Hardware Management Pack From Oracle System Assistant

The Oracle Hardware Management Pack tool is delivered with every platform software release (see the Release Notes for version number). The Oracle Hardware Management Pack files are located in the operating system (OS) directories in the file system of the Oracle System Assistant USB drive.

Use this procedure to access the Oracle Hardware Management Pack files on the internal Oracle System Assistant USB drive.

1. **Use a file browser to access the Oracle System Assistant USB drive from the server OS.**

   The Oracle Hardware Management Pack files are located in the operating system directories in the file system of the Oracle System Assistant USB drive.

   Note – Depending on the OS, you might need to mount the USB drive. See "Mounting the Oracle System Assistant USB Flash Drive" on page 80.

2. **Browse to the applicable OS directory in the file system, then to the subdirectory for drivers and tools, where the Oracle Hardware Management Pack files are located.**

3. **Copy the files from the USB drive to a location of your choice.**

4. **Install the Oracle Hardware Management Pack.**

   For installation instructions, refer to the Oracle Hardware Management Pack Documentation Library (`http://www.oracle.com/pls/topic/lookup?ctx=ohmp`).

More Information Related Information

- "Oracle Hardware Management Pack" on page 19

Access Oracle Hardware Management Pack From My Oracle Support

Use this procedure to get the Oracle Hardware Management Pack files from the Oracle download site, My Oracle Support (MOS).

1. **Download Oracle Hardware Management Pack.**

   Follow the instructions in "Accessing Firmware and Software" on page 231.

2. **Install Oracle Hardware Management Pack.**

   For installation instructions, refer to the Oracle Hardware Management Pack Documentation Library (`http://www.oracle.com/pls/topic/lookup?ctx=ohmp`)..

3 **After Oracle Hardware Management Pack is installed, you can access all of the Oracle Hardware Management Pack tools. Perform Oracle Hardware Management Pack tasks by typing CLI commands.**

More Information

Related Information

- "Oracle Hardware Management Pack" on page 19

Setting Up Oracle System Assistant and Updating the Server

Oracle System Assistant assists in server set up and optimization. This section introduces you to the user interface (UI), shows you how to set up Oracle System Assistant, and describes the two-step process for updating the server.

Description	Link
Learn about the organization of Oracle System Assistant and how to set it up, so you can get the latest platform software release updates when they become available for your server.	"Setting Up Oracle System Assistant" on page 41
Provision a server by using Oracle System Assistant to configure RAID and install an OS	"Provisioning the Server for Operation" on page 50
Optimize the server by keeping firmware and software components updated.	"Keeping the Server Up to Date" on page 56

The following Oracle System Assistant server administrative tasks are covered.

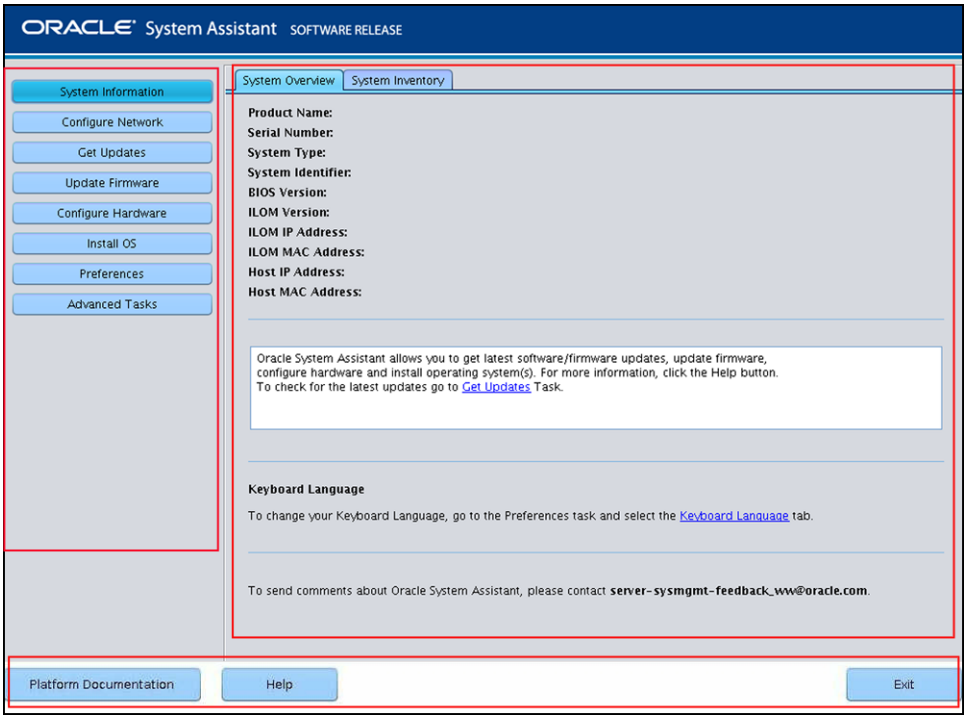
Setting Up Oracle System Assistant

This section describes the organization of Oracle System Assistant and how to set up Oracle System Assistant, so it can download platform software releases from Oracle when they become available.

- "Organization of Oracle System Assistant" on page 41
- "Set Keyboard Language" on page 47
- "Configure Network Settings" on page 48

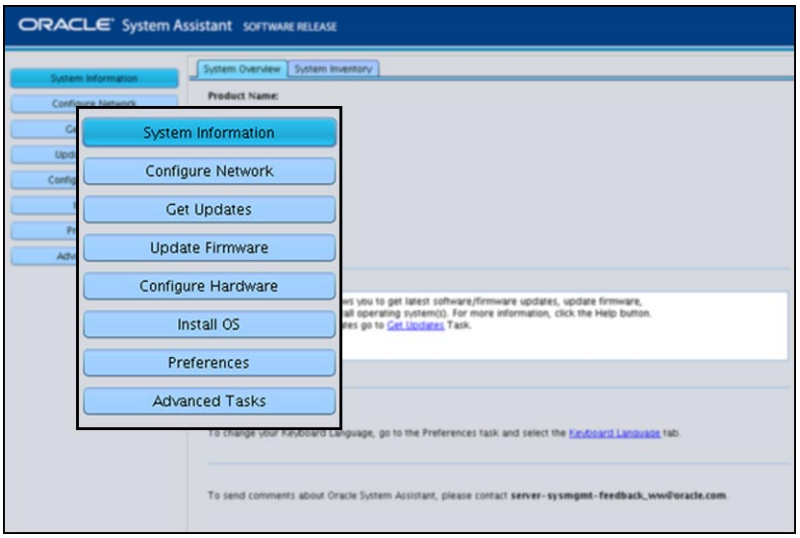
Organization of Oracle System Assistant

The Oracle System Assistant System user interface (UI) is divided into three sections, the left side Task pane, the center Main pane, and the Help and Exit pane, which is located at the bottom of the UI.

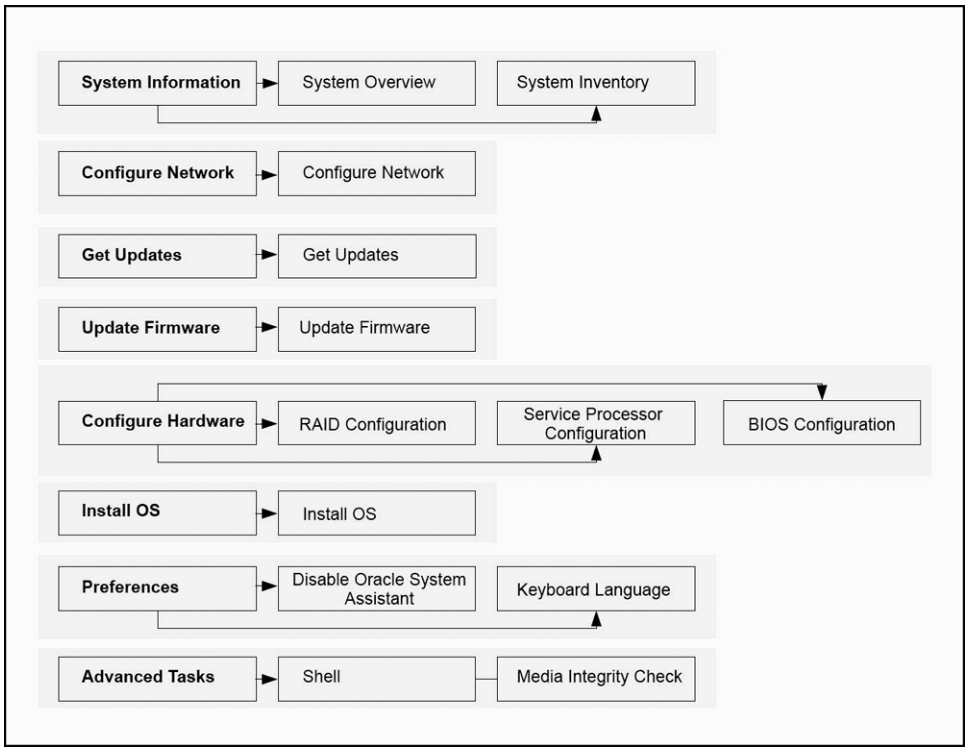


Task and Main Pane

Oracle System Assistant is organized by tasks. The eight task buttons are located on the left side of the interface in the Task pane.

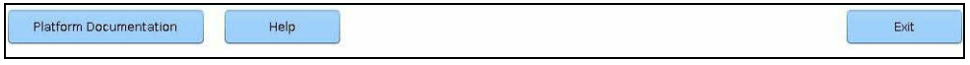


Clicking a task button populates the center Main pane. Some tasks contain tabs that allow you to access additional task screens. For example, the following figure shows the organization of the Oracle System Assistant functions and the various sub-tabs and tasks.



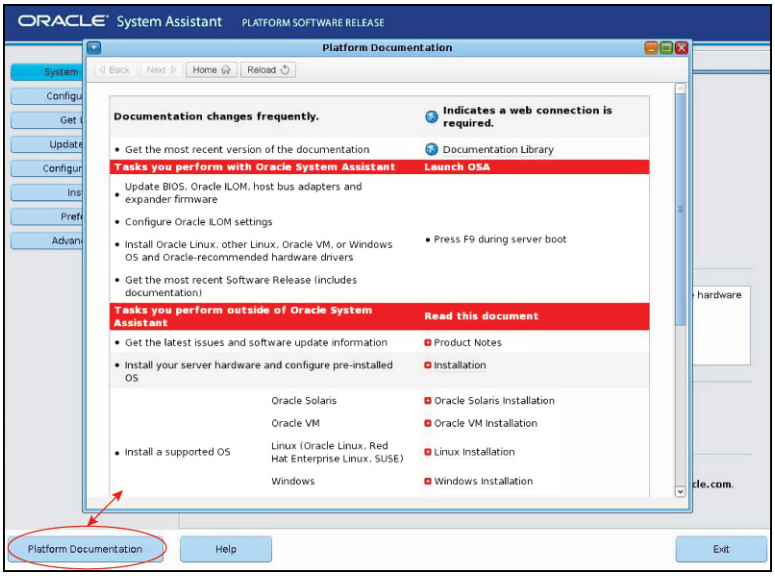
Help and Exit Pane

The Help and Exit pane contains buttons that allow you to access the server documentation that resides on the internal Oracle System Assistant USB drive and the context-sensitive help. The Exit button is also located in this pane.



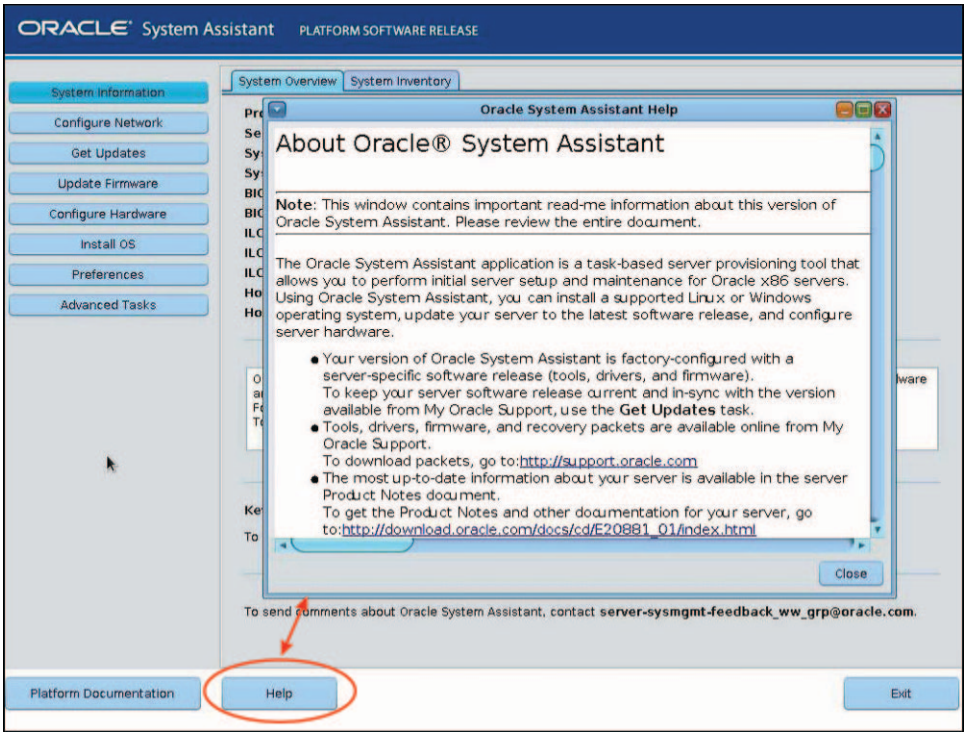
Help and Exit Pane—Product Documentation

Clicking the Product Documentation button allows you to access the server documentation that resides on the Oracle System Assistant USB drive.



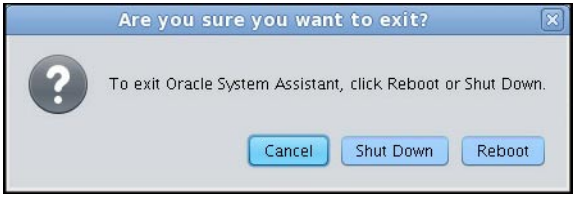
Help and Exit Pane—Help Button

Clicking the Help button allows you to access Oracle System Assistant's context sensitive help.



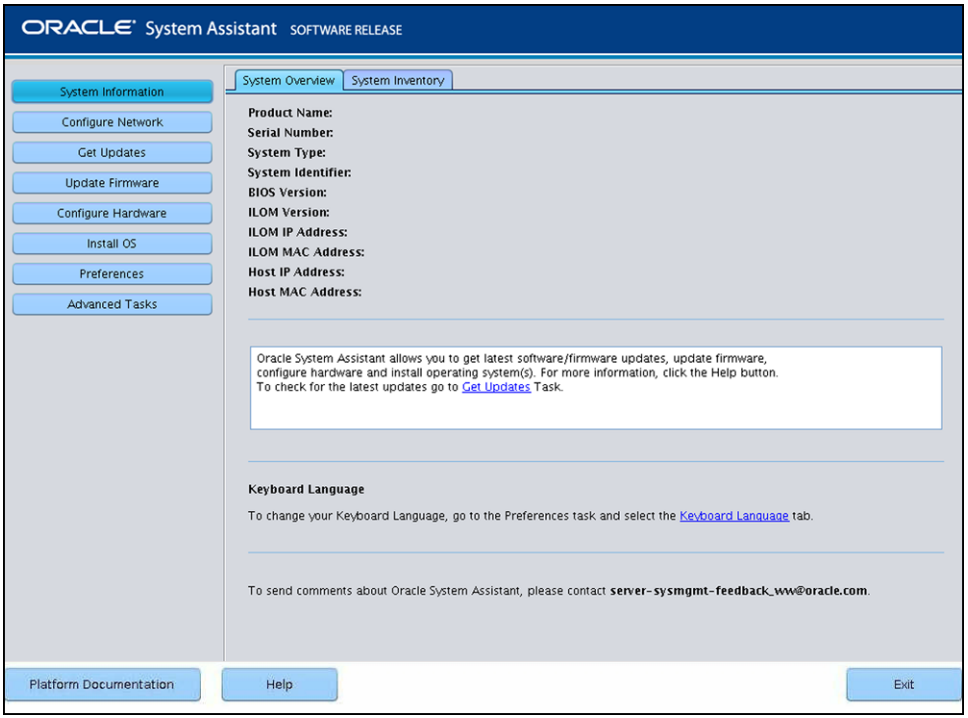
Help and Exit Pane—Exit Button

Clicking the Exit button provides the option to exit the Oracle System Assistant interface and leave the server in shutdown (standby power) mode, or you can select the option to exit interface and reboot the server.



Oracle System Assistant Home Screen

The System Information, System Overview screen is the Oracle System Assistant home screen. The home screen is the first screen that appears when you launch Oracle System Assistant, and it provides an overview of important server hardware identifier information and server system firmware versions.



▼ Set Keyboard Language

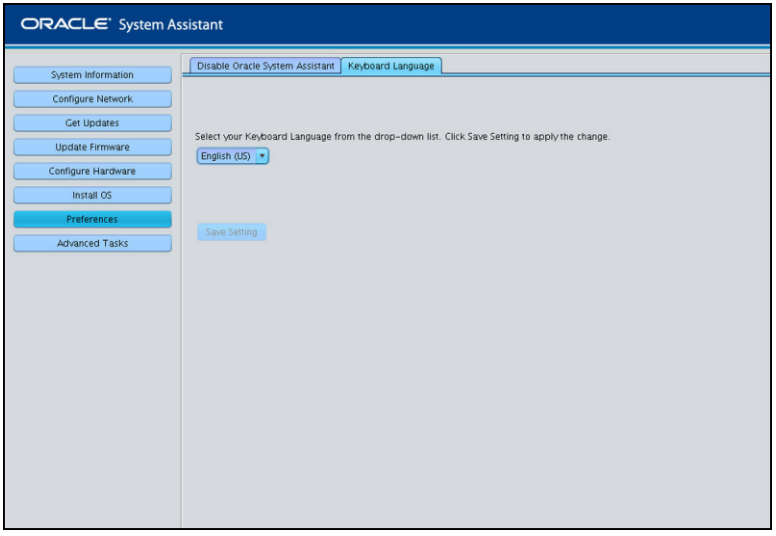
The Keyboard Language task enables you to select the keyboard language for Oracle System Assistant.

Note – The Keyboard Language task setting applies only to the Oracle System Assistant UI. It does not apply to the shell command-line interface nor does it set the keyboard language for the server OS.

Use this procedure to set the Oracle System Assistant keyboard language.

1. **Click Preferences, and then click the Keyboard Language tab.**

   The Keyboard Language screen appears.



2. **From the drop-down list, select the keyboard language.**

   Options include: English (US), French, German, Italian, Spanish, and Swedish.

3. **Click Save Settings.**

More Information

Related Information

- "Organization of Oracle System Assistant" on page 41

▼ Configure Network Settings

The Configure Network task enables you to configure Oracle System Assistant network settings, so the Oracle System Assistant Get Updates task can retrieve the software platform updates when they become available from Oracle. Configure the network settings, so Oracle System Assistant has Web access.

Note – You must configure the network settings before you can use the Get Updates task in Oracle System Assistant.

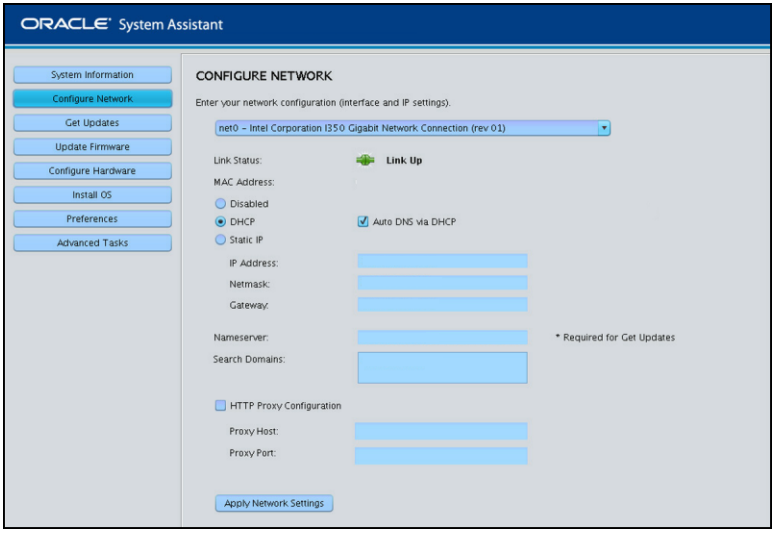
Use this procedure to configure the network settings for Oracle System Assistant.

Before You Begin

Obtain your system's network information, such as the name server for a static IP.

1 **Click the Configure Network task button.**

The Configure Network screen appears.



2 **Select the network device to configure.**

The drop-down list identifies the devices that are visible to the server.

3 **Configure the network address settings.**

To determine the IP address of the server, select one of the following methods:

- **Disabled**: Do not allow network access for this device.
- **DHCP**: Automatically assign an IP address to the server using Dynamic Host Control Protocol (DHCP). When this option is selected, you can select the Auto DNS via DHCP option to automatically assign the name server IP address and search domain. If you do not select the Auto DNS via DHCP option, you must also provide the following information:
  - Name server IP address
  - (Optional) Search domain
- **Static**: Assign a fixed IP address to the server. You must provide the following information:
  - Server IP address
  - Netmask
  - Gateway
- **HTTP Proxy Configuration**: Select this option if you want to use a proxy server. You must provide the following information:
  - Proxy host
  - Proxy port

4. **Click the Apply Network Settings button.**

   The system prompts for confirmation to apply the network settings and to disable all other interfaces.

5. **To proceed, click Yes.**

More Information Related Information

- "Organization of Oracle System Assistant" on page 41

Provisioning the Server for Operation

This section describes how to use Oracle System Assistant to make the server ready for operation by configuring RAID and installing the OS.

- "Configure Hardware for RAID" on page 50
- "Install an Operating System" on page 53

▼ Configure Hardware for RAID

The Oracle System Assistant RAID Configuration task allows you to configure RAID-0, RAID-1, or RAID 10 for the server storage drives.

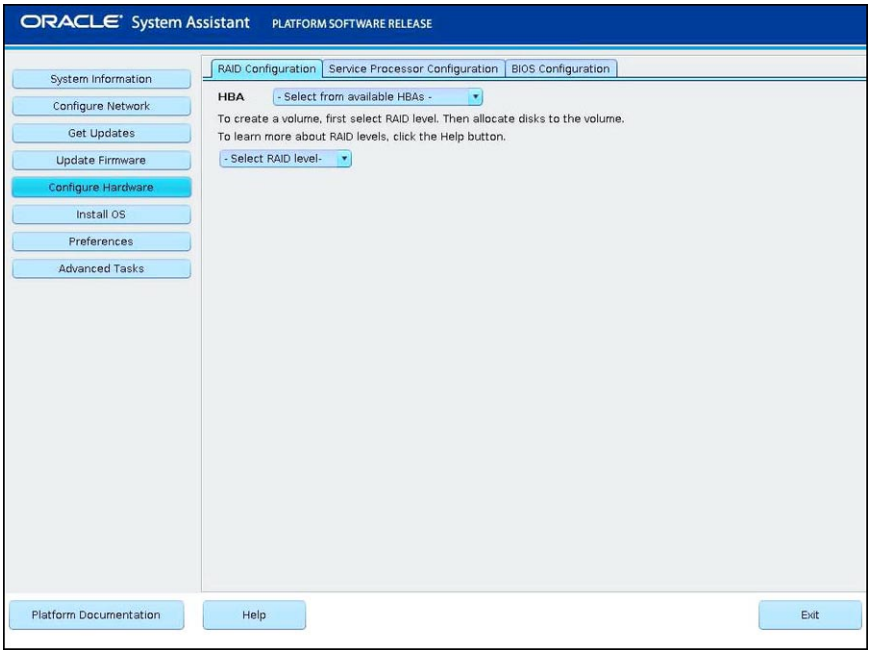
Note – Perform this task before installing an operating system.

When you configure RAID volumes, the disks must be the same size and the same type, (for example, SAS or SATA).

Use this procedure to configure RAID using Oracle System Assistant.

1 **Click Configure Hardware, and then click the RAID Configuration tab.**

The RAID Configuration screen appears.



2 **In the HBA list box, verify the host bus adapter (HBA) disk controller is correct.**

For example, the server supports the SAS6-REM-Z Express Module or the SGX-SAS6-**R**-REM-Z Express Module (if you want to create a bootable volume). For more information about these HBAs, refer to "Preparing the Storage Drives to Install an Operating System" in *Sun Blade X3-2B (formerly Sun Blade X6270 M3) Installation Guide*

3 **In the Select RAID Level list box, select the RAID level, either RAID-0 or RAID-1.**

Note – You can use Oracle System Assistant to set only these two RAID levels. To set other RAID levels, use the HBA BIOS Setup Utility.

The number of disks allowed in an array depends on the controller:

- The SGX-SAS6-R-REM-Z HBA requires one or more disks and uses WebBIOS for configuration.
- The SGS-SAS6-REM-Z HBA requires two or more disks and uses the Configuration Utility for configuration.

4. **In the Available Disks table, select the storage drives that you want to add to the RAID configuration.**

   If a volume already exists on the disk, it appears in the Created Volumes section. If necessary, highlight and delete the existing volume.

   Note – Disks must be the same size and type (SAS or SATA).

5. **Click the Create Volume button.**

   The Creating RAID Volume information box appears.

6. **Wait for the RAID volume to be created.**

   The Volume Details dialog box appears. Information about the highlighted volume is displayed.

7. **In the Volume Details dialog box, type the volume name in the Volume Name box, and then click the Save Changes button.**

   The RAID Configuration screen appears. This completes the RAID configuration.

8. **Continue with the following steps if you want to delete a RAID volume or configure a bootable volume.**

   - **If you want to delete a RAID volume, in the RAID Configuration screen, select the volume, and then click the Delete Volume button.**

     This action deletes all data on the existing volume.

   - **If you want to create a bootable volume, in the RAID Configuration screen, select the RAID volume, and then click the Set Volume for Boot button.**

     The RAID Configuration screen now indicates the bootable volume. The server then boots from this volume if selected to boot from the RAID controller.

     Note – Your disk controller might not support this feature.

9. **Click Save Settings.**

More Information Related Information

- “Organization of Oracle System Assistant” on page 41
- “Configuring RAID” on page 111

Install an Operating System

Note – Oracle System Assistant OS installation task is available only for supported versions of **Windows** and **Linux** operating systems and **Oracle VM** software.

Use this procedure to install a supported operating system on the server using Oracle System Assistant.

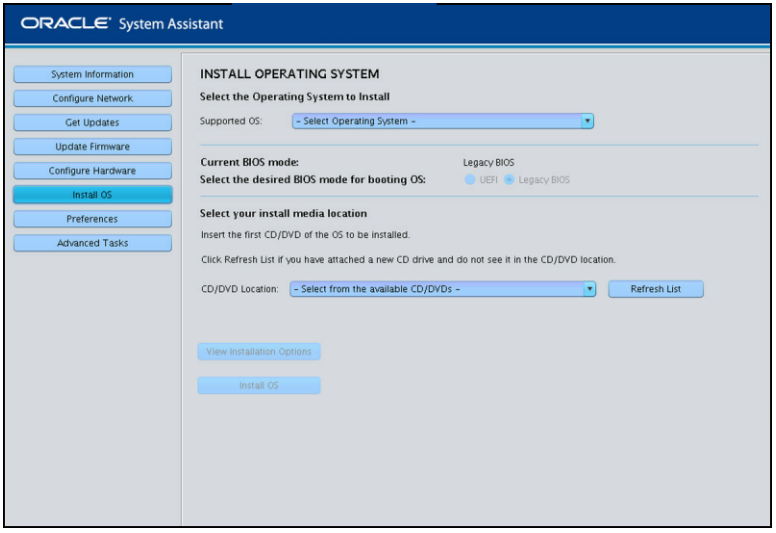
Before You Begin You must supply the OS media and license.

Perform the following tasks before you begin this procedure:

- Get the latest tools and drivers. See "Get Updates of Platform Software Release" on page 59.
- Update firmware. See "Update Firmware" on page 64.
- Configure RAID. See "Configure Hardware for RAID" on page 50.

1. **Click the Install OS task button.**

   The Install Operating System screen appears.



2. **From the Supported OS drop-down list, select the operating system to install.**

   The list contains only the supported operating systems that can use the Install OS task.

3. **In the Select the desired BIOS mode for booting OS portion of the screen, select the BIOS mode (UEFI or Legacy BIOS) that you want to use for the OS installation.**

   The choice of BIOS modes is available only if the target OS supports booting in UEFI mode.

See "Selecting Legacy and UEFI BIOS" on page 123.

4 **In the Select your install media location portion of the screen, indicate the location of the installation media.**

This is the location of the OS distribution media. Options are CD/DVD devices. Click the Refresh button to update the list of devices.

Tip – If you are installing the OS remotely using KVM, choose the KVM menu option Devices and click CD-ROM to get the remote CD-ROM to appear. Then on the Oracle System Assistant screen, click Refesh and select the CD/DVD location.

---

5 **In the Select the boot disk portion of the screen, select the boot device from the Boot disk drop-down list.**

This is the device on which you install the operating system.

If you select a Linux distribution, the Select the boot disk portion of the screen appears. If you select a Windows distribution, the Select the boot disk portion of the screen does not appear.

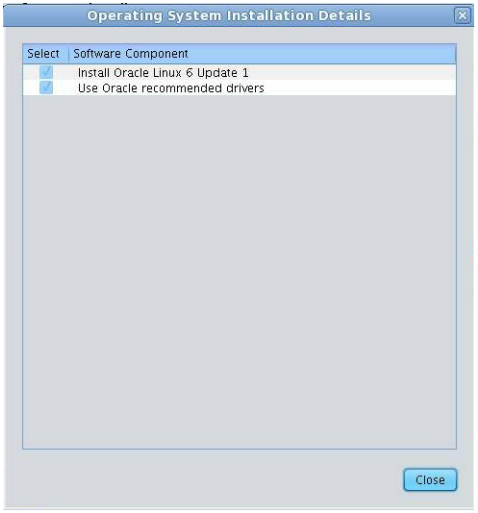
Caution – Loss of data. The operating system installation erases the contents of the disk. All data on the selected disk is erased.

---

6 **To confirm your selection of the boot device, click Yes.**

7. **Click View Installation Options.**

   The Operating System Installation Details dialog appears. The OS and Driver software components are listed. Deselect any components you do not want to install. For most operating systems, all components listed are required.



8. **To exit the dialog, click Close.**

   The Install Operating System screen appears.

9. **Click the Install OS button.**

10. **Follow along and respond to the prompts until the process finishes.**

    After the installation is complete, the server boots.

More Information

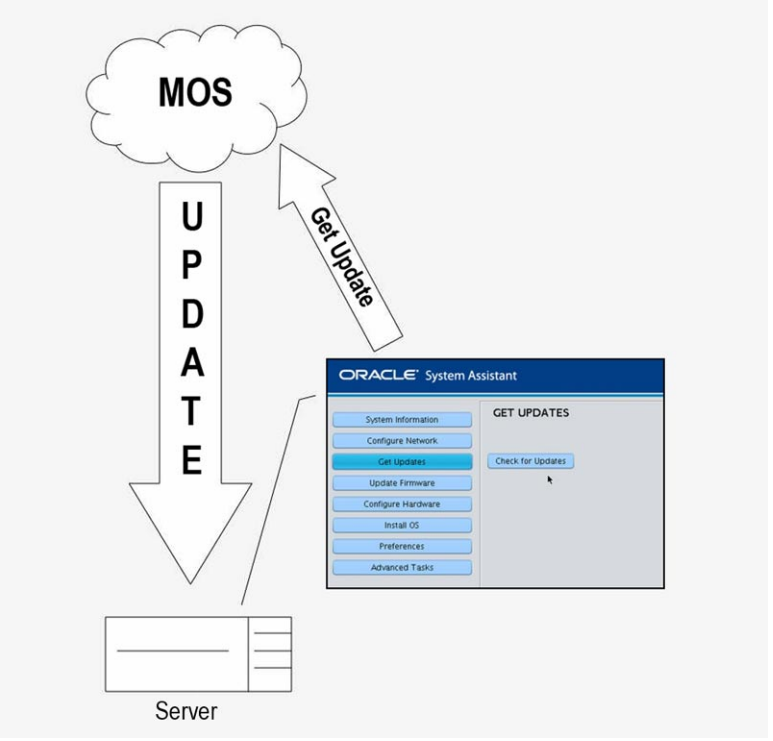
Related Information

- "Organization of Oracle System Assistant" on page 41
- "Configuring the UEFI BIOS Boot Mode" on page 123
- "Preparing the Storage Drives to Install an Operating System" in *Sun Blade X3-2B (formerly Sun Blade X6270 M3) Installation Guide*
- *Sun Blade X3-2B (formerly Sun Blade X6270 M3) Installation Guide for Oracle VM Server*
- *Sun Blade X3-2B (formerly Sun Blade X6270 M3) Installation Guide for ESX Software*
- *Sun Blade X3-2B (formerly Sun Blade X6270 M3) Installation Guide for Linux Operating Systems*
- *Sun Blade X3-2B (formerly Sun Blade X6270 M3) Installation Guide for Windows Operating Systems*

Keeping the Server Up to Date

Keeping your server's system and component firmware and OS drivers up to date with the most recent Oracle platform software release is a simple a two-step process.

First, use the Get Updates task to update the Oracle System Assistant software that resides on the dedicated USB drive inside the server. The Get Updates task connects to the My Oracle Support (MOS) site and downloads a new version of Oracle System Assistant, which includes a package of server- and OS–specific firmware, drivers, and tools.



Second, use the Firmware Update task to poll system firmware and server hardware to determine which components need an update. Choose the components to update or update all components.

The server update process consists of the following two steps:

1. Perform the Get Updates task.
2. Perform the Update Firmware task.

You can use the server's *Product Notes* document to stay abreast of enhancements, announcements, and issues that affect your server. Additionally, you can use the *Product Notes* document with the system overview and inventory screens to monitor and analyze the status of the server software and firmware.

Use the procedures in this section to keep your server current with the latest Oracle platform software release:

- "View the Server Product Notes and Documentation" on page 57
- "View System Overview Information" on page 57
- "View System Inventory Information" on page 58
- "Get Updates of Platform Software Release" on page 59
- "Configure MOS to Enable Oracle System Assistant Updates" on page 61
- "Update Oracle System Assistant When Online Access to MOS is Not Available" on page 63
- "View Oracle System Assistant Release Notes" on page 63
- "Update Firmware" on page 64

View the Server Product Notes and Documentation

An HTML version of the server documentation, including the *Product Notes*, is available as part of the Oracle System Assistant Get Updates download. It resides on the internal USB drive. The documentation is viewable from the Oracle System Assistant interface by clicking the Product Documentation button on the lower Help and Exit pane.

A more up-to-date version of the server documentation is also available online in the server documentation library. The following link for the online documentation is included on the Product Documentation screen:

`http://docs.oracle.com/cd/E20881_01/index.html`

Use this procedure to view the server's *Product Notes*.

1. **Click the Product Documentation button located in the lower Help and Exit pane.**

   An documentation index page appears.

2. **View the documentation that resides on the Oracle System Assistant USB device by clicking the links or for the most up-to-date documentation, click the link to view online documentation.**

Note – To view online documentation, the Oracle System Assistant network must be setup using the Network Configuration task.

View System Overview Information

The System Overview screen provides access to important server-related information. In addition to displaying hardware identification information, such as serial number and MAC address, the System Overview screen displays the current server system firmware (BIOS and

Oracle ILOM/SP) version numbers, and provides access to the Release Notes document (for more information, see "View Oracle System Assistant Release Notes" on page 63). The System Overview screen also serves as the Oracle System Assistant home screen.

Use this procedure to access the System Overview screen.

- **Click the System Information task button.**

  The System Overview screen appears.

  Use this screen to get the following information:

  - Product name
  - Serial number
  - System type
  - System identifier
  - BIOS version number
  - ILOM version number
  - ILOM IP address
  - ILOM MAC address
  - Host IP address
  - Host MAC address

More Information Related Information

"Organization of Oracle System Assistant" on page 41

View System Inventory Information

The System Inventory screen provides detailed information for all the components in the server. The screen allows you to quickly access important manufacturer-specific and firmware version information.

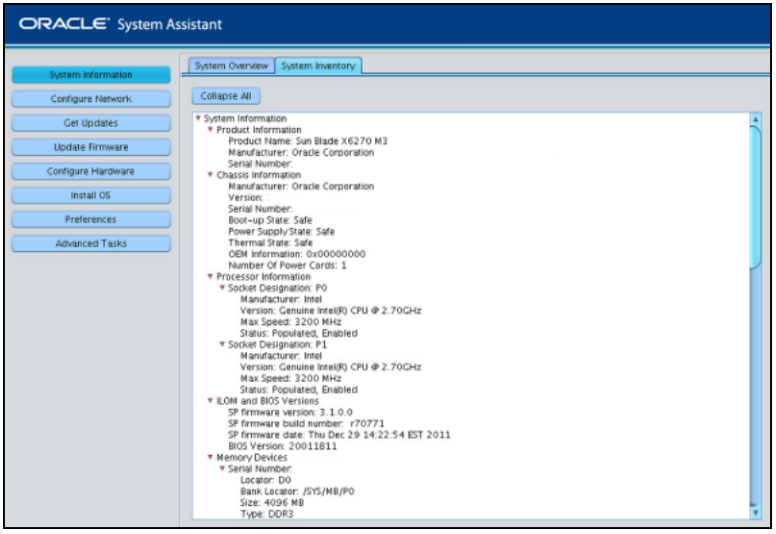
Use this procedure to view system information for all the components in the server.

1. **Click the System Information task button.**

   The System Overview screen appears, with information about the system.

2. **Click the System Inventory tab.**

   The System Inventory screen appears.



3. **To view detailed information, click on one of the entries.**

4. **To expand or collapse information for all entries, click Expand All or Collapse all, respectively.**

More Information

Related Information

"Organization of Oracle System Assistant" on page 41

▼ Get Updates of Platform Software Release

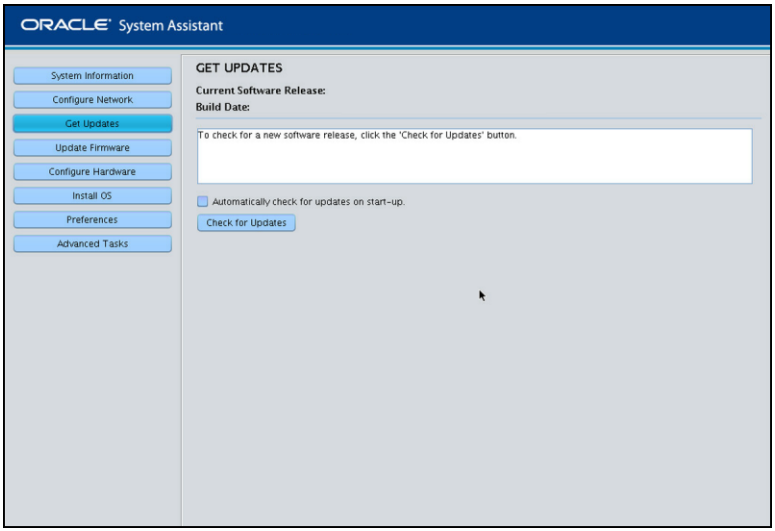
With Oracle System Assistant, you no longer need to manually download software packages from multiple download sites or use a CD/DVD (or ISO image) to get the necessary firmware, drivers, and tools for your server. Oracle System Assistant's Get Updates task connects to the Oracle download site and retrieves a single bundle of firmware and software that is specific to your server and OS. Performing the Get Updates task is the first step of a two-step process for updating the server—the second step is to perform the Update Firmware task.

Use this procedure to update Oracle System Assistant to the latest software release using the Get Updates task.

Before You Begin

- Ensure that Oracle System Assistant has external Web access. See "Configure Network Settings" on page 48.

1. **Click the Get Updates task button.**



Note – To automatically check for updates each time the system is started, click the check box.

---

2. **To check for a new software release, click the Check for Updates button.**

   If an update is available, the update's readme file appears.

3. **To get the update, click the Download and Apply Updates button.**

   The Get Updates Sign-In screen appears.

4. **Provide your MOS credentials.**

   Enter your MOS credentials (username and password).

Note – The server must have download entitlement with MOS. If the sign-in process halts because Oracle System Assistant cannot verify entitlement, you need to configure MOS to enable Oracle System Assistant updates. See "Configure MOS to Enable Oracle System Assistant Updates" on page 61.

After the updates are downloaded, the system reboots.

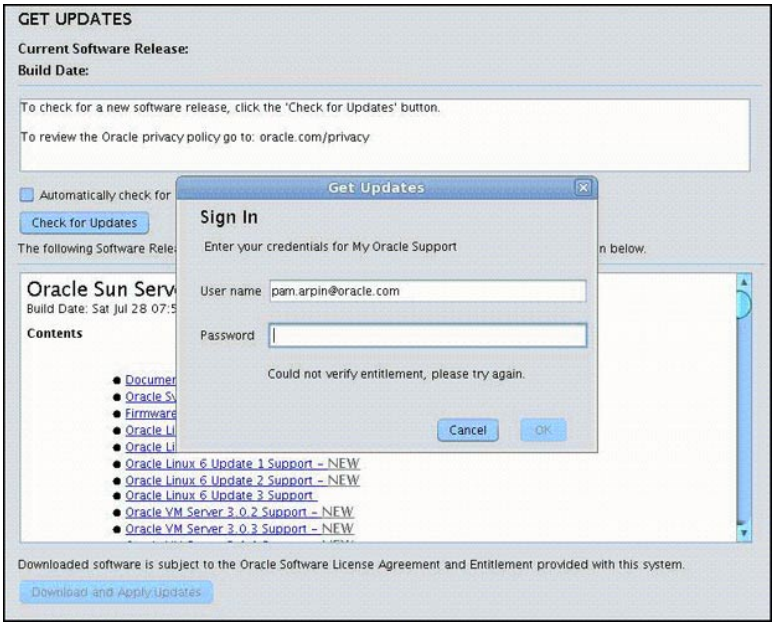
More Information

Related Information

"Organization of Oracle System Assistant" on page 41

▼ Configure MOS to Enable Oracle System Assistant Updates

Before allowing the server to download a platform software release update, Oracle System Assistant first verifies that the server has download entitlement with My Oracle Support (MOS). A server has entitlement when the server serial number has an association with a valid MOS Customer Support Identifier (CSI). If this association has not been made prior to attempting the Get Updates task, Oracle System Assistant will not be able to verify entitlement, and the update process halts at the Get Updates Sign-in screen, disallowing server access to MOS.



Use this procedure to associate the server with the CSI at MOS.

Note – This is a one–time setup procedure.

Before You Begin You must have one of the following:

- Customer Support Identifier (CSI), which is printed on the Oracle Premier Support for Systems purchase confirmation letter or available in the server warranty contract documents.
- Server serial number, which is available on the Oracle System Assistant in the System Overview tab.

1. **Log in to MOS at:**
   `http://support.oracle.com`
2. **Select the Settings tab from the More drop-down list.**
3. **In the left-side pane under Personal, click Accounts/Privileges.**
4. **Click the Request Access button in the Support Identifiers window.**
   The Request Access to a Support Identifier window appears.
5. **Do one of the following:**

   - **If you have the CSI, enter it in the Support Identifier field of the Request Access tab and click Request Access.**

   Approval *might* be required, but once access is granted, the Oracle System Assistant Get Updates capability is enabled for all servers associated with the CSI.

   Note – If you cannot obtain the CSI access or are unable to download updates for the server using Oracle System Assistant, contact Oracle Support.

   - **If you have the server serial number but do not have the CSI, do the following:**

     a. **Click the Find a Support Identifier tab.**

     b. **Type the server serial number in the System Serial Number field.**

c. **Type the organization name in the Organization field.**

d. **Click Search.**

e. **Highlight the CSI in the search results table and click Request Access.**

Approval *might* be required, but, once access is granted, the Oracle System Assistant Get Updates capability is enabled for all servers associated with the CSI.

Note – If you cannot obtain the CSI access or are unable to download updates for the server using Oracle System Assistant, contact Oracle Support.

Update Oracle System Assistant When Online Access to MOS is Not Available

If your server cannot access MOS using the Get Updates task, you can update Oracle System Assistant using the recovery ISO that is included with the latest update.

- **To update the server when online access is not available, use the recovery ISO.**

See "Recover Oracle System Assistant Software" on page 71.

View Oracle System Assistant Release Notes

Whenever you update Oracle System Assistant, review the Release Notes documentation. The Release Notes document contains important information about enhancements and changes available in the update. The Release Notes automatically pops up over the home screen when you first launch Oracle System Assistant and after executing the Get Updates task. However, you can view the Release Notes for the current update any time you are in the Oracle System Assistant interface.

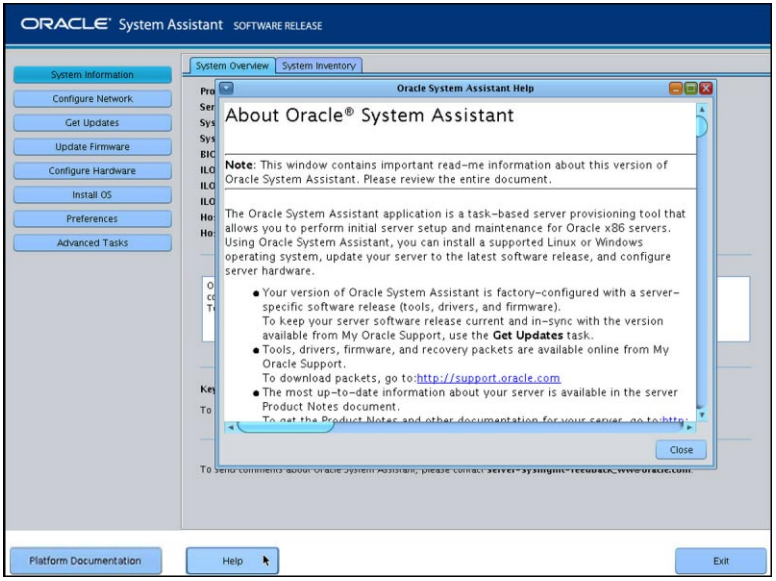
Use this procedure to view the Oracle System Assistant Release Notes for the installed platform software release.

1 **Click the System Information task button in the left side pane (ensure that the System Overview tab is selected).**

The System Overview task screen appears.

2 **Click the Help button in Help and Exit pane at the bottom of the interface.**

The Oracle System Assistant Help window appears. Scroll down to access the Release Notes.



Update Firmware

The Update Firmware task allows you to update system firmware (BIOS and Oracle ILOM SP) and hardware device firmware in the system. It is the second of a two-step process for updating the server—the first step is to perform the Get Updates task.

The Update Firmware task compares the firmware versions in the most recent platform software release download to the currently installed server system and device firmware. The task allows you to preview the changes, compare version numbers, manually select which components to update, or choose to update all firmware components. The best practice is to update all firmware components to the latest versions.

Note – Some firmware components require a server reboot immediately following a firmware update. If required, the server might automatically reboot when the update process for a particular component finishes.

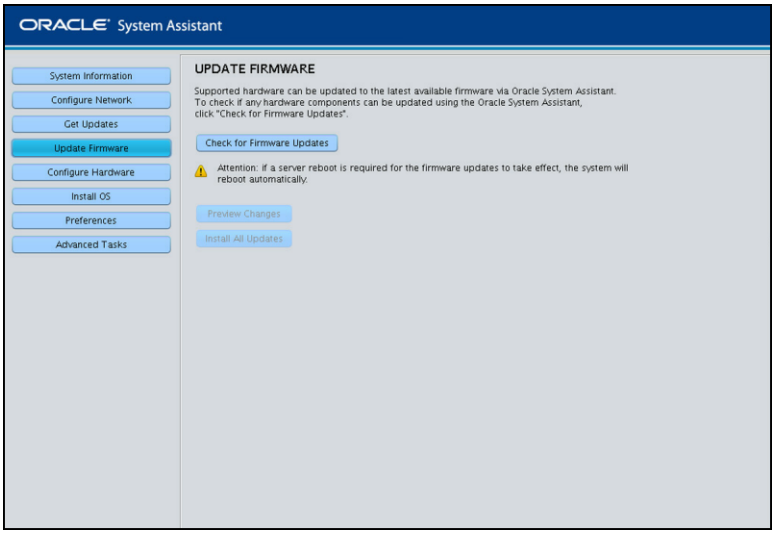
The time it takes to perform an Oracle ILOM/SP update depends on the Local Host Interconnect setting in Oracle ILOM. The quickest method is the internal Host-to-ILOM interconnect that is used by Oracle System Assistant when the Local Host Interconnect setting in Oracle ILOM is configured as host managed (true), which is the default. If the Oracle ILOM Local Host Interconnect setting is not configured as host managed, a slower method is used by Oracle System Assistant for the update.

Use this procedure to update server firmware using Oracle System Assistant.

Before You Begin Use the Get Updates task to download the most recent platform software release from Oracle before you update firmware.

1 **Click Update Firmware.**

The Update Firmware screen appears.



2 **To view the hardware components that can be updated, click the Check for Firmware Updates button.**

The Firmware Update Check progress box appears as the task polls the components and performs the firmware update check.

3 **(Optional) Click the Preview Changes button.**

The Firmware Update Install Changes dialog appears.

4 **View a list of firmware components that need updates and compare current and available version numbers.**

You can also review the Component Name, Device Name, Firmware/BIOS Installed, and Firmware/BIOS Available.

5 **To proceed, select one of the following:**

- **To perform a selective firmware update: Select the firmware updates that you want to install, and then click the Install Updates button.**

  Note – Components that are up-to-date cannot be selected.

- **To install all the firmware updates, click the Install All Updates button.**

6 **If you are prompted to log in to Oracle ILOM to perform the update, you must log in using an account with full administrator or root privileges, such as:**

- The Oracle ILOM root account.
- A user account assigned the Administrator role (which includes the `aurco` roles).
- A user account customized with the `aurco` roles.

Note – A user account with only the admin (`a`) role will not provide enough privileges to perform the update from Oracle System Assistant.

Note – If the update process proceeds *without* prompting you to log in to Oracle ILOM, a different update method is used which can take longer to complete (up to 40 minutes).

7 **Wait while the system updates the firmware.**

The update firmware progress bar appears.

Caution – Data Corruption and loss of functionality. Do not interrupt the firmware update process. A server reboot might be required for the firmware updates to take effect; if so, the system reboots automatically.

More Information

Related Information

- "Organization of Oracle System Assistant" on page 41

Oracle System Assistant Administrative Tasks

This section describes how to manage, troubleshoot, and recover the Oracle System Assistant software, and how to perform advanced administrative-level tasks.

Description	Links
Troubleshoot and verify the status Oracle System Assistant.	"Troubleshooting and Verifying Oracle System Assistant" on page 67
Perform advanced administrative Oracle System Assistant tasks, such as:	"Performing Advanced Maintenance, Security, and Configuration Tasks" on page 70

Troubleshooting and Verifying Oracle System Assistant

If Oracle System Assistant does not launch or is not available to the server (or if you are unsure whether your server has it installed), use the procedure in this section to troubleshoot and verify Oracle System Assistant. When troubleshooting or verifying Oracle System Assistant, consider the following:

- Oracle System Assistant is installed in each supported server. However, you can to opt-out of having Oracle System Assistant installed. The opt-out option occurs during the server order process.
- You launch Oracle System Assistant during the server boot up by pressing the F9 key. This necessitates that you can see and respond to the server boot prompts. You can use one of two methods to respond to server boot prompts and launch and operate Oracle System Assistant. You can launch and operate it manually while local to the server and with a KVM attached, or you can launch and operate it remotely from Oracle ILOM using the Remote Console application.
- Regardless of the launch method, a server boot is required. The server must boot into Oracle System Assistant.
- Oracle System Assistant is installed on an embedded USB drive, so it appears to both the server OS and the BIOS Setup Utility as a server storage device. You can see the device in an OS file browser or in a command-line interface, and you can to navigate to the device and browse the Oracle System Assistant file system. The device also appears in the boot device list in the BIOS Setup Utility.

- Because Oracle System Assistant resides on a physical device, you can check for the presence of the USB drive by accessing the inside of the server.
- A safety and security feature within Oracle System Assistant allows you to disable the USB drive and place it in an offline state where it is not visible or accessible to the OS, Oracle ILOM, or the BIOS Setup Utility. When the device is in this disabled state, it is not possible to launch Oracle System Assistant, and you can only enable it and bring it back online using the server BIOS Setup Utility.
- Oracle System Assistant launches if it is installed in the server, it is enabled in the BIOS Setup Utility, and it is not corrupted.
- Oracle System Assistant is not available as a download for initial installation on a server; however, if it becomes corrupted, you can recover the Oracle System Assistant image, provided it was initially installed on your server.

▼ Troubleshoot and Verify Oracle System Assistant

Your Sun Blade X3-2B supports Oracle System Assistant, and, unless you have opted out, it is preinstalled in the server. If Oracle System Assistant is not visible from the file system, or if you are unable to launch it, it could be offline, corrupted, or not installed.

Use this procedure to determine the state of Oracle System Assistant and to verify that it is installed in your server.

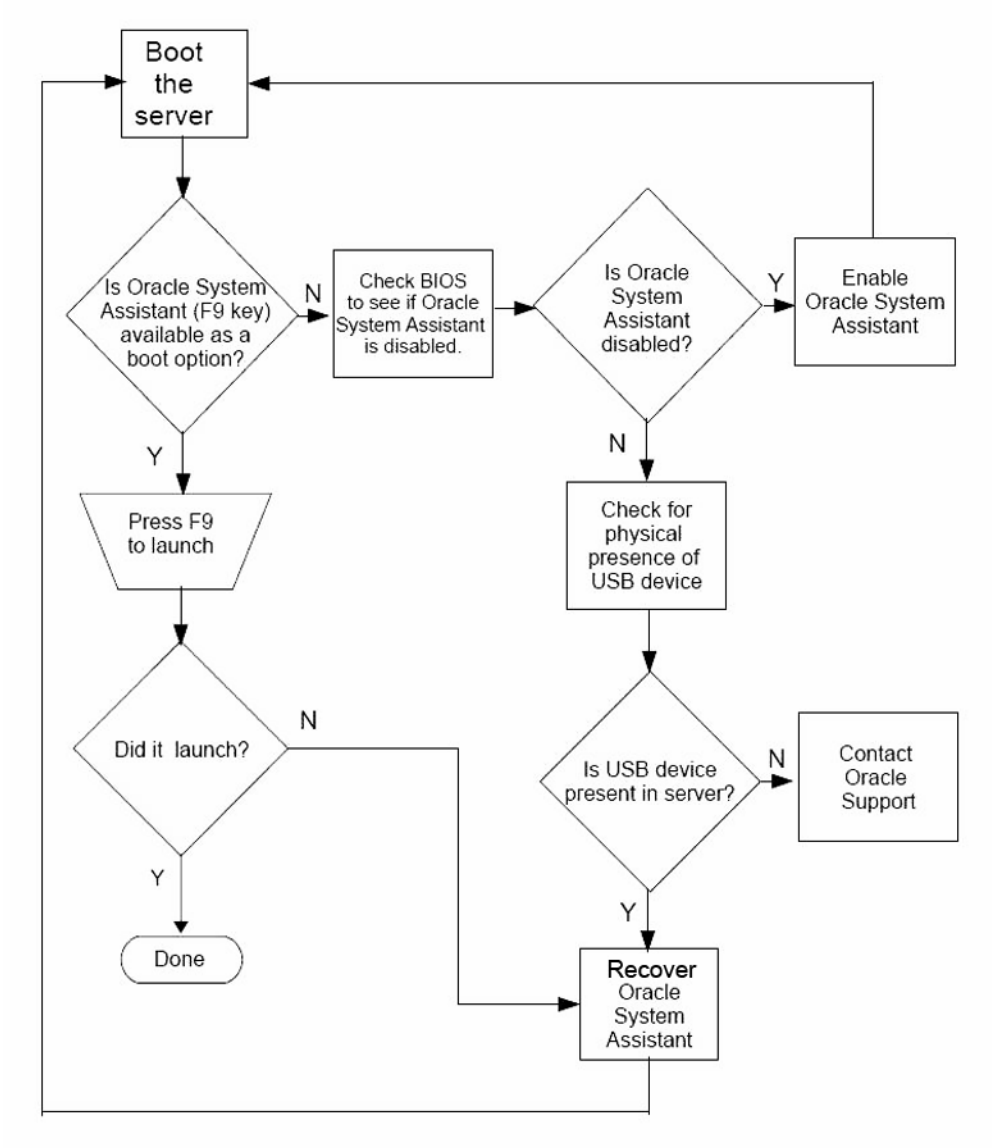
Before You Begin

- This procedure is performed locally. Physical access to the server is required.

1 Launch Oracle System Assistant.

To launch Oracle System Assistant, boot the server as described in the procedure, "Access Oracle System Assistant Locally" on page 27.

Use the following flowchart and information to guide your troubleshooting effort:



2 Does the Oracle System Assistant F9 prompt appear?

- If the Oracle System Assistant F9 prompt does *not* appear, continue to step 3 to check BIOS.

- If Oracle System Assistant F9 prompt appears, but Oracle System Assistant does not launch after pressing the F9 key, recover the Oracle System Assistant software and try again from step 1. To recover the software, see "Recover Oracle System Assistant Software" on page 71.
- Oracle System Assistant launches if it is installed in the server, it is enabled in the BIOS Setup Utility, and it is not corrupted.

3 Check the BIOS Setup Utility to see if the Oracle System Assistant USB drive is disabled.

- If the device is disabled, enable it and try again from step 1. To enable the USB drive, see "Enable (or Disable) Oracle System Assistant Using the BIOS Setup Utility" on page 78. Oracle System Assistant launches if it is installed in the server, it is enabled in the BIOS Setup Utility, and it is not corrupted.
- If the device is not disabled or not visible in the BIOS Setup Utility, go to the next step to perform a physical check of the server.

4 Perform a physical check of the server to determine if the Oracle System Assistant USB drive is physically present in the server.

This step requires that you remove the server module from the chassis and check that the internal USB port contains the Oracle System Assistant USB drive. For information about the location of the internal USB ports for your server, refer to "Servicing USB Flash Drives (CRU)" in *Sun Blade X3-2B (formerly Sun Blade X6270 M3) Service Manual*.

- If the device is present, the Oracle System Assistant software might be corrupted, and it might need to be recovered. Recover the Oracle System Assistant software and try again from step 1. To recover the software, see "Recover Oracle System Assistant Software" on page 71. Oracle System Assistant launches if it is installed in the server, it is enabled in the BIOS Setup Utility, and it is not corrupted.
- If the device is not present, contact Oracle support.

More Information Related Information

"Organization of Oracle System Assistant" on page 41

Performing Advanced Maintenance, Security, and Configuration Tasks

The procedures in this section describe advanced tasks.

TABLE 1 Advanced Maintenance, Security, and Configuration Tasks

Recover a corrupted version of Oracle System Assistant.	"Recover Oracle System Assistant Software" on page 71

TABLE 1 Advanced Maintenance, Security, and Configuration Tasks *(Continued)*

Enable the Oracle System Assistant USB drive when it is in an offline (disabled) state.	"Enable (or Disable) Oracle System Assistant Using the BIOS Setup Utility" on page 78
Protect the Oracle System Assistant USB drive from accidental erasure or overwrite by disabling it.	"Disable Oracle System Assistant Using the UI" on page 76
Access the Oracle System Assistant file system.	"Access the Firmware and Software on the Oracle System Assistant USB Flash Drive" on page 79
Mount the Oracle System Assistant USB drive from the different supported operating systems.	"Mounting the Oracle System Assistant USB Flash Drive" on page 80
Access the Oracle System Assistant shell to run Linux commands.	"Access Oracle System Assistant Shell" on page 83
Run an integrity check on the Oracle System Assistant files.	"Check Media Integrity" on page 84
Configure a subset of Oracle ILOM hardware settings.	"Configure Hardware for Oracle ILOM SP" on page 85
Back up, restore, or revert BIOS settings.	"Backup, Restore, and Revert BIOS Settings" on page 91
View the Oracle System Assistant product documentation that resides on the internal USB device from the server OS.	"View Oracle System Assistant Product Documentation From the OS" on page 93

▼ Recover Oracle System Assistant Software

If the Oracle System Assistant software has been overwritten, erased, or corrupted, you can download the recovery (updater) ISO image file that is available from the My Oracle Support (MOS) site to recover Oracle System Assistant to the USB device. Additionally, if your server does not have online access and cannot use the Get Updates task to access the MOS site, you can use the recovery file to update Oracle System Assistant to the latest version.

Note – The recover image is not intended for an initial installation of Oracle System Assistant. To acquire Oracle System Assistant for your server, contact Oracle Support.

Use this procedure to recover the Oracle System Assistant software.

Before You Begin

- Local or remote view and response access to the server boot messages is required. For more information, refer to "Cabling the Server Module" in *Sun Blade X3-2B (formerly Sun Blade X6270 M3) Installation Guide*.

1. **Review the server *Product Notes* document for issues and announcements related to Oracle System Assistant.**

2. **Download the appropriate image file from the My Oracle Support Web site.**

   Download the image that is specific to your server. The package name for the update image for the server is:
   `X6270 M3 SW` *version* `-- Oracle System Assistant`

   For example, for the Sun Blade X3-2B, you could download the update image: `Sun_Blade_X6270_M3-1.0.0.75555-ORACLE_SYSTEM_ASSISTANT_UPDATER_ 4G.iso`. This file name is an example, and you need to download the correct file.

   For information about accessing My Oracle Support and downloading this image, see "Download Firmware and Software Using My Oracle Support" on page 232.

3. **To make the update image available to the server, do one of the following:**

   - **Use the image file to burn a physical DVD image.**

     Install the DVD in a DVD drive attached to the server.

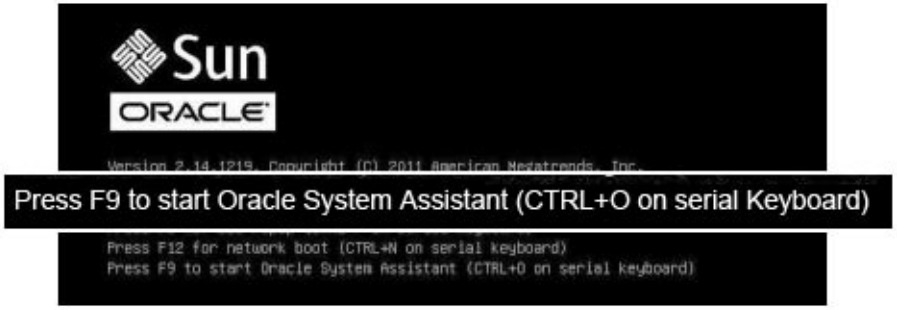
     Note – You can also make the DVD available to the server as a redirected DVD by using Oracle ILOM Remote Console application.

   - **Make the update image file available to the server as an ISO image using Oracle ILOM Remote Console application.**

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

   Choose one of the following methods:

   - **From the local server, press the Power button (approximately 1 second) on the server front panel to power off the server, and then press the Power button again to power on the server.**
   - **From Oracle ILOM Web interface, click Host Management > Power Control, and select Reset from the Select Action list box.**
   - **From Oracle ILOM CLI on the server SP, type `reset /System`.**



Note – The next events occur very quickly; therefore, focused attention is needed for the following steps. Please watch carefully for these messages as they appear only briefly on the screen.

---

5 **In the BIOS screen, press F8 to specify a temporary boot device for the Oracle System Assistant installation.**

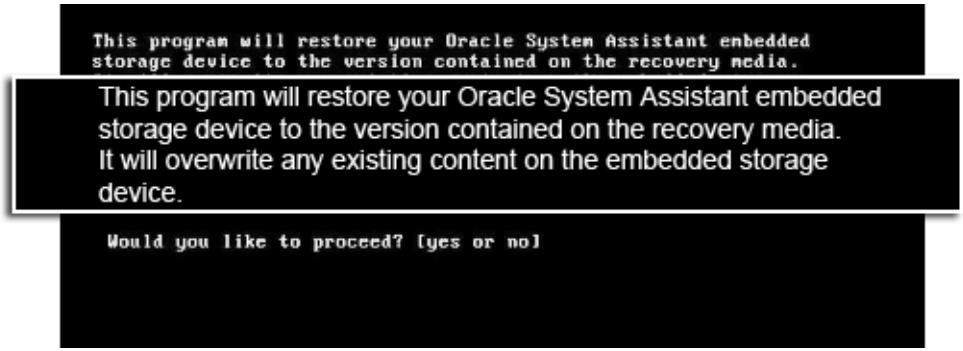
The Please Select Boot Device screen appears.

6 **Depending on the method you used to make the recovery image available to the server, perform one of the following steps:**

Note – The items listed in the Please Select Boot Device menu might differ, depending on whether the system was booted in Legacy BIOS or UEFI Boot mode.

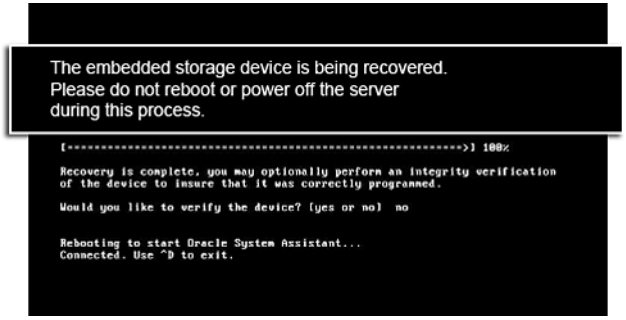
- **If you chose to burn a recovery DVD and have placed the DVD into an attached DVD drive, select `SATA:HDD:P4:TSSTcorp CDDVDW TS-T633C` as shown in the Please Select Boot Device menu, and then press `Enter`.**
- **If you chose to use Oracle ILOM Remote Console application to make the recovery image available to the server as a redirected DVD or as an ISO image, select `USB:VIRTUAL:AMI Virtual CDROM 1.00` as shown in the Please Select Boot Device menu, and then press `Enter`.**

A message appears, and a prompt asks whether you want to continue the recovery process.



7 To recover the Oracle System Assistant image, type `yes`, and then press Enter.

The following message appears, indicating the progress of the recovery process. Do *not* interrupt the recovery process.



When the recovery process is finished, you have the option to verify the integrity of the files on the USB drive.

8 At the verification prompt, do one of the following:

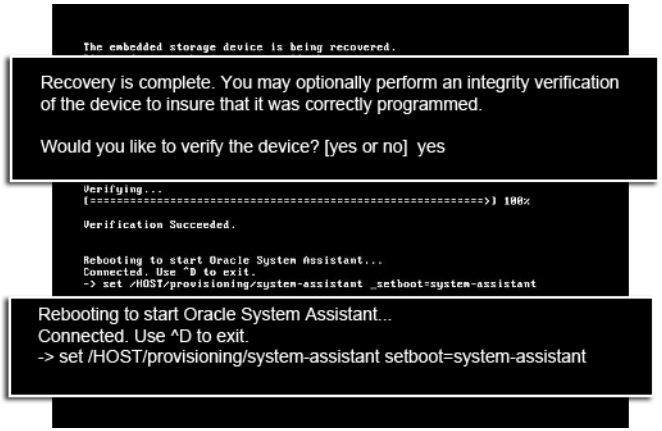
The following screen appears and indicates that the Oracle System Assistant USB device was verified successfully. The system then reboots and launches the Oracle System Assistant application.

- **To skip a verification of the USB drive, type `no`, and then press Enter.**

  The server boots to Oracle System Assistant.

- **To verify the USB drive, type yes, and press Enter.**

  The verification process starts. When the task is finished, the server boots to Oracle System Assistant.



More Information Next Steps

- "Setting Up Oracle System Assistant and Updating the Server" on page 41

▼ Disable Oracle System Assistant Using the UI

If you are already booted into the Oracle System Assistant UI, you can use the Disable Oracle System Assistant task to put the Oracle System Assistant USB device in an offline state, so that it is unavailable to the server operating system (OS). This protects the device from accidental erasure and overwrite. When the device is offline, it is not bootable, and the tools, drivers, and files that reside on the Oracle System Assistant device are inaccessible.

Note – To re-enable Oracle System Assistant, perform "Enable (or Disable) Oracle System Assistant Using the BIOS Setup Utility" on page 78.

To put the USB device in an online state (available to the OS), use the Configure OSA setting in the server BIOS Setup Utility Boot menu.

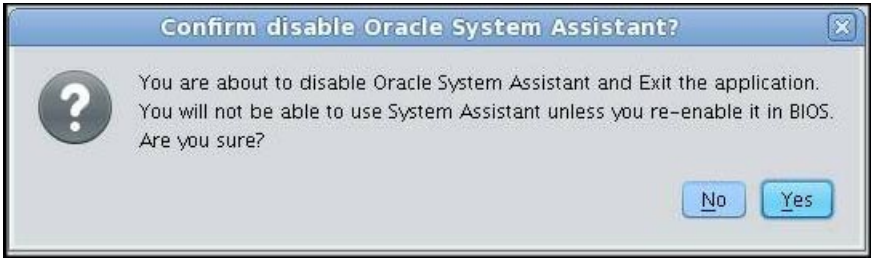
Use this procedure to disable the USB device from within Oracle System Assistant.

1. **Click Preferences, and then click the Disable Oracle System Assistant tab.**

   The Disable Oracle System Assistant screen appears.

2. **Click Disable Oracle System Assistant.**

3. **To confirm, click Yes .**



Note – The system reboots.

More Information

Related Information

- "Organization of Oracle System Assistant" on page 41
- "Configuring the UEFI BIOS Boot Mode" on page 123
- "Enable (or Disable) Oracle System Assistant Using the BIOS Setup Utility" on page 78

▼ Enable (or Disable) Oracle System Assistant Using the BIOS Setup Utility

To enable the Oracle System Assistant USB device and place it in an online state (accessible, available to the OS, and boot capable), use the Configure OSA setting in the server BIOS Setup Utility Boot menu.

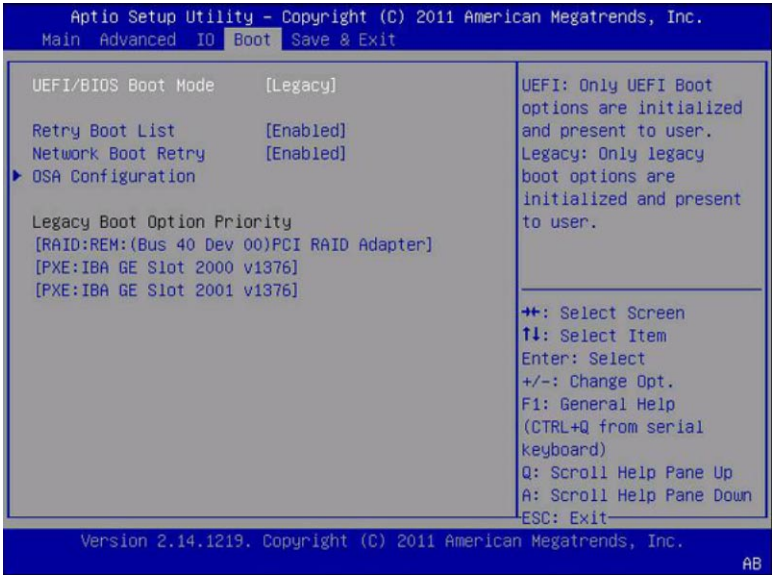
You can also use the server BIOS Setup Utility to disable the USB device, which places it in an offline state, so it is unavailable to the server OS and not bootable. This protects the device from accidental erasure and overwrite. However, when the device is offline, it is not bootable, and the tools, drivers, and files that reside on the Oracle System Assistant device are inaccessible. You can also disable (but not enable) the device from within Oracle System Assistant (see "Disable Oracle System Assistant Using the UI" on page 76).

Use this procedure to enable (or disable) the Oracle System Assistant USB device from the BIOS Setup Utility.

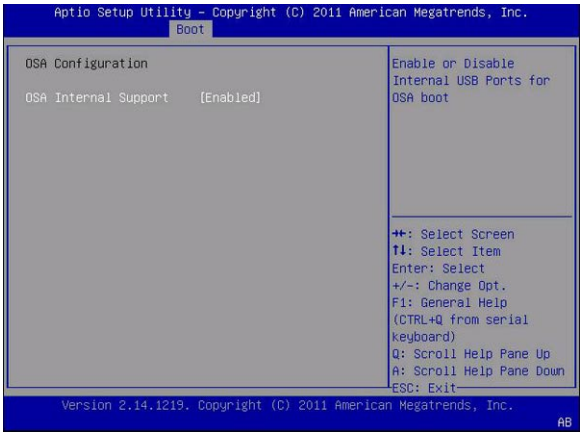
1 Access the server BIOS Setup Utility.

See "Access BIOS Setup Utility Menus" on page 115.

2 Navigate to the Boot screen.



3 **Navigate to the OSA Configuration screen.**



4 **Select Enabled (or Disabled) for the OSA Internal Support setting.**

Press Enter.

5 **To save and exit the BIOS utility, press F10.**

The server boots.

More Information Related Information

- "Setting Up the Server With BIOS Setup Utility" on page 115

▼ Access the Firmware and Software on the Oracle System Assistant USB Flash Drive

The Oracle System Assistant USB flash drive contains firmware and software for your server. The USB flash drive is accessible through the OS or virtual machine software file system. You can update firmware and software by using the Oracle System Assistant Get Updates task.

Use this procedure to access and view the firmware and software that resides on the Oracle System Assistant USB flash drive.

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

2 **If necessary, mount the Oracle System Assistant USB flash drive.**

For OS specific mounting instructions, see "Mounting the Oracle System Assistant USB Flash Drive" on page 80.

3. **Use a file system browser to navigate to the internal Oracle System Assistant USB flash drive.**

   The label for the USB flash drive is: ORACLE SSM on Oracle VM operating system, and ORACLE_SSM on the Oracle Solaris 10 operating system and Linux operating systems.

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

   The Oracle System Assistant USB flash drive directory appears and lists the contents of the drive.

Mounting the Oracle System Assistant USB Flash Drive

Before you can access the Oracle System Assistant USB Flash drive on the Oracle VM 3.0, Oracle Solaris 10 and Linux operating systems, you must first mount the USB flash drive.

Note – Currently you cannot directly mount the Oracle System Assistant 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.

Choose one of the following procedures to mount the Oracle System Assistant USB Flash drive:

- "(Oracle VM 3.0) Mount the Oracle System Assistant USB Flash Drive" on page 80
- "(Linux OS) Mount the Oracle System Assistant USB Flash Drive" on page 81
- "(Oracle Solaris 10 OS) Mount the Oracle System Assistant USB Flash Drive" on page 82

Related Information

- "Access the Firmware and Software on the Oracle System Assistant USB Flash Drive" on page 79
- "Accessing System Management Tools" on page 27

▼ (Oracle VM 3.0) Mount the Oracle System Assistant USB Flash Drive

1. **Connect to your Oracle VM 3.0 server as the root user.**

2. **To determine the device mapping of the Oracle System Assistant 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 SSDSA2BZ30     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 Oracle System Assistant 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 Oracle System Assistant 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)
```

4 **(Optional) Create a mount point to use when mounting the Oracle System Assistant USB flash drive.**

For example:

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

5 **To mount the Oracle System Assistant 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 Oracle System Assistant USB flash drive is now mounted at the `mount` location specified.

▼ (Linux OS) Mount the Oracle System Assistant USB Flash Drive

If the server is running a Linux operating system, you must mount the Oracle System Assistant USB flash drive before you use the filesystem to display or access its contents.

Use this procedure to mount the Oracle System Assistant USB flash drive on a Linux operating system.

- **To mount the Oracle System Assistant USB flash drive, enter the commands shown below:**

```
#>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 Oracle System Assistant USB flash drive is now mounted at the location specified.

▼ (Oracle Solaris 10 OS) Mount the Oracle System Assistant USB Flash Drive

If the server is running the Oracle Solaris 10, you must mount the Oracle System Assistant USB flash drive before you use the filesystem to display or access its contents.

Use this procedure to mount the Oracle System Assistant USB flash drive on an Oracle Solaris 10 Operating System.

1. **To turn off the volfs service, type:**

```
# svcadm disable volfs
```

2. **To identify the USB flash drive, type:**

```
# 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. **To manually mount the USB flash drive, read-only, type:**

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

4. **To retrieve the Oracle Solaris 10 content, type:**

```
# cd /mnt/Solaris

# ls
```

The system displays:

```
10U10 11
#
```

5. **To unmount the OSA device, type:**

```
# cd /

# umount /mnt
```

6. **To restart volfs, type:**

```
# svcadm enable volfs
```

The Oracle System Assistant USB flash drive is now mounted.

▼ Access Oracle System Assistant Shell

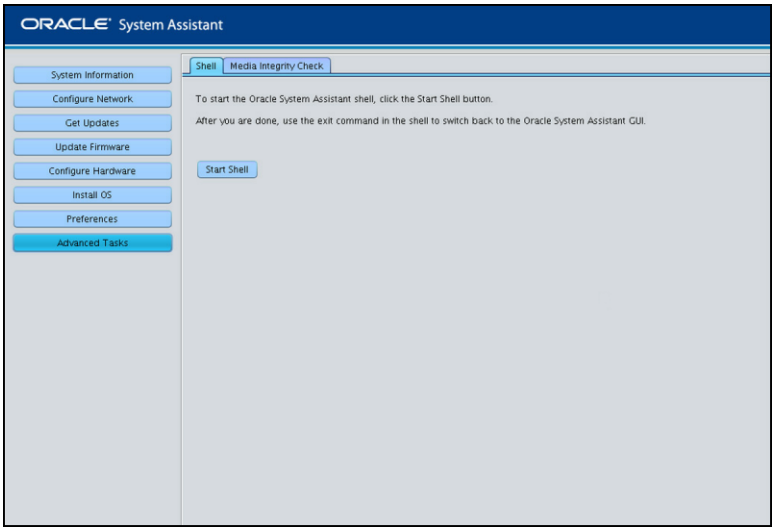
The Shell task provides command-line root-level (Linux) access to the Oracle System Assistant file system when Oracle System Assistant is running. It opens a terminal window. You might need to use the command-line shell to run commands and access tools and files that reside on the internal Oracle System Assistant USB device.

Caution – Possible loss of data or loss of Oracle System Assistant functionality. Only advanced users or system administrators should access and use the Linux shell.

Use this procedure to access the command-line shell using Oracle System Assistant.

1. **Click Advanced Tasks, and then click the Shell tab.**

   The Shell screen appears.



2. **Click the Start Shell button.**

   The Oracle System Assistant command-line shell window appears.

3. **To leave the shell and return to Oracle System Assistant user interface, type `exit` at the shell command-line prompt.**

More Information Related Information

- "Organization of Oracle System Assistant" on page 41

▼ Check Media Integrity

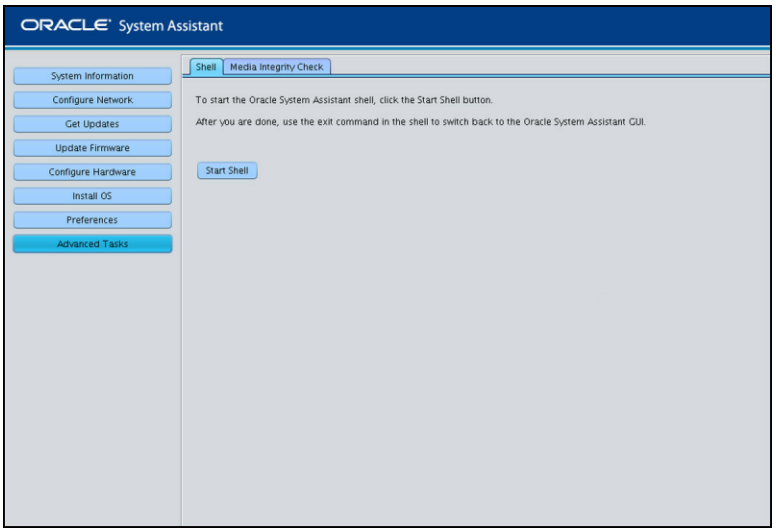
The Media Integrity Check task verifies the integrity of the internal Oracle System Assistant media files and displays a report. You should perform this task when the USB device produces errors or when requested by Oracle Service personnel.

If your version of Oracle System Assistant is damaged, download the recovery ISO image file for your server from the My Oracle Support site. For more information, see "Recover Oracle System Assistant Software" on page 71.

Use this procedure to verify that the USB media for Oracle System Assistant is working properly.

1 **Click Advanced Tasks, and then click the Media Integrity Check tab.**

The Media Integrity Check screen appears.



2 **Click the Check Integrity button.**

The system tests the internal Oracle System Assistant USB device and generates a report. The test provides an estimated run time. You can cancel the test at any time.

More Information Related Information

- "Recover Oracle System Assistant Software" on page 71
- "Organization of Oracle System Assistant" on page 41

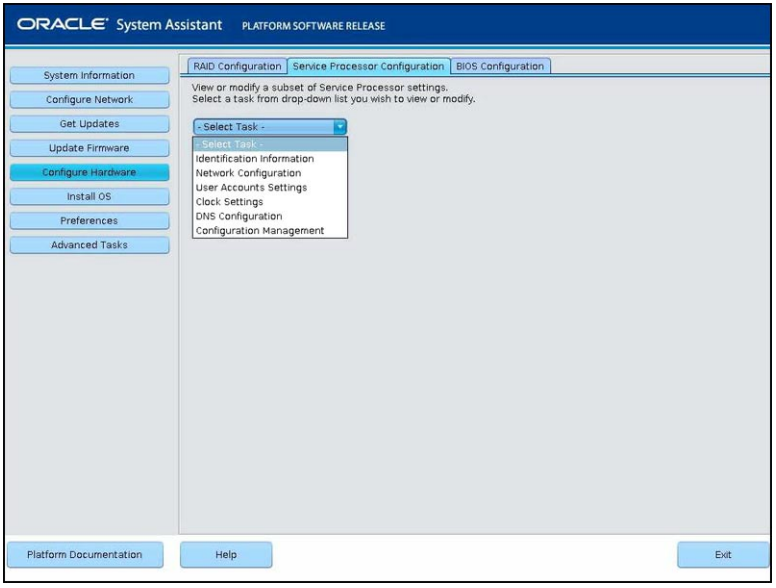
▼ Configure Hardware for Oracle ILOM SP

Oracle System Assistant allows you to view or modify a subset of Oracle ILOM settings, such as identification information, network configuration, user accounts, system clock, and DNS.

Use this procedure to view and modify Oracle ILOM settings from Oracle System Assistant.

1 **Click Configure Hardware, and then click the Service Processor Configuration tab.**

The Server Processor Configuration screen appears.



2 **From the Select Task drop-down list, select a task:**

- **Identification Information**— See Step 3.
- **Network Configuration**— See Step 4.
- **User Account Settings**— See Step 5.
- **Clock Settings**— See Step 6.
- **DNS Configuration**— See Step 7.
- **Configuration Management**— See Step 8.

3 **View or modify the following identification information:**

a. **SP Hostname**

Type Oracle ILOM hostname.

The hostname must start with a letter and can contain up to 60 alphanumeric characters, hyphens, and underscores.

b. **System Identifier**

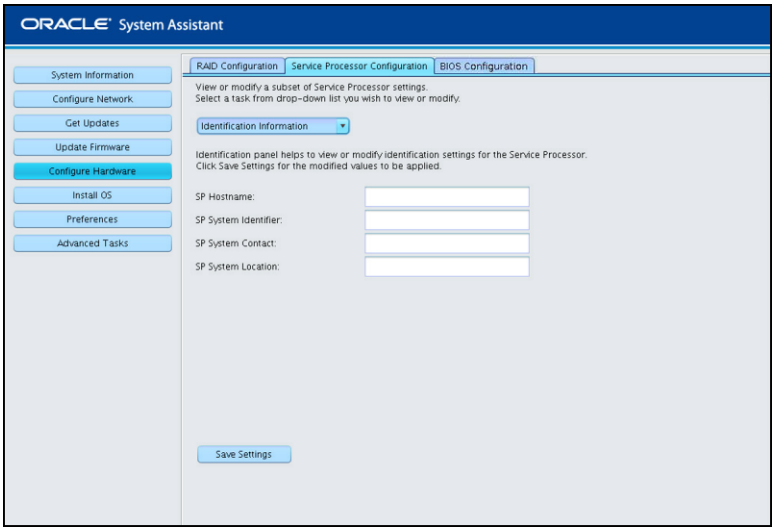
Type the name that identifies the system. Use any characters except quotation marks.

c. SP System Contact

Type the name of the person to contact. Use any characters except quotation marks.

d. SP System Location

Type the name of the physical location of the system. Use any characters except quotation marks.



4 To view or modify the following network configuration information for IPv4 or IPv6:

a. IP Discovery Mode

Select whether the system uses Dynamic Host Control Protocol (DHCP) or a static IP assignment.

b. IP Address

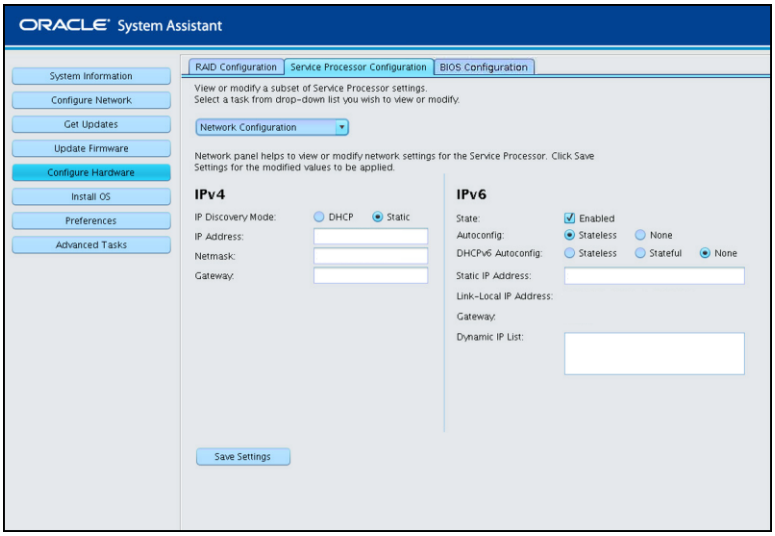
If you selected a static IP assignment, provide the IP address of the SP.

c. Netmask

If you selected a static assignment, provide the netmask for the SP.

d. Gateway

If you selected a static assignment, provide the gateway address of the SP.



5 To view or modify the following user accounts information:

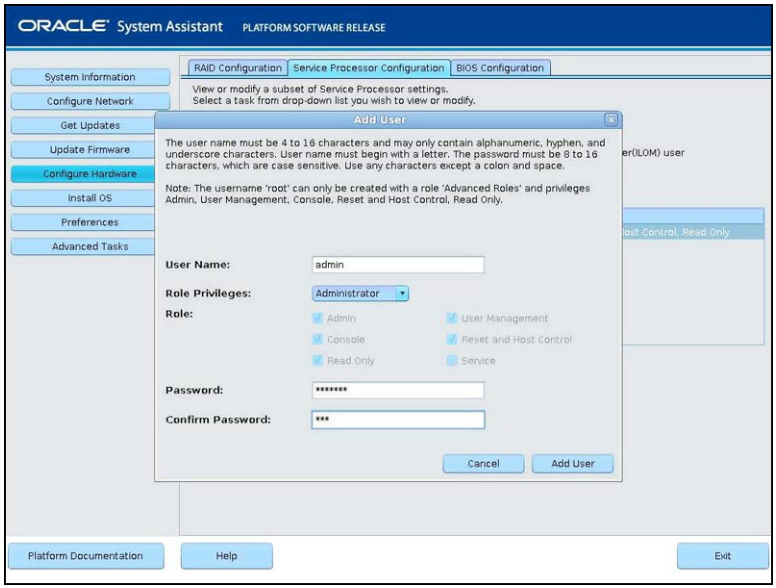
Note – Oracle System Assistant does not support the creation of a user account with the user name, "user." However, Oracle ILOM supports the creation of an account named as such, and while such an account can be viewed in Oracle System Assistant, it cannot be modified or deleted. If you need to create or manage this account, use Oracle ILOM.

---

a. Add User

Click to add a new user account. Type a unique user name, select the role (Basic or Advanced) from the drop-down list, set privileges, and type the password.

Note – If you want to choose specific privileges (not pre-set) for the user, choose Advanced.



b. Modify User

Highlight a user account in the list, and click Modify User to review or change the user account settings.

c. Delete User

Highlight a user account in the list, and click Delete User to delete a user account.

6 View or modify the following clock settings:

a. Date

Use the drop-down list to select the month, day, and year.

b. Time

Use the drop-down list to set the time using 24-hour format.

c. Timezone

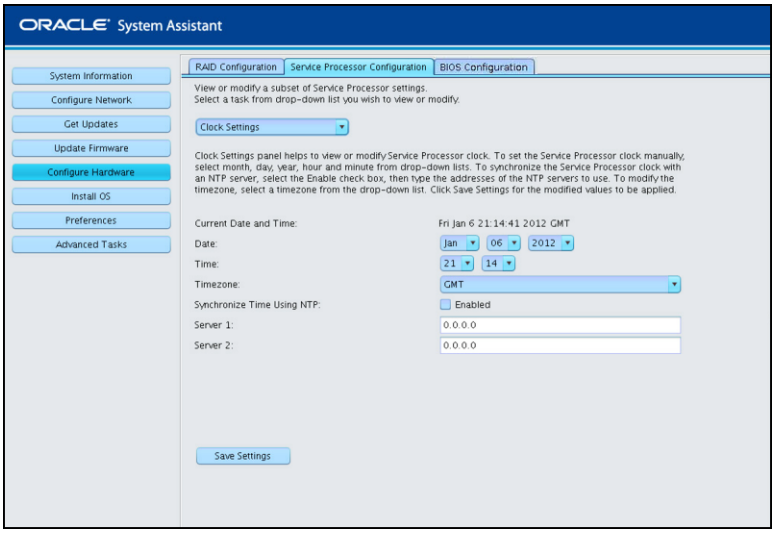
Use the drop-down list to select the time zone.

d. Synchronize Time Using NTP

Click the check box to enable synchronization with a Network Time Protocol (NTP) server.

e. Server 1, Server 2

Enter the information for the NTP servers.



7 View or modify the following DNS Settings:

a. Auto DNS via DHCP

Check enabled or disabled.

b. DNS Name Server

Edit this only if Auto DNS is disabled.

Enter up to three comma separated name server IP addresses in preferred order, for example: 1.2.3.4,5.6.7.8.

c. DNS Search Path

Edit this only if Auto DNS is disabled.

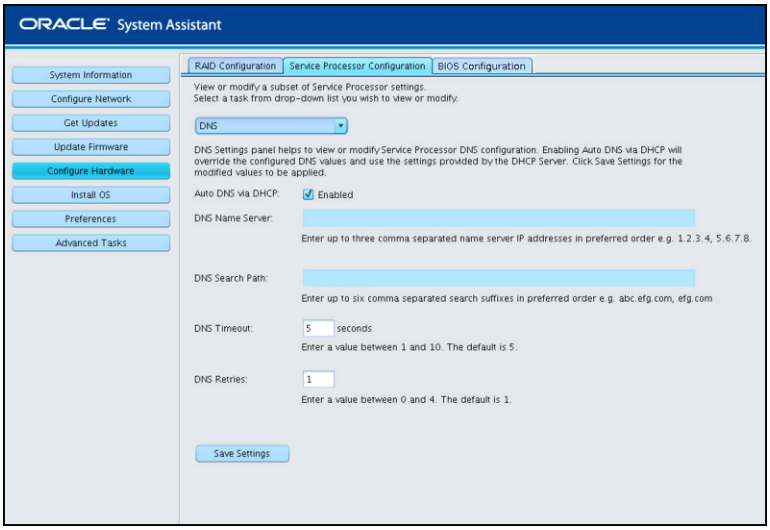
Enter up to six comma separated search suffixes in preferred order, for example: abc.efg.com, efg.com.

d. DNS Timeout

Enter a value between 1 and 10. The default is 5.

e. DNS Retries

Enter a value between 0 and 4. The default is 1.



8 **Restore or delete the SP configuration using the following options:**

- **None: Nullifies previously applied option if a SP reset has not occurred.**
- **All: Delete all the SP configuration information at next SP reset.**
- **Factory: Restore SP configuration to the factory-loaded (default) values including deleting all log files at next SP reset.**

9 **Click Save Settings.**

More Information Related Information

- "Organization of Oracle System Assistant" on page 41
- Oracle ILOM 3.1 Documentation Collection

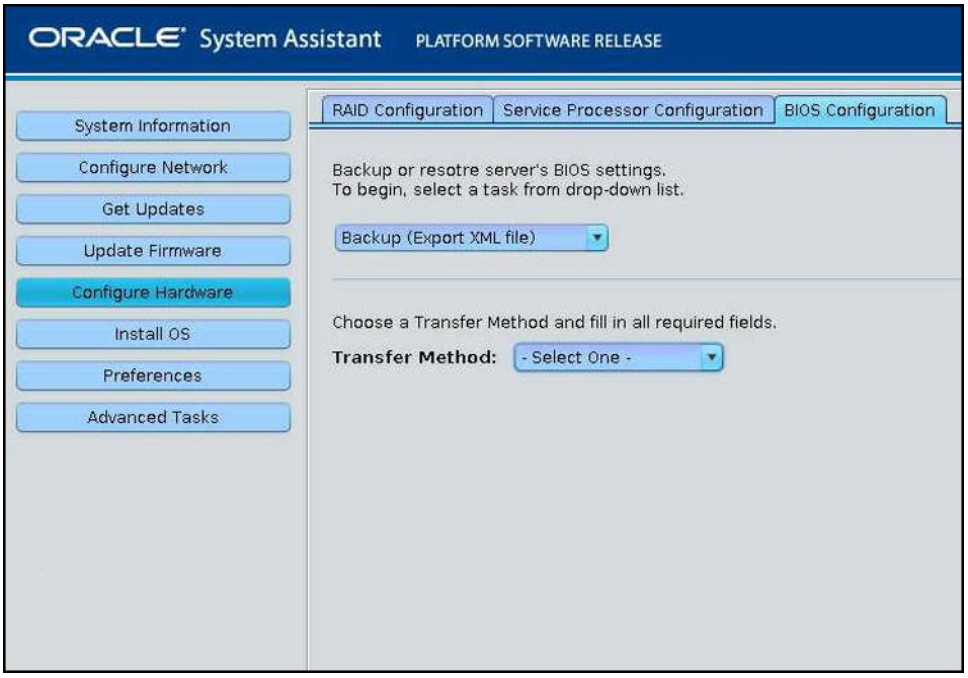
▼ Backup, Restore, and Revert BIOS Settings

The BIOS Configuration task allows you to back up and restore customized server BIOS settings. You can back up and restore to and from an XML file. You can also restore the server to the factory default settings.

Use this procedure to access the BIOS setting backup, restore, and revert screen.

1 **Click the Configure Hardware task button.**

2 **Click the BIOS Configuration tab.**



3 **Select a backup or restore option.**

The back up and restore options:

- Backup (Export XML file)
- Restore (Import XML file)
- Restore to Factory Settings

4 **For the backup option and the restore (from XML file) option, select a transfer method; to restore to factory settings, click the Factory radio button.**

The transfer method options for backup:

- Local drive
- TFTP
- FTP
- SFTP
- SCP
- HTTP
- HTTPS

The transfer method option for restore:

- Local drive

5. **For the file-based options, browse for a location.**

6. **For the file-based options, click Run; for the restore to factory option, click Apply.**
   Changes to BIOS settings are applied during the next server boot.

View Oracle System Assistant Product Documentation From the OS

The Oracle System Assistant USB drive contains HTML topic-based product documentation for your server that you can access and view form within the Oracle System Assistant UI. However, you can also access and view the documentation offline (while not in the UI) using the server's file browser.

Note – The latest and most up-to-date documentation for your server also is available online at the server documentation library page at:
`http://www.oracle.com/pls/topic/lookup?ctx=SunBladeX3-2B`

Use this procedure to access the HTML user documentation that resides on the Oracle System Assistant USB drive:

Before You Begin To view the documentation, you need a Web browser or an HTML viewer.

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

2. **Use a file system browser to navigate to the internal Oracle System Assistant USB device.**
   The label for the device is: `ORACLE_SSM`

Note – If the USB device is not visible, "Troubleshooting and Verifying Oracle System Assistant" on page 67.

---

3. **Navigate to the `/Documentation` directory.**
   The Documentation directory is at the top level on the USB device.

4. **To view the library page, right-click the `index.html` file and select `Open With....`**

5. **View documentation using an HTML viewer or browser.**
   The documentation library page appears.

Setting Up Software and Firmware

This section includes information about using Oracle System Assistant, Oracle ILOM, and Oracle Hardware Management Pack to set up the server software and firmware.

In most cases, use Oracle System Assistant to set up your server's software and firmware. If your server does not have Oracle System Assistant embedded in it, or you do not want to use Oracle System Assistant, you can set up the server's software and firmware using either Oracle ILOM or Oracle Hardware Management Pack.

The following topics are covered.

Description	Links
Set up software and firmware using Oracle System Assistant. (recommended)	"Set Up Software and Firmware Using Oracle System Assistant" on page 95
Set up software and firmware using Oracle ILOM.	"Set Up Software and Firmware Using Oracle ILOM" on page 96
Set up software and firmware using Oracle Hardware Management Pack.	"Set Up Software and Firmware Using Oracle Hardware Management Pack" on page 98

▼ Set Up Software and Firmware Using Oracle System Assistant

1 **Connect to Oracle System Assistant.**

See "Access Oracle System Assistant Remotely" on page 30.

2 **Perform setup tasks using Oracle System Assistant.**

See "Setting Up Oracle System Assistant and Updating the Server" on page 41.

a. **Configure the server network settings.**

See "Configure Network Settings" on page 48.

b. Get updates for the server firmware, drivers, software, and documentation.

See "Get Updates of Platform Software Release" on page 59.

c. Update the server firmware.

See "Update Firmware" on page 64.

Note – To upgrade an HBA expander firmware from the chassis CMM or the host, use the Hardware Management Pack application `fwupdate`.

---

d. Configure the server SP network settings, user accounts, and clock settings.

See "Configure Hardware for Oracle ILOM SP" on page 85.

e. Configure RAID.

See "Configure Hardware for RAID" on page 50

f. Install an operating system.

See "Install an Operating System" on page 53

More Information Related Information

- "Setting Up Oracle System Assistant and Updating the Server" on page 41

▼ Set Up Software and Firmware Using Oracle ILOM

1 Ensure that the server is in standby mode, and that firmware uploading is not in progress.

When the server is in standby mode, the Power/OK LED blinks slowly (approximately every three seconds), and the host is powered off.

2 Connect to Oracle ILOM.

For instructions, see "Access Oracle ILOM " on page 35 and, for more information, refer to the *Sun Blade X3-2B (formerly Sun Blade X6270 M3) Installation Guide*.

3 Apply full power to the server. Do one of the following:

- Use Oracle ILOM Web interface: On the System Information > Summary screen, next to Power State, click Turn On.
- Use Oracle ILOM command-line interface (CLI): From the server SP CLI, type `start /System`.

Refer to "Powering On the Server Module" in *Sun Blade X3-2B (formerly Sun Blade X6270 M3) Service Manual*.

4. **Verify that the Power/OK LED on the front panel of the server illuminates a steady-on green light after the server has successfully powered on.**

   A steady-on green Power/OK LED light indicates that the host is fully booted into an OS, and is ready for normal operation.

   Refer to "Front Panel LEDs and Buttons" in *Sun Blade X3-2B (formerly Sun Blade X6270 M3) Service Manual*.

5. **Update Oracle ILOM and BIOS.**

   Refer to Oracle ILOM 3.1 Documentation Collection.

6. **Configure Oracle ILOM.**

   Refer to Oracle ILOM 3.1 Documentation Collection.

7. **Perform additional setup tasks that are not available from Oracle ILOM.**

   a. **Update disk expander or HBA firmware.**

      Refer to "Server Features" in *Sun Blade X3-2B (formerly Sun Blade X6270 M3) Installation Guide*.

   b. **Configure RAID.**

      See "Configuring RAID" on page 111.

   c. **Install an operating system, or configure a pre-installed operating system.**

      Refer to:

      - *Sun Blade X3-2B (formerly Sun Blade X6270 M3) Installation Guide for the Oracle Solaris Operating System*
      - *Sun Blade X3-2B (formerly Sun Blade X6270 M3) Installation Guide for Linux Operating Systems*
      - *Sun Blade X3-2B (formerly Sun Blade X6270 M3) Installation Guide for Oracle VM Server*
      - *Sun Blade X3-2B (formerly Sun Blade X6270 M3) Installation Guide for Windows Operating Systems*
      - *Sun Blade X3-2B (formerly Sun Blade X6270 M3) Installation Guide for ESX Software*

More Information

Related Information

- "Front Panel LEDs and Buttons" in *Sun Blade X3-2B (formerly Sun Blade X6270 M3) Service Manual*
- *Sun Blade X3-2B (formerly Sun Blade X6270 M3) Installation Guide*
- Oracle ILOM 3.1 Documentation Collection

▼ Set Up Software and Firmware Using Oracle Hardware Management Pack

Before You Begin This procedure assumes that you have:

- Installed the operating system.
- Optionally configured RAID. See "Configuring RAID" on page 111.
- Installed Oracle Hardware Management Pack. See "Access Oracle Hardware Management Pack From Oracle System Assistant" on page 39.

1 If not already done, connect to the server.

For instructions, refer to the *Sun Blade X3-2B (formerly Sun Blade X6270 M3) Installation Guide*.

2 If the server is not powered on, press the Power button on the server front panel to power on the server to full power mode.

The Power/OK LED on the front panel of the server illuminates a steady-on green light after the server has successfully powered on, indicating that the host is ready for normal operation.

Refer to "Front Panel LEDs and Buttons" in *Sun Blade X3-2B (formerly Sun Blade X6270 M3) Service Manual*.

3 Install or configure the host operating system, and install any needed drivers.

Refer to the OS installation guide for the operating system you want to install.

- *Sun Blade X3-2B (formerly Sun Blade X6270 M3) Installation Guide for the Oracle Solaris Operating System*
- *Sun Blade X3-2B (formerly Sun Blade X6270 M3) Installation Guide for Linux Operating Systems*
- *Sun Blade X3-2B (formerly Sun Blade X6270 M3) Installation Guide for Oracle VM Server*
- *Sun Blade X3-2B (formerly Sun Blade X6270 M3) Installation Guide for Windows Operating Systems*
- *Sun Blade X3-2B (formerly Sun Blade X6270 M3) Installation Guide for ESX Software*

4 If not already installed, install Oracle Hardware Management Pack.

Refer to the instructions at the following site: `http://www.oracle.com/goto/system-management`.

5 Update Oracle ILOM and BIOS firmware.

Use the Oracle Hardware Management Pack`fwupdate` tool.

Note – Alternate methods to update ILOM and BIOS firmware include: Oracle System Assistant, Oracle ILOM (CLI and Web browser), and ipmiflash.

6 **Configure Oracle ILOM.**

Use the Oracle Hardware Management Pack `ilomconfig` tool.

Note – Alternate methods to configure Oracle ILOM include: Oracle System Assistant, and Oracle ILOM (CLI and Web browser).

7 **(Optional) Configure BIOS.**

Use the Oracle Hardware Management Pack `ubiosconfig` tool.

Note – Alternate methods to configure BIOS firmware include: Oracle System Assistant, and Oracle ILOM (CLI and Web browser).

8 **(Optional) Explore and configure RAID.**

Use the Oracle Hardware Management Pack `raidconfig` tool.

Note – Alternate methods to configure RAID include: Oracle System Assistant, Oracle ILOM (CLI and Web browser), the LSI MSM application, and the LSI HBA BIOS Utilities (WebBIOS, configuration utility, Megacli, sas2ircu).

9 **Query, update, and validate firmware versions on supported SAS storage drives, embedded SAS storage controllers, LSI SAS storage expanders, and storage drives.**

Use the Oracle Hardware Management Pack `fwupdate` tool.

See Also

- Oracle Hardware Management Pack Documentation Library (`http://www.oracle.com/pls/topic/lookup?ctx=ohmp`)
- *Sun Blade X3-2B (formerly Sun Blade X6270 M3) Installation Guide*
- `http://www.oracle.com/goto/system-management`
- *Sun Blade X3-2B (formerly Sun Blade X6270 M3) Installation Guide for the Oracle Solaris Operating System*
- *Sun Blade X3-2B (formerly Sun Blade X6270 M3) Installation Guide for Linux Operating Systems*
- *Sun Blade X3-2B (formerly Sun Blade X6270 M3) Installation Guide for Oracle VM Server*
- *Sun Blade X3-2B (formerly Sun Blade X6270 M3) Installation Guide for Windows Operating Systems*
- *Sun Blade X3-2B (formerly Sun Blade X6270 M3) Installation Guide for ESX Software*

- *Sun Blade X3-2B (formerly Sun Blade X6270 M3) Service Manual*

Managing Server Policies Using Oracle ILOM

You can use Oracle Integrated Lights Out Manager (Oracle ILOM) to set management policies for the Sun Blade X3-2B.

The following topics are covered.

Description	Link
Review service processor power-on policies.	"Service Processor Power-On Policies" on page 104
Configure management policies using Oracle ILOM Web interface.	"Configure Management Policies Using Oracle ILOM Web Interface" on page 108
Configure management policies using Oracle ILOM CLI interface.	"Configure Management Policies Using Oracle ILOM CLI" on page 109
For the following tasks refer to Oracle ILOM 3.1 Documentation Collection	Oracle ILOM 3.1 Documentation Collection
— Configure the server hardware.	
— Set power-on policies for the server.	
— Set cooling policies for the server.	
— Monitor hardware errors and faults as they occur.	
— Send events using SNMP traps or email alerts when faults occur.	
— Remotely control the power state of the server.	

Related Information

- "Access Oracle ILOM Using a Web Browser" on page 36
- "Access Oracle ILOM Using CLI" on page 37
- Oracle ILOM 3.1 Documentation Collection (`http://www.oracle.com/pls/topic/lookup?ctx=ilom31`)
- "Identifying Hardware Components and SNMP Messages" on page 213

Oracle ILOM Features

Oracle ILOM offers a full set of features, functions, and protocols that you can use to monitor and manage Oracle Sun servers. Some Oracle ILOM features include:

- Browser-based Web interface and SSH command-line interface
- Downloadable firmware updates
- Remote hardware monitoring
- Hardware field-replaceable unit inventory and presence detection
- Remote keyboard, video, mouse, and storage (KVMS) redirection
- System power control and monitoring
- Configuration and management of user accounts
- Error and fault management
- System alerts, including SNMP traps, IPMI PETs, remote syslog, and email alerts

Oracle ILOM 3.1 Documentation

For complete information about these Oracle ILOM features, and for information about how to perform procedures using Oracle ILOM, refer to Oracle ILOM 3.1 Documentation Collection (`http://www.oracle.com/pls/topic/lookup?ctx=ilom31`).

The Oracle ILOM 3.1 Documentation Collection includes the following documents:

- *Oracle ILOM 3.1 Quick Start Guide*
- *Oracle ILOM 3.1 User Guide*
- *Oracle ILOM 3.1 Configuration and Maintenance Guide*
- *Oracle ILOM 3.1 Feature Updates and Release Notes*
- *Oracle ILOM 3.1 Management Protocols Reference*
- *Oracle ILOM 3.1 Basic CLI Command Reference*

Oracle ILOM Features for x86 Sun Servers

The Sun Blade X3-2B supports all standard features in Oracle Integrated Lights Out Manager (Oracle ILOM) 3.1 firmware. In addition, Oracle ILOM 3.1 provides features that are designed specifically for x86 Sun servers.

The following table identifies Oracle ILOM 3.1 features and functions that are specific to, and supported on, x86 Sun servers. For complete information about these features and functions, refer to the documents in Oracle ILOM 3.1 Documentation Collection.

Oracle ILOM 3.1 Feature	For Complete Information and Procedures, See:
Sideband management	Setting Up a Management Connection to Oracle ILOM in *Oracle ILOM 3.1 Configuration and Maintenance Guide*
Power Management Policies	"Power Management Policies Supported" on page 104
	Supported Power Management Policies:
	Modify Power State on Managed Device in *Oracle ILOM 3.1 Configuration and Maintenance Guide*
	Note – Features not Supported in Oracle ILOM 3.1 for x86 Sun servers are:
	Modify Power Management Policy on Managed Device in *Oracle ILOM 3.1 Configuration and Maintenance Guide*
	Real-Time Power Monitoring Through Oracle ILOM Interfaces in *Oracle ILOM 3.1 User's Guide*
Diagnostics using Pc_Check and nonmaskable interrupt	Troubleshooting Oracle ILOM Managed Devices in *Oracle ILOM 3.1 User's Guide*
	Performing Pc-Check Diagnostics Tests in *Oracle x86 Servers Diagnostics Guide for Servers With Oracle ILOM 3.1*
Control next boot device	Modify Next Boot Device on x86 Managed System in *Oracle ILOM 3.1 Configuration and Maintenance Guide*
FRU top-level indicator auto-update	"FRU TLI Auto-Update" on page 106
Switch serial port output to host management console	Switch Serial Port Management Output to Host Serial Console in *Oracle ILOM 3.1 Configuration and Maintenance Guide*.
Back up and restore BIOS configuration	Manage x86 BIOS Configuration Parameters in *Oracle ILOM 3.1 Configuration and Maintenance Guide*
Administer open problems and clear server faults	Administering Open Problems in *Oracle ILOM 3.1 User's Guide*
	Managing Sun Hardware Faults Through the Oracle ILOM Fault Management Shell in *Oracle ILOM 3.1 User's Guide*

Sideband Management

The sideband management feature is one of four ways you can establish a management connection to Oracle ILOM. By default, Oracle ILOM is set to transmit all traffic through the secure dedicated management port (NET MGT) on the Sun server chassis. However, if you prefer to support only one network connection to Oracle ILOM for both management and host traffic, you can configure a sideband management connection.

For more information about special considerations, requirements, and instructions for configuring a sideband management connection in Oracle ILOM, refer to *Setting Up a Management Connection to Oracle ILOM* in the *Oracle ILOM 3.1 Configuration and Maintenance Guide*.

Service Processor Power-On Policies

The service processor (SP) power-on policy determines the power state of the server when a cold boot is performed. A server cold boot occurs only when AC power is applied to the server.

Service processor power-on policies are mutually exclusive, meaning that if one policy is enabled, the other policy is disabled by default. If both policies are disabled, then the server SP will not apply main power to the server at boot time. The two power-on policies are described here:

Policy	Enabled	Disabled
Auto Power-On Host On Boot	When enabled, the service processor automatically applies main power to the server.	When disabled (default), main power is not applied to the server.
Set Host Power to Last Power State On Boot	When enabled, the service processor automatically applies main power to the server based on the last power state of the server. 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.	When disabled (default), the last power state is not applied to the server.

Related Information

- "Configure Management Policies Using Oracle ILOM Web Interface" on page 108
- "Configure Management Policies Using Oracle ILOM CLI" on page 109

Power Management Policies Supported

In Oracle ILOM 3.1, the following power features are enabled for x86 Sun servers.

Power Feature	Description
Remote Power Control	Configure the power state for the server remotely from an Oracle ILOM interface. Available power states include: Cutting power to the system Shutting down the system gracefully Powering on the system with full power For instructions on performing these operations, see Modify Power State for Managed Device in *Oracle ILOM 3.1 Configuration and Maintenance Guide*.
Power-On Policies	The service processor (SP) Power-On Policies determine the power state of the server when AC power is applied to the server (cold boot). Service processor power-on policies are mutually exclusive, so that if one policy is enabled, the other policy is disabled by default. If both policies are disabled, then the server SP will not apply main power to the server at boot time. The two power-on policies are: Auto Power-On Post on Boot-- When this option is enabled, the SP automatically applies main power to the server. When disabled (default), main power is not applied to the server. 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 this last power state following a power state change of at least 10 seconds. When disabled (default) the last power state is not applied to the server. For instructions on how to set the Power-On Policies, refer to Modify Power State on Managed Device in *Oracle ILOM 3.1 Configuration and Maintenance Guide*.

Diagnostics Using Pc-Check and NMI

Pc-Check is a DOS-based diagnostic utility that is integrated into Oracle ILOM that enables you to detect and test all motherboard components, ports, and slots. Pc-Check has four operating modes that you can run from Oracle ILOM:

- **Enabled** — Run a predefined set of diagnostics when the server starts up.
- **Extended** — Run a comprehensive test suite of diagnostics when the server starts up.
- **Manual** — Run only the diagnostics that you specify when the server starts up.
- **Disabled** — Do not run Pc-Check diagnostics when the server starts up.

You can also send a non-maskable interrupt (NMI) to the host operating system using Oracle ILOM. An NMI is a high-priority interrupt that reports system errors that cannot be ignored by other interrupts. Note that sending an NMI to the host operating system could cause the host to stop responding and wait for input from an external debugger. Therefore, you should use this feature only when instructed to do so by Oracle Services personnel.

For more information about Pc-Check diagnostics, refer to the *Oracle x86 Servers Diagnostics Guide* for Servers With Oracle ILOM 3.1. For instructions on how to run Pc-Check and how to generate an NMI from Oracle ILOM, refer to Troubleshooting Oracle ILOM Managed Devices in the *Oracle ILOM 3.1 User's Guide*.

Control Next Boot Device

Using Oracle ILOM, you can remotely control what the next boot device will be at the next power-on. Available states for the Next Boot Device setting include the following. These settings take effect at the next host boot and will bypass the current BIOS boot order settings.

- **Default**— No override in the BIOS setting. Also clears any previously chosen selection.
- **PXE**— Host will boot from the network, following the PXE specification.
- **Disk**— Host will boot from the first disk as determined by BIOS.
- **Diagnostic**— Host will boot into the diagnostic partition, if configured.
- **CD-ROM**— Host will boot from the attached CD-ROM or DVD device.
- **BIOS**— Host will boot into the BIOS Setup screen.

For information on how to configure the Next Boot Device setting in Oracle ILOM, refer to Modify Next Boot Device on x86 Managed System in the *Oracle ILOM 3.1 Configuration and Maintenance Guide*.

FRU TLI Auto-Update

Oracle ILOM includes a top-level indicator (TLI) auto-update feature that ensures that the TLI stored in the server's field-replaceable units (FRUs) is always correct. The TLI, which is unique to each server, is used to track the server's service entitlement and warranty coverage. When a server requires service, the server's TLI is used to verify that the server's warranty has not expired.

The TLI is stored in the FRUID (field-replaceable unit identifiers) of these components: power distribution board (PDB), motherboard (MB), and disk backplane (DBP). The TLI components stored in each component FRUID include:

- **PPN**(product part number)
- **PSN**(product serial number)
- **WWN**(world-wide name)

When a server FRU that contains the TLI is removed and a replacement module installed, the TLI of the replacement module is programmed by Oracle ILOM to contain the same TLI as the other two modules.

Switch Serial Port Output to Host Management Console

Oracle ILOM, by default, streams local management traffic through the serial management port (SER MGT). However, you can configure Oracle ILOM to stream the console output directly to the host console port (COM1). This feature is beneficial to Windows kernel debugging, as it enables you to view non-ASCII character traffic from the host console.

For more information about prerequisites and instructions for switching the serial port output between the serial port and host console, refer to Switch Serial Management Port Output to Host Console in the *Oracle ILOM 3.1 Configuration and Maintenance Guide*.

Back Up and Restore BIOS Configuration

The BIOS configuration back up and restore feature in Oracle ILOM makes it easy for maintaining your host data store BIOS configuration parameters. Use this feature to back up the BIOS parameters in the host data store to Oracle ILOM or to restore the saved parameters in Oracle ILOM to the host data store. You can also reset the BIOS configuration parameters to the factory defaults.

For more information about this feature and instructions on how to perform these operations in Oracle ILOM, refer to Managing x86 BIOS Configuration Parameters in the *Oracle ILOM 3.1 Configuration and Maintenance Guide*.

Administer Open Problems

Oracle ILOM automatically detects system hardware faults and environmental conditions on a managed system. If a problem occurs on a managed system, Oracle ILOM will automatically:

- Illuminate the Service Action indicator (LED) on the managed device.
- Identify the faulted condition in an easy to read Open Problems table.
- Record system information about the fault condition in the event log.

After the component is repaired or replaced, Oracle ILOM clears the fault state from the Open Problems table.

For further information about administering hardware faults that are detected and reported in Oracle ILOM interfaces, refer to View Open Problems on Managed Device and Manage Sun Hardware Faults Through Oracle ILOM Fault Management Shell in the *Oracle ILOM 3.1 User's Guide*.

Clear Server Faults

When a server component fails, the server generates a component-specific fault that is captured by Oracle ILOM SP. Some faults are cleared automatically when the failed component is replaced, but faults generated for components that are not hot-serviceable must be cleared manually. You can use Oracle ILOM CLI to clear faults.

For the Sun Blade X3-2B, the following types of faults must be cleared manually after the faulty component is replaced:

- DIMM (memory module) faults
- Processor (CPU) faults
- PCIe faults (network ports and hot-pluggable PCI-Express Modules (PEMs))
- Motherboard faults (not necessary if the Sun Blade X3-2B is replaced)

To clear DIMM, processor, PCIe, and motherboard faults, access Oracle ILOM CLI and clear the fault. For instructions, refer to *Sun Blade X3-2B (formerly Sun Blade X6270 M3) Service Manual*.

Clearing Top Cover Server Faults

In addition, the following fault does not require replacement of a faulty component; however, user action is required to clear the fault:

`fault.security.integrity-compromised@/sys/sp`

This fault is generated when the server's top cover is removed while the AC power cords are still connected to the power supply, that is, power is not completely removed from the server. To clear the **`fault.security.integrity-compromised@/sys/sp`** fault, replace the server's top cover, and reboot the server's SP.

▼ Configure Management Policies Using Oracle ILOM Web Interface

1. **Log in to Oracle ILOM Web interface.**
   See "Access Oracle ILOM Using CLI" on page 37.
2. **Click System Management > Policy.**
   The Policy Configuration page appears.
3. **To configure a policy, click the associated radio button.**
4. **Select Enable or Disable from the drop-down list.**
   The system asks you to confirm your selection.

5 **To continue, click OK.**

More Information Related Information

- "Configure Management Policies Using Oracle ILOM CLI" on page 109
- "Access Oracle ILOM Using CLI" on page 37
- "Service Processor Power-On Policies" on page 104

▼ Configure Management Policies Using Oracle ILOM CLI

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

See "Access Oracle ILOM Using CLI" on page 37.

2 **To show the current policies, type.**

```
-> show /SP/policy
```

The SP policy properties display. For example.

```
/SP/policy
Targets:

Properties:

 HOST_AUTO_POWER_ON = disabled
 HOST_LAST_POWER_STATE = disabled

Commands:
 cd
 set
 show
```

3 **To enable or disable a policy, type a command using the following format.**

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

For example, to enable the host power to last power state on boot policy, type.

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

Then type `show /SP/policy` again to confirm the new setting.

```
/SP/policy
Targets:

Properties:
 HOST_AUTO_POWER_ON = disabled
 HOST_LAST_POWER_STATE = enabled
```

More Information Related Information

- “Configure Management Policies Using Oracle ILOM Web Interface” on page 108
- “Access Oracle ILOM Using CLI” on page 37
- “Service Processor Power-On Policies” on page 104

Configuring RAID

This section contains information about configuring RAID devices for the server.

The following topics are covered.

Description	Links
Verify that the HBA REM is supported for the server.	"Supported HBA REMs" on page 111
Review Oracle's recommendations for drive slot population and virtual drive creation.	"Oracle Recommendations for Drive Slot Population and Virtual Drive Creation" on page 112
Create a RAID volume before installing an operating system.	"Creating a RAID Volume Before Installing an Operating System" on page 113
Create a RAID volume after installing an operating system.	"Creating a RAID Volume After Installing an Operating System" on page 113

Supported HBA REMs

The Sun Blade X3-2B supports two host bus adapter (HBA) RAID expansion modules (REMs). REMs can be ordered with the server or ordered separately. Refer to "Servicing Sun Blade X3-2B Components " in *Sun Blade X3-2B (formerly Sun Blade X6270 M3) Service Manual* for instructions on installing the REMs and connecting hard drives.

The following table lists the available HBA Express Module disk controllers for the Sun Blade X3-2B and the RAID levels available for each controller.

Disk Controller	REM Part Number	RAID Levels Supported
Optional Sun Storage 6Gb/s SAS REM HBA, LSI Fusion-MPT IR SAS2	SGX-SAS6-REM-Z	Hardware 0, 1, 10
Optional Sun Storage 6Gb/s SAS REM RAID HBA, LSI MegaRAID SAS2	SGX-SAS6-**R**-REM-Z	Hardware 0, 1, 5, 6, 10, 50, 60

Sun Blade Storage Module M2 RAID Considerations

Drives located in the Sun Blade X3-2B are considered to be in a separate "failure domain" from the drives that are in the Sun Blade Storage Module M2 disk enclosure. A failure domain is an enclosure or group of enclosures that connect to the drives in the same way.

Because the Sun Blade X3-2B connects to the drives using a single wire and the Sun Blade Storage Module M2 connects to the drives using two wires, they are different failure domains. Thus:

- The drives in different failure domains should not be part of the same RAID volume (or be hot spares for that volume).
- Since two or more Sun Blade Storage Module M2 disk enclosures are considered to be in the same failure domain, RAID volumes and hot spares can be composed of drives from multiple storage modules.
- Disks that only use a single wire (port) connection are not supported in the Sun Blade Storage Module M2 because it connects to disks using two wires. These unsupported drive types include SATA and SATA SSD drives. Both single wire and two wire drives are supported in the Sun Blade X3-2B.

Oracle Recommendations for Drive Slot Population and Virtual Drive Creation

Because of the unique architecture of blade servers, there are a number of important things to keep in mind when configuring your disk sub-system. These include both drive type selection (SAS, SSD) and location of these drives in the server modules. Disks that are internal on most server modules are connected by a single port and run at a maximum speed of 3 Gbs.

Disks located in storage modules are connected with two ports and run at a maximum speed of 6 Gbs. Dual port drives provide additional fault tolerance that keep a drive online if the primary port fails. Currently SAS drives support two ports. SATA and SATA SSD drives are single ported.

In consideration of the differences between server modules and drive types, you should take the following into account when configuring your system:

- Virtual drives must be composed of drives using the same interface only (for example: SAS only or SATA SSD only).
- Virtual drives must be contained in a single failure domain. The internal Sun Blade X3-2B disks are considered to be a single failure domain (single port connections only). One or more Sun Blade 6000 Storage Modules are also considered a single failure domain. Any virtual drive created on the Sun Blade X3-2B is limited to 4 drives, including the hot-spare

drives. The number of virtual drives on Sun Blade 6000 Storage Modules can be up to 8 or more drives depending on the number of Sun Blade 6000 Storage Modules accessible to the server module.

- Use dedicated hot-spares only. Do not use global hot-spares unless they cannot be accessed by another failure domain.
- Dedicated hot-spares should only include drive groups that reside in the same failure domain. Using this method, you can create a "virtual" global hot-spare for any domain.
- SATA/SATA-SSD drives are not supported in Sun Blade 6000 Storage Modules. The chassis Zone Manager does not allow you to zone the drives.
- Both SAS and SATA drives are supported in Sun Blade X3-2B; however, if used in the server module, the SAS drives do not run at full speed and cannot utilize the second port.
- SAS and SATA drives can be mixed in the server module, but not amongst virtual drives. For example you could have a two drive SAS RAID 1 and a two drive SATA-SSD RAID 1 in a Sun Blade X3-2B.

Creating a RAID Volume Before Installing an Operating System

The following guidelines apply when you are using a storage drive connected to a supported HBA to install an operating system (OS).

- For *SGX-SAS6-REM-Z* – You can install an OS on a drive without creating a RAID volume. However, if you want to install the OS from an OS install disk, you will need to create the RAID volume before installing the OS.
- For *SGX-SAS6-R-REM-Z* – You must create a RAID volume before installing an OS on a drive. You must also make the drive bootable.

For information about creating RAID volumes and making drives bootable before installing an OS, refer to: "Preparing the Storage Drives to Install an Operating System" in *Sun Blade X3-2B (formerly Sun Blade X6270 M3) Installation Guide*.

Creating a RAID Volume After Installing an Operating System

RAID configuration is most often completed before you install an operating system and for the boot disk. However, you can to create a RAID volume on other non-boot disks after installing an operating system.

To create RAID volumes after an OS is installed, and manage server RAID resources, choose one of the following tools:

- **Oracle System Assistant** – You can use Oracle System Assistant to create RAID 0 or 1 level volumes and prepare drives for OS installation. See "Access Oracle System Assistant Remotely" on page 30.
- **Oracle Hardware Management Pack 2.2** – 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. For more information about accessing Oracle Hardware Management Pack, see "Access Oracle Hardware Management Pack From Oracle System Assistant" on page 39.
- **(SGX-SAS6-REM-Z only) LSI SAS2 2008 RAID Management Utility** – You can use the `sas2ircu` commands contained in the LSI SAS2 Integrated Configuration Utility to configure and manage RAID volumes on your server.

  You can download the SAS2IRCU software for your operating system from the Utilities section at the following location: `http://www.lsi.com/sep/Pages/oracle/sg_x_sas6-rem-z.aspx`
- **(SGX-SAS6-R-REM-Z only) LSI MegaCLI or MegaRAID Storage Manager** – You can use the LSI MegaCLI command-line tool or the MegaRAID Storage Manager Web browser to configure and manage RAID volumes for SGX-SAS6-R-REM-Z.

  You can download the MegaCLI and MegaRAID Storage Manager software for your operating system from the Utilities section at the following location: `http://www.lsi.com/sep/Pages/oracle/sg_x_sas6-r-rem-z.aspx`

Setting Up the Server With BIOS Setup Utility

These sections describe the UEFI BIOS booting events and the BIOS Setup Utility. This section provides an overview of the BIOS Setup Utility.

The following topics are covered.

Description	Link
Access the BIOS Setup Utility menus.	"Access BIOS Setup Utility Menus" on page 115
Navigate the menus or options listed on a menu.	"Navigate BIOS Setup Utility Menus" on page 117
Review function keys to Control key mappings.	"BIOS Key Mappings" on page 118
Review BIOS Setup Utility menu tree.	"BIOS Setup Utility Menu Overview" on page 119

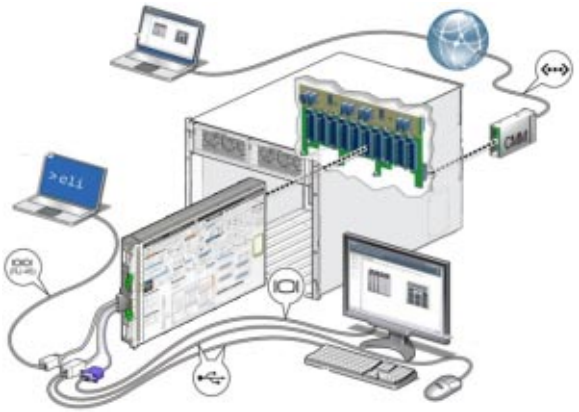
▼ Access BIOS Setup Utility Menus

Before You Begin

Select one of the following access interfaces:

- Use a USB keyboard and VGA monitor connected directly to the server. (A mouse is not required to operate the BIOS Setup Utility.)
- Use a terminal (or terminal emulator connected to a computer) through the serial port on the back panel of the server.
- Connect to the server using Oracle ILOM Remote Console application.

  See "Connecting to Oracle ILOM" in *Sun Blade X3-2B (formerly Sun Blade X6270 M3) Installation Guide*.



1. **Reset or power on the server. Select one of the following methods:**

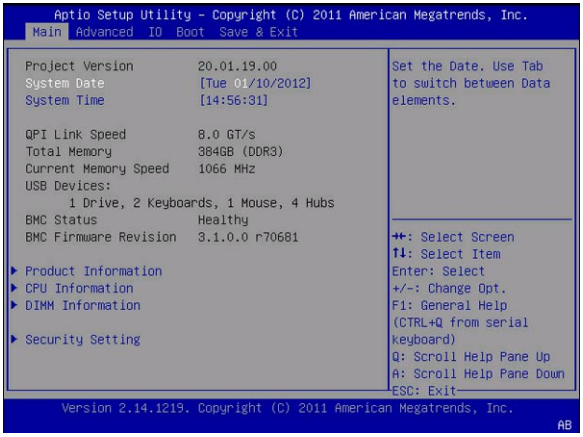
   - **From the local server — press the Power button on the front panel of the server to power off the server, and then press the Power button again to power on the server.**
   - **From Oracle ILOM Web interface — click Host Management > Power Control and select Reset from the Select Action list box.**
   - **From Oracle ILOM CLI on the server SP — type `reset /System`**

   The POST sequence begins.

   See "Powering On the Server Module" in *Sun Blade X3-2B (formerly Sun Blade X6270 M3) Service Manual*.

2 **To enter the BIOS Setup Utility, press the F2 key (Ctrl+E from a serial connection) when prompted and while the BIOS is running the power-on self-tests (POST).**

The BIOS Setup Utility main appears.



More Information Related Information

- “Setting Up the Server With BIOS Setup Utility” on page 115
- “BIOS Setup Utility Screen Reference ” on page 149
- “BIOS Key Mappings” on page 118

▼ Navigate BIOS Setup Utility Menus

To navigate the menus or options listed on a screen, use the arrow keys. The options or fields that you can configure on a menu appear in color.

For further instructions on how to navigate and change settings in the BIOS Setup Utility, refer to the online navigation information provided on lower right side of the menu. The upper right side of the menu provides information about the menu selection.

1 **Access the BIOS Setup Utility screens.**

See “Access BIOS Setup Utility Menus” on page 115.

2 **To select the different primary menu options, use the left and right arrow keys.**

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

3 **To select an option on a top-level screen, use the up and down arrow keys to navigate the options presented.**

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

- If a field can be modified, as you select the option, instructions for modifying the option appear in the right column of the screen.
- If a field is a link to a sub-screen, a description of the sub-menu content appears in the right column.

4. **Modify the setup field by pressing the + or - keys (plus or minus keys) or by pressing Enter and selecting the option you want from the dialog box menus.**

5. **To return from a sub-menu to the previous menu screen, press the Esc key.**

   Pressing Esc from a top-level menu is equivalent to selecting the Discard Changes and Exit option from the Save and Exit menu.

6. **Modify parameters as needed.**

7. **To save or discard your changes and exit the BIOS Setup Utility, press F10.**

   - **To save your changes and exit the BIOS Setup Utility, you can select the Save & Exit menu and then select Save Changes and Reset.**

Note – After you modify any BIOS settings and select 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.

Note – If the BIOS Setup Utility setup data becomes invalid, the BIOS settings will return to their default, optimal values.

More Information Related Information

- "Setting Up the Server With BIOS Setup Utility" on page 115
- "BIOS Setup Utility Screen Reference " on page 149

BIOS Key Mappings

When you view the BIOS output from a terminal using the serial console redirection feature, some terminals do not support function keys. BIOS supports the mapping of function keys to Control key sequences when serial redirection is enabled. The following table provides a description of the function key to Control key mappings.

Function Key	Control Key Sequence	BIOS POST Function	BIOS Setup Function
F1	Ctrl+Q	Not applicable.	Activate the Setup Utility Help menu.
F2	Ctrl+E	Enter BIOS Setup Utility while the system is performing the power-on self-test (POST).	Not applicable.
F7	Ctrl+D	Not applicable.	Discard changes. Not applicable to UEFI Driver Control Menu.
F8	Ctrl+P	Activate BIOS Boot menu.	Not applicable.
F9	Ctrl+O	Launches Oracle System Assistant. BIOS boots to Oracle System Assistant, bypassing the current Boot Option Priority list for this one-time boot method.	Activate Load Optimal Values dialog box menu. Not applicable to UEFI Driver Control Menu.
F10	Ctrl+S	Not applicable.	Activate Save and Exit dialog box menu. Not applicable to UEFI Driver Control Menu.
F12	Ctrl+N	Activate Network boot.	Not applicable.

Related Information

- "Access BIOS Setup Utility Menus" on page 115

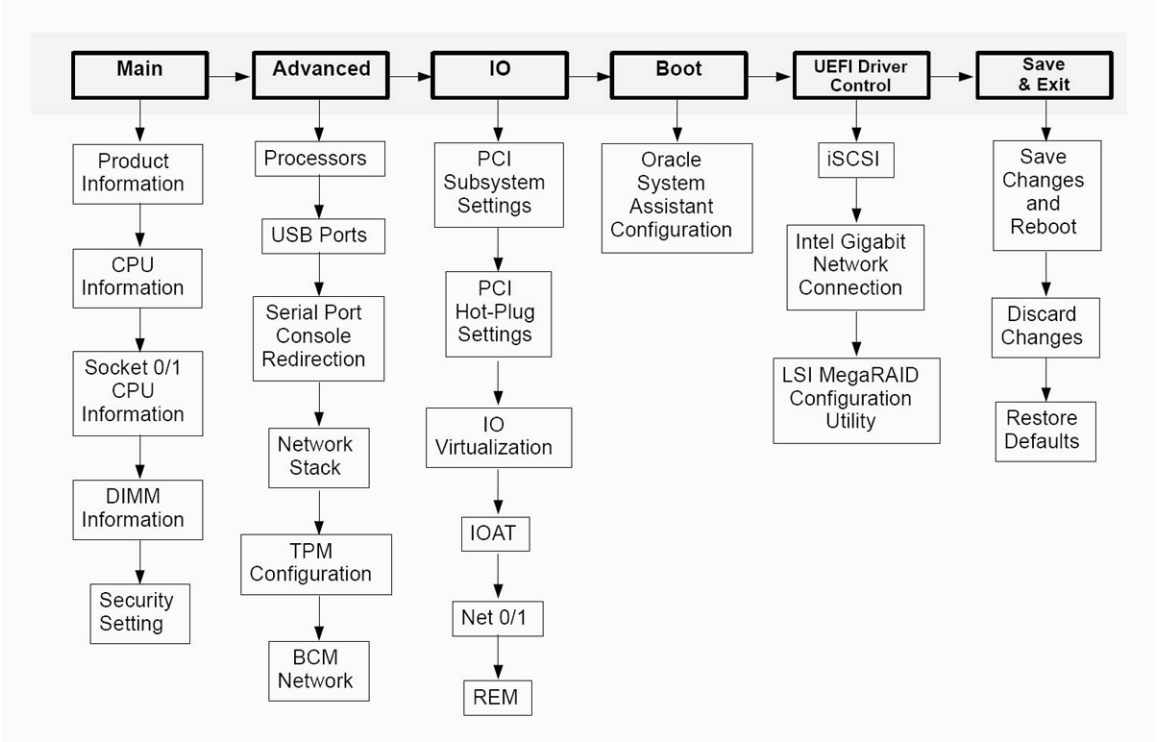
BIOS Setup Utility Menu Overview

The following table describes the top-level BIOS Setup Utility menu tabs.

Menu	Description	See:
Main	General product information, including memory, time and date, security settings, system serial number, and CPU and DIMM information.	"BIOS Main Menu Selections" on page 149

Menu	Description	See:
Advanced	Configuration information for the CPU, trusted computing, USB, and other information. Set the IP address for the server SP.	"BIOS Advanced Menu Selections" on page 156
IO	Enable and disable Option ROMs.	"BIOS IO Menu Selections" on page 167
Boot	Enable or disable internal OSA support, set the boot mode to Legacy BIOS or UEFI, and configure the boot device priority.	"BIOS Boot Menu Selections" on page 175
UEFI Driver Control	Displays only if the UEFI/BIOS boot mode is set to UEFI. Only UEFI boot options are present to the user.	"BIOS UEFI Driver Control Menu Selections" on page 177
Save and Exit	Save changes and exit, discard changes and exit, discard changes, or load optimal or fail-safe defaults.	"BIOS Save & Exit Menu Selections" on page 183

The following figure identifies sub-menus that you can access from each of the top-level menus.



Related Information

- “BIOS Setup Utility Screen Reference ” on page 149
- “BIOS LSI MegaRAID Configuration Utility Screen Reference” on page 189

Selecting Legacy and UEFI BIOS

The following topics are covered.

Description	Link
Understand BIOS.	"Configuring the UEFI BIOS Boot Mode" on page 123
Understand benefits of UEFI-based BIOS over Legacy BIOS boot mode.	"Selecting Legacy BIOS or UEFI Boot Mode" on page 123
Specify which mode of BIOS you want to use: Legacy BIOS or UEFI boot mode.	"UEFI BIOS Advantages" on page 125
Understand configuration utilities for add-in cards.	"Configuration Utilities for Add-In Cards" on page 125
Select the boot mode using the BIOS Setup Utility.	"Select UEFI or Legacy BIOS Boot Mode" on page 126

Configuring the UEFI BIOS Boot Mode

UEFI BIOS supports both Legacy and UEFI boot modes when starting the system. You can set the UEFI-BIOS boot mode using the UEFI BIOS setup utility. UEFI-BIOS boot mode option selection depends on the operating system type and configuration that is installed on the server. Choose Legacy BIOS boot mode to allow HBAs and Express Module devices to use option ROMs. Choose UEFI boot mode to use UEFI drivers.

The BIOS firmware controls the system from power-on until an operating system is booted. The BIOS is based on the Unified Extensible Firmware Interface (UEFI) specification.

Selecting Legacy BIOS or UEFI Boot Mode

UEFI BIOS supports two boot modes: Legacy BIOS boot mode and UEFI boot mode. Some devices and operating systems do not yet support UEFI-based BIOS and can boot only from Legacy BIOS boot mode. Depending on your situation, you might have to specify which boot mode of UEFI BIOS you want to use: Legacy BIOS boot mode or UEFI boot mode. Choose Legacy BIOS boot mode to allow HBAs and Express Module devices to use option ROMs. Choose UEFI boot mode to use UEFI drivers.

Only devices that support the selected boot mode are listed on the BIOS Boot screen. If you select UEFI Boot Mode, only boot candidates that support UEFI BIOS boot mode are listed on the BIOS Setup Utility screens in the Boot Options Priority list. If you select Legacy BIOS boot mode, only boot candidates that support Legacy BIOS boot mode are listed in the Boot Options Priority list.

Note – If the boot mode is changed, the boot candidates from the previous Boot Mode disappears. Boot candidates for the newly changed Boot Mode appear after the 'Save Changes and Reset' BIOS command is issued and also appear in the screens after the next boot to BIOS Setup Utility.

When you switch between Legacy BIOS Mode and UEFI Boot Mode (in either direction), BIOS settings that affect the Boot Options Priority List settings are changed. Because the settings for a given mode do not persist on a transition between modes, you should use the **`ubiosconfig`** command to capture and preserve the BIOS configuration if you intend to switch back to the previous BIOS mode and want to retain your previous BIOS settings.

At the first release of the Sun Blade X3-2B, the following operating systems support UEFI BIOS boot mode:

- Oracle Enterprise Linux
- SUSE Linux Enterprise Server SP1
- Red Hat Enterprise Linux
- Microsoft Windows

For updates to this list, refer to *Sun Blade X3-2B (formerly Sun Blade X6270 M3) Product Notes*.

When using operating systems that support booting only from Legacy BIOS, you must use the Legacy BIOS boot mode. When using operating systems that support booting from Legacy BIOS or UEFI BIOS, you can use either boot mode. However, once a boot mode is chosen, and an operating system is installed, the installation can be started only using the same mode that was used for the installation.

- When an operating system is installed using Legacy BIOS boot mode, the operating system can be started only in Legacy BIOS boot mode.
- When an operating system is installed using UEFI boot mode, the operating system can be started only in UEFI boot mode.

UEFI BIOS Advantages

When the option is available to choose between a Legacy BIOS boot mode or UEFI boot mode operating system installation, the advantages to choosing a UEFI boot mode installation include the following:

- Avoids Legacy Option ROM address constraints. For more information, see "Legacy BIOS Option ROM Allocation Considerations" on page 136.
- Supports operating system boot partitions greater than 2 terabytes (2 TB) in size. For more information about limitations for supported operating systems, refer to *Sun Blade X3-2B (formerly Sun Blade X6270 M3) Product Notes*.
- PCIe device configuration utilities are integrated with Setup Utility menus. For more information, see "BIOS Setup Utility Screen Reference " on page 149.
- Bootable operating system images will appear in the boot list as labeled entities, for example Windows boot manager label versus raw device labels.

Benefits of UEFI boot mode over Legacy BIOS boot mode include:

- Support for hard drive partitions larger than 2 Tbytes
- Support for more than four partitions on a drive
- Fast booting
- Efficient power and system management
- Robust reliability and fault management

Configuration Utilities for Add-In Cards

The method for interacting with configuration utilities for add-in cards and (system resident) I/O adapters differs depending on whether Legacy BIOS boot mode or UEFI boot mode is used.

In Legacy BIOS boot 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. Often the interface will have a vendor-specific design.

In UEFI boot mode, the configuration screens for the add-in cards will appear as menu items in the IO Menu as part of the standard BIOS Setup Utility screens. For example, if the Oracle Sun Storage 6Gb/s PCIe RAID host bus adapter is installed in the server, its configuration utility appears as a menu selection on the BIOS UEFI Driver Control menu.

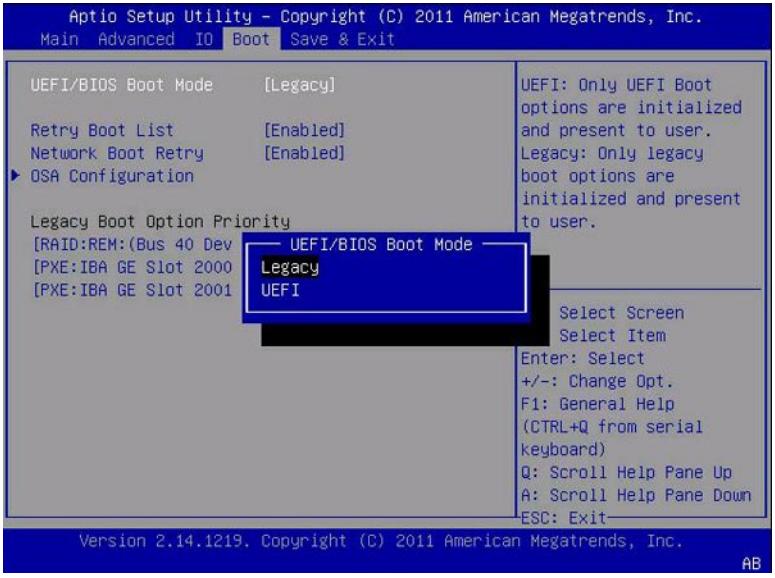
Refer to the "BIOS LSI MegaRAID Configuration Utility Screen Reference" on page 189 for more information on the LSI MegaRAID Configuration Utility.

▼ Select UEFI or Legacy BIOS Boot Mode

Before You Begin See "Configuring the UEFI BIOS Boot Mode" on page 123.

1. **Access the BIOS Setup Utility menus.**
   See "Access BIOS Setup Utility Menus" on page 115.
2. **From the BIOS Main menu screen, select Boot.**
3. **From the Boot screen, select UEFI/BIOS Boot Mode, and press Enter.**
   The UEFI/BIOS Boot Mode dialog box appears.

Note – You cannot configure the boot device priority after switching the boot mode. A system reboot is required to properly populate the boot device list with devices that support the chosen boot mode.



4. **Use the up and down arrows to select the appropriate Legacy or UEFI boot mode, and press Enter.**
5. **To save the changes and exit the screen, press F10.**

More Information

Related Information

- "Configuring the UEFI BIOS Boot Mode" on page 123

Common BIOS Setup Utility Tasks

The following topics are covered.

Description	Link
Verify BIOS factory default settings.	"Verify BIOS Factory Default Settings" on page 129
Select the boot device.	"Select the Boot Device" on page 131
Configure TPM Support.	"Configure TPM Support" on page 132
Configure SP network settings.	"Configure SP Network Settings" on page 134
Legacy BIOS Option ROM Allocation.	"Legacy BIOS Option ROM Allocation Considerations" on page 136
Modify device configuration.	"Modify Device Configuration" on page 138
Allocating IO resources.	"Allocating I/O Resources" on page 140
Enable or disable IO resource allocation.	"Enable or Disable I/O Resource Allocation" on page 141
Configure iSCSI Virtual Drives.	"Configuring iSCSI Virtual Drives" on page 141
Exit BIOS Setup Utility.	"Exit BIOS Setup Utility" on page 147

▼ Verify BIOS Factory Default Settings

In the BIOS Setup Utility, you can set optimal defaults, as well as view and edit settings as needed. Any changes that you make in the BIOS Setup Utility (using the F2 key) are permanent until the next time you change the settings.

Before You Begin Ensure that the following requirements are met:

- A hard disk drive or solid state drive is properly installed in the server.
- A console connection is established to the server.

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

   Select one of the following 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 Oracle ILOM Web interface — click Host Management > Power Control, and select Reset from the Select Action list box.**
   - **From Oracle ILOM CLI on the server SP — type `reset /System`.**

   The server resets.

2. **To access the BIOS Setup Utility, press the F2 key when the prompt appears.**

3. **To ensure that the factory defaults are set:**

   a. **To automatically load the optimal factory default settings, press the F9 key.**

      A message appears prompting you to continue this operation by selecting OK or to cancel the operation by selecting Cancel.

   b. **In the message, highlight OK, and then press Enter.**

      The BIOS Setup Utility screen appears with the cursor highlighting the first value on the screen.

4. **To save the changes and exit the BIOS Setup Utility, press F10 .**

   - **Alternatively, you can save the changes and exit the BIOS Setup Utility by navigating to the Save & Exit menu and selecting Save Changes and Reset.**

More Information Related Information

- "Access BIOS Setup Utility Menus" on page 115
- "BIOS Key Mappings" on page 118
- "Exit BIOS Setup Utility" on page 147

▼ Select the Boot Device

The Boot Option Priority list contents depend on the BIOS boot mode that is selected. If UEFI boot mode is selected, only UEFI boot candidates are initialized and displayed in the Boot Option Priority list. If Legacy BIOS Mode is selected, only Legacy BIOS boot candidates are initialized and displayed in the Boot Option Priority list.

In addition to using the F2 key to view or edit the system BIOS settings (see "Verify BIOS Factory Default Settings" on page 129), you can use the F8 key during the BIOS startup to specify a temporary boot device. This selected boot device is in effect only for the current system boot. The permanent boot device specified using the F2 key will be in effect after the system boots from the temporary boot device.

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

   Select one of the following methods.

   - **From the local server — Press the Power button on the front panel of the server to power off the server, and then press the Power button again to power on the server.**
   - **From Oracle ILOM Web interface — Click Host Management > Power Control, and select Reset from the Select Action list box.**
   - **From Oracle ILOM CLI on the server SP — Type `reset /System`.**

   The server resets.

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

   The Please Select Boot Device dialog box appears.

3. **Select the boot device option that is appropriate and then press Enter.**

   Use the up and down arrows to select the boot device.

   Depending on the boot mode you have selected (UEFI boot mode or Legacy BIOS boot mode), the Please Select Boot Device dialog displays only the applicable boot devices. For example, when the UEFI Boot Mode is elected, only UEFI boot devices appear.

More Information Related Information

- "Access BIOS Setup Utility Menus" on page 115
- "BIOS Key Mappings" on page 118
- "Exit BIOS Setup Utility" on page 147

▼ Configure TPM Support

If you intend to use Windows Server 2008 TPM feature set, you must configure the server to support this feature.

Note – TPM enables you to administer the TPM security hardware in your server. For additional information about implementing this feature, refer to the Windows Trusted Platform Module Management documentation provided by Microsoft.

---

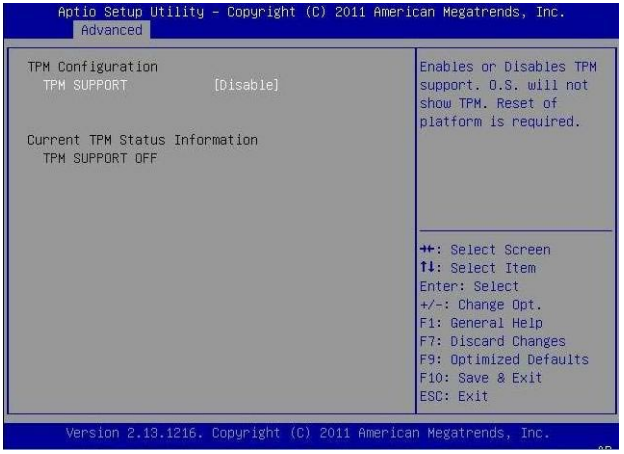
1. **Access the BIOS Setup Utility menus.**

   See "Access BIOS Setup Utility Menus" on page 115.

2. **From the BIOS Main menu screen, select Advanced.**

3. **From the Advanced Settings screen, select Trusted Computing.**

   The TPM Configuration appears.

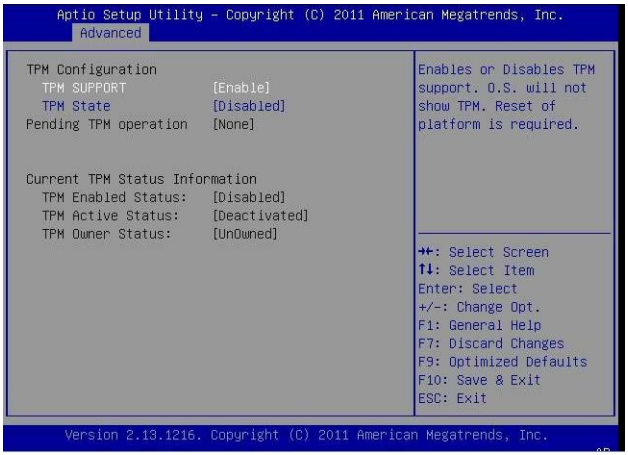


4 **If the TPM State is listed as `Disable`, select TPM Support and press Enter.**

A TPM Support dialog box appears.

5 **Set the TPM Support value to Enable, and press Enter.**

The updated TPM Configuration screen appears.



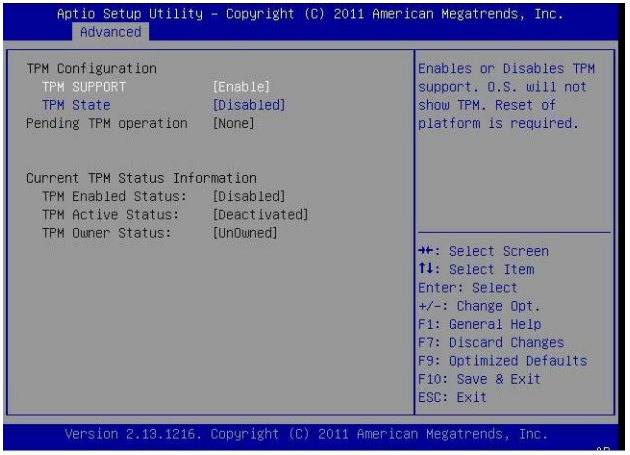
6 **Verify that TPM support is configured. Do the following:**

a. **Power the server off and on.**

b. **Access the BIOS Setup Utility menus.**

c. Select Advanced > Trusted Computing.

On the TPM Configuration screen, confirm that the TPM Support setting is set to `Enable`.



More Information Related Information

- "Access BIOS Setup Utility Menus" on page 115
- "Exit BIOS Setup Utility" on page 147
- Microsoft's Windows Trusted Platform Module Management documentation

▼ Configure SP Network Settings

To specify service processor (SP) network settings, select one of the following methods:

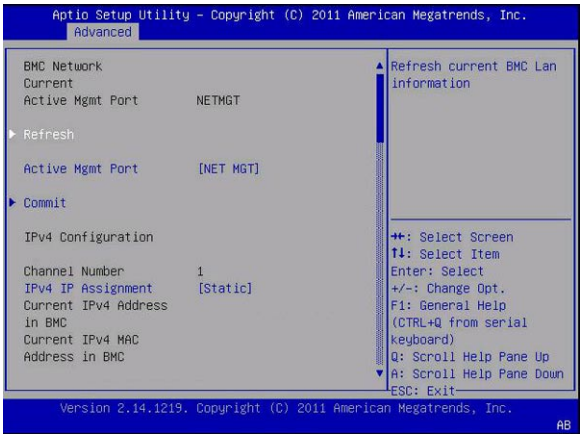
- Oracle System Assistant — For instructions on using Oracle System Assistant to configure network settings, see "Configure Network Settings" on page 48.
- Oracle ILOM — For instructions on setting the IP address for the server SP using Oracle ILOM, refer to Oracle Integrated Lights Out Manager (ILOM) 3.1 Documentation Collection (`http://www.oracle.com/pls/topic/lookup?ctx=ilom31`).
- BIOS — Assign the IP address for the server SP from the BIOS Setup Utility on the Advanced menu, as follows.

Use this procedure to assign an IP address for the server SP using the BIOS Setup Utility:

1 Access the BIOS Setup Utility menus.

See "Access BIOS Setup Utility Menus" on page 115.

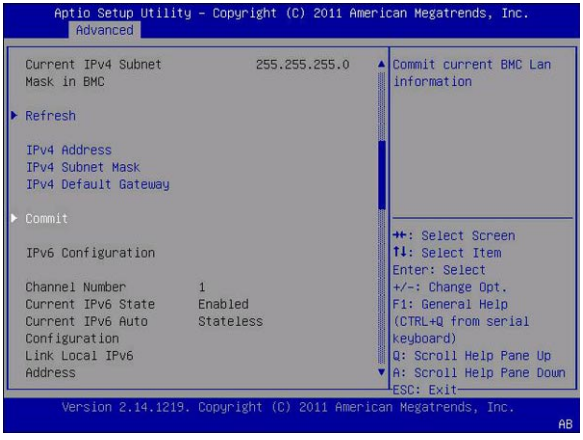
2 In the BIOS Setup Utility menu, navigate to Advanced menu.



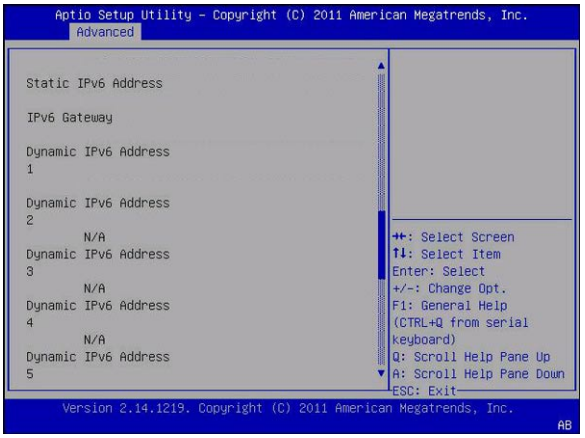
3 Navigate to BMC Network.

BMC is the Baseboard Management Controller.

The BMC Network appears.



4 **In the BMC Network Configuration screen, you can view and configure settings for IPv4 Assignment or IPv6 Assignment.**



5 **To update the configuration settings to the latest values, select Refresh.**

6 **To make the changes to the latest values, select Commit.**

7 **To save the changes and exit the BIOS Setup Utility, press F10.**

More Information Related Information

- "Access BIOS Setup Utility Menus" on page 115
- "BIOS Advanced Menu Selections" on page 156
- "Exit BIOS Setup Utility" on page 147

Legacy BIOS Option ROM Allocation Considerations

In Legacy BIOS boot mode, PC architecture constraints are placed on Legacy Option ROM allocation. These constraints are not placed on UEFI Option ROMs, which are commonly referred to as UEFI drivers.

The system BIOS allocates 128 Kbytes of address space for Option ROMs. This address space is shared between on-board devices and PCIe plug-in cards. This fixed address space limitation is imposed by the PC architecture and not by the BIOS itself. You can to exhaust the available address space when installing PCIe plug-in cards. When the address space is exhausted, the BIOS displays an `Option ROM Space Exhausted` message, which means that one or more devices cannot load Option ROMs.

For example, if you install a SCSI PCIe card, you might encounter the following message in Oracle ILOM event log:

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

By default, all on-board 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 mean 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 you encounter the Option ROM space exhausted condition even after disabling all devices you do not intend to boot from, 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

- "Setting Up the Server With BIOS Setup Utility" on page 115
- "Configuring Option ROM Settings" on page 138
- "Modify Device Configuration" on page 138

Configuring Option ROM Settings

1. **Access the BIOS Setup Utility.**
   See "Access BIOS Setup Utility Menus" on page 115.

2. **Select IO.**
   The NET0/1 screen appears.

3. **Select a device from Internal Devices or Add-In Cards.**

4. **Enable or Disable the Option ROM setting.**
   Do one of the following:

   - **To enable I/O resource allocation for the I/O card, select Enabled .**
   - **To disable the add-in card, Select Disabled.**

5. **To save the changes and exit the BIOS Setup Utility, press F10.**

Modify Device Configuration

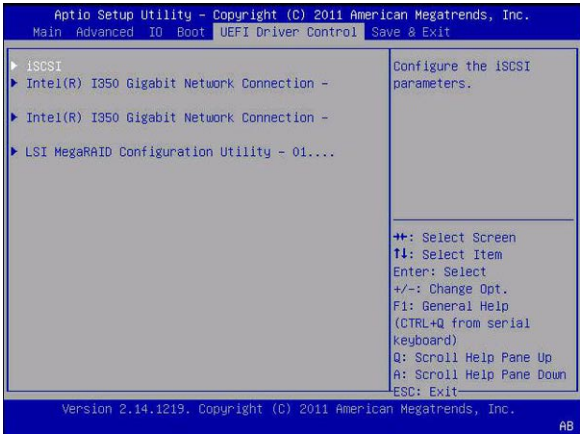
The UEFI Driver Control menu appears only when UEFI Boot Mode is selected.

1. **Access the BIOS Setup Utility menus.**
   See "Access BIOS Setup Utility Menus" on page 115.

2. **In the BIOS Setup Utility menus, use the arrow keys to navigate to the UEFI Driver Control menu.**

Note – Ensure Legacy mode is not enabled.

A list of all controllable devices appears.



3. **Select a device, for example:**

   `Intel(R) I350 Gigabit Network Connection -.`

4. **Select one of the following options:**

   - **View controller and device properties**
   - **Change controller and device properties**
   - **Save changes**

5. **To save the changes and exit the BIOS Setup Utility, press F10.**

More Information Related Information

- “Access BIOS Setup Utility Menus” on page 115
- “BIOS UEFI Driver Control Menu Selections” on page 177
- “Exit BIOS Setup Utility” on page 147

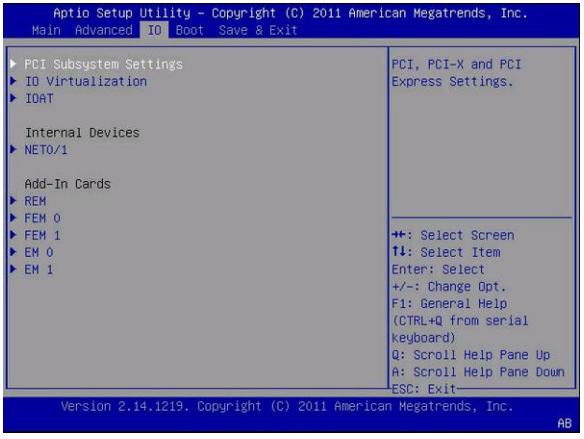
Allocating I/O Resources

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

```
6491 Tue Dec 7 14:19:57 2010 IPMI Log minorID = a5a9 : 12/07/2010 : 14:19:57 :
System Firmware Error :sensor number= 0x00 : PCI resource exhaustion: Bus 147
Device 0 Func 06490 Tue Dec 7 14:19:57 2010 IPMI Log minorID = 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, you should disable I/O resource allocation for any slot in which the Quad Gigabit Ethernet card is installed unless you intend to use that card as a bootable device.

If you intend to use that Quad Gigabit Ethernet 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 card slots in the system. In general, it is safe, but not typically required, to disable I/O resource allocation for any cards not intended to be used as bootable devices, similar to the disabling of Option ROMs.



Related Information

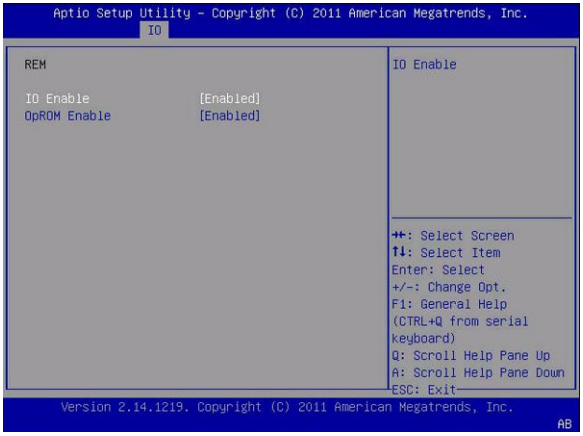
- “Access BIOS Setup Utility Menus” on page 115
- “BIOS IO Menu Selections” on page 167

▼ Enable or Disable I/O Resource Allocation

Before You Begin See "Allocating I/O Resources" on page 140.

1. **Access the BIOS Setup Utility menus.**
   See "Access BIOS Setup Utility Menus" on page 115.

2. **Use the arrow keys to navigate to the IO menu.**



3. **Do one of the following:**
   - **To enable I/O resource allocation for the I/O card, select Enabled.**
   - **To disable the add-in card, select Disabled.**

4. **To save the changes and exit the BIOS Setup Utility, press F10.**

More Information Related Information

- "Access BIOS Setup Utility Menus" on page 115
- "BIOS IO Menu Selections" on page 167

▼ Configuring iSCSI Virtual Drives

iSCSI virtual drives are used primarily to run supported operating systems that reside on an external server that function as the Sun Blade X3-2B host operating system.

iSCSI virtual drives must be configured in the iSCSI BIOS Setup Utility screens. You must set the iSCSI parameters on the selected port.

Before You Begin

- You should be familiar with iSCSI theory of operation for the selected OS.
- Refer to the OS documentation to verify that iSCSI targets can be mounted on a client.
- You will need access to an external iSCSI server running on any supported OS.
- The Sun Blade X3-2B must be in UEFI boot mode, not legacy boot mode. See "Select UEFI or Legacy BIOS Boot Mode" on page 126.
- You must provide the following information from the iSCSI target server. The following items are entered in to the Sun Blade X3-2B ISCSI BIOS Setup Utility screens:

Item	Example
1 Target name	iqn.1988-12.com.oracle:x6270-m3-target
2 iSCSI initiator name	iqn.1988-12.com.oracle:002222de444e
Note – iSCSI requires iqn formats for its initiator and target names.	
3 Virtual device	Virtual Disk 0
4 Logical Unit Number	LUN 0
Additional Information:	
5 IP address of iSCSI server	111.111.1.11 (ivp4)
6 Port number	3210

Use this procedure to configure iSCSI virtual drives in the ISCSI BIOS Setup Utility.

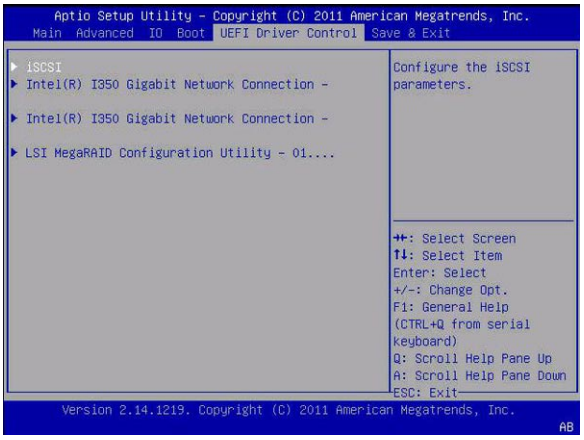
1 Access the BIOS Setup Utility menus.

See "Access BIOS Setup Utility Menus" on page 115.

2 In the BIOS Setup Utility menus, use the arrow keys to navigate to the UEFI Driver Control menu.

Note – Ensure Legacy boot mode is not enabled.

A list of all controllable devices appears.

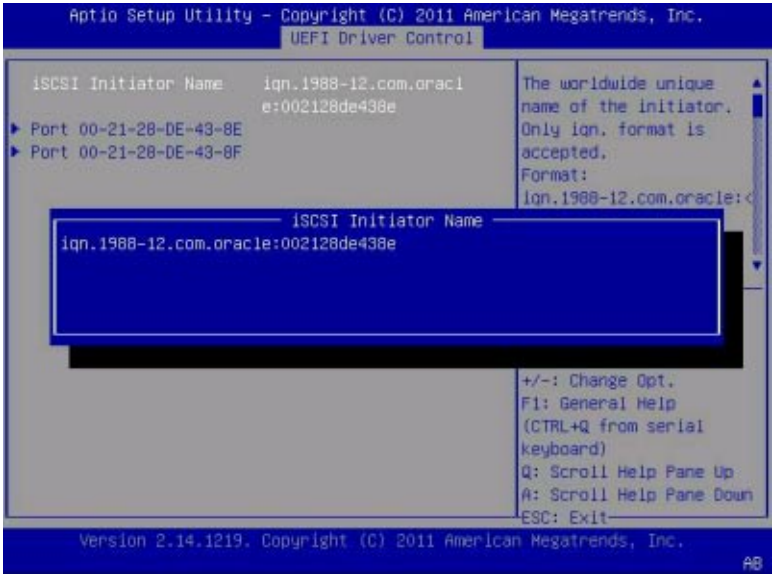


3 To access the iSCSI screen, select iSCSI.

4 Enter the iSCSI Initiator name.

a. Select iSCSI Initiator Name.

The iSCSI Initiator Name dialog appears.



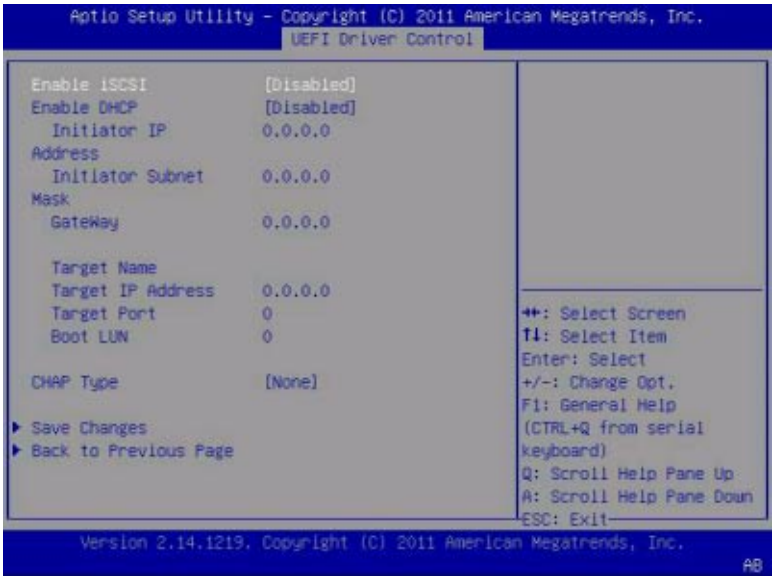
b. Type the initiator name in iqn format, for example:

`iqn.1988-12.com.oracle:000000000000`

5 **To connect to the iSCSI drive, select the appropriate NIC port MAC address, for example:**

Port 00-11-22-DD-2E-AB.

The port configuration screen appears.



6 **Set the Enable iSCSI value to Enabled.**

Select Enable iSCSI, and then select Enabled or Disabled.

7 **Set the Enable DHCP value to Enabled, if required.**

The Initiator IP address, Initiator Subnet Mask, and GateWay settings are removed.

If you set DHCP to disabled:

- **Type the Initiator IP address.**
- **Type the Initiator Subnet Mask.**
- **Type the Gateway.**

Note – Use the same subnet.

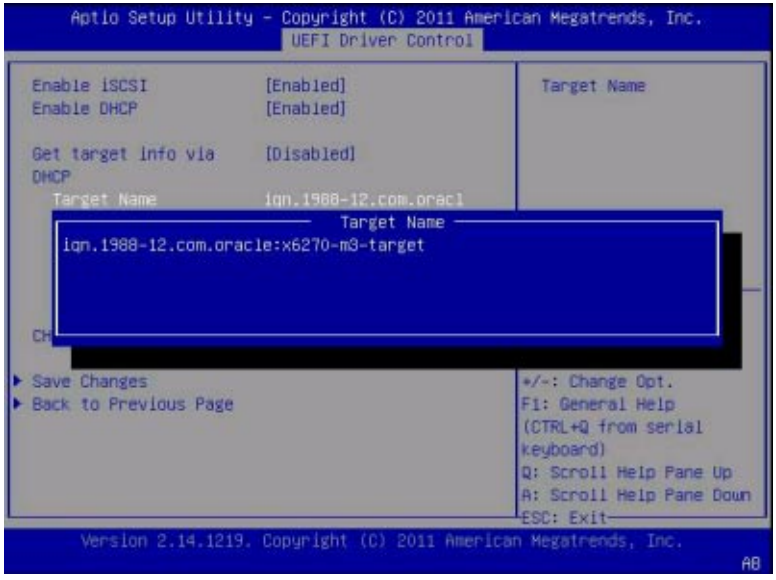
---

8 **Set Get target info via DHCP to Disabled, if required.**

9 **Set the Target Name.**

a. **Select Target Name.**

The Target Name dialog appears.



b. **Type the iqn target name for example:**

`iqn.1988-12.com.oracle:x6270-m3-target`

10 **Set the Target IP address.**

a. **Select Target IP address.**

The Target IP address dialog appears.

b. **Type the target IP address of the iSCSI server in dotted-decimal notation, for example:**

`111.111.1.11`.

11 **Set the Target port.**

a. **Select Target port.**

b. **Type the target port of the iSCSI server, , for example:**

`3210`.

Note – When iSCSI is enabled on a network port, PXE is disabled for that port.

12 **Set the Logical Unit Number.**

a. **Select Boot LUN.**

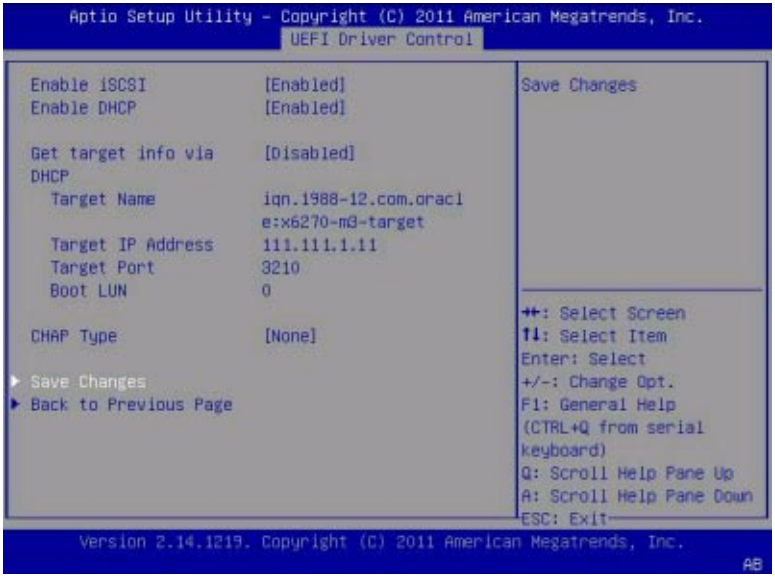
The Boot LUN dialog appears.

b. **Type the hexadecimal representation of the logical unit number, , for example:**

`0`.

13 **Set CHAP type to none, one way CHAP, or mutual CHAP.**

14 **Verify that your settings match the iSCSI target server information.**



15 **Save the changes and exit the BIOS Setup Utility.**

16 **Restart the server.**

17 **Press the F8 key (or Ctrl+P from a serial connection) when prompted while the BIOS is running the power-on self-test (POST) checkpoints.**

The Please Select Boot Device dialog box appears.

18 **Verify that the iSCSI target entry appears in the boot list.**

19 **For instructions on installing an OS on an iSCSI drive, refer to the supported OS installation documentation.**

More Information Related Information

- "Access BIOS Setup Utility Menus" on page 115
- "BIOS UEFI Driver Control Menu Selections" on page 177

▼ Exit BIOS Setup Utility

1 **Navigate to the top-level Save & Exit menu.**

2 **Use the up and down arrows to select the exit action you want.**

3 **To select the option, press the Enter key.**

A confirmation dialog box appears.

4 **To exit the BIOS Setup Utility, select OK in the confirmation dialog box.**

Save the changes and exit the Setup utility, or select an alternative exit option.

- **Alternatively, to save your changes and exit the BIOS Setup Utility, you can select the Save & Exit Menu and then select the Save Changes and Reset.**
- **Or to stop the exit process, select Cancel.**

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 when no settings were modified. The additional delay is required to ensure that changes to the BIOS settings are synchronized with Oracle ILOM.

More Information

Related Information

- "Access BIOS Setup Utility Menus" on page 115
- "BIOS Save & Exit Menu Selections" on page 183

BIOS Setup Utility Screen Reference

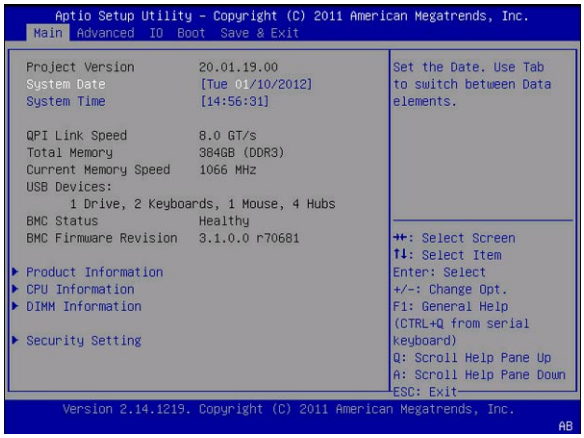
This section includes Web browser and searchable text-based representations of all screens in the BIOS Setup Utility.

BIOS Menu Description	Link
Review BIOS Main menu selections.	"BIOS Main Menu Selections" on page 149
Review BIOS Advanced menu selections.	"BIOS Advanced Menu Selections" on page 156
Review BIOS IO menu selections.	"BIOS IO Menu Selections" on page 167
Review BIOS Boot menu selections.	"BIOS Boot Menu Selections" on page 175
Review BIOS UEFI Driver Control menu selections.	"BIOS UEFI Driver Control Menu Selections" on page 177
Review BIOS Save & Exit menu selections.	"BIOS Save & Exit Menu Selections" on page 183

BIOS Main Menu Selections

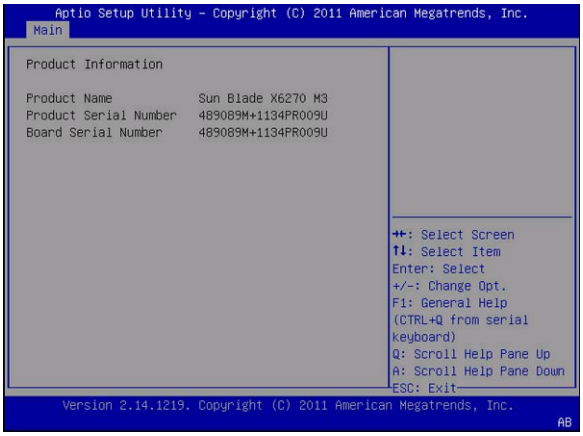
This section includes GUI screen captures of the BIOS menus and searchable text-based representations.

Main Menu



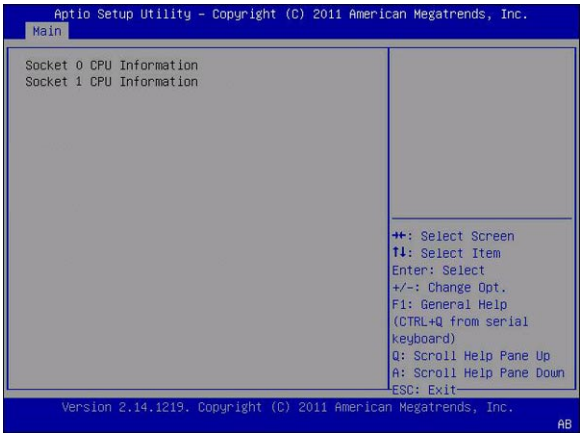

```
      Aptio Setup Utility - Copyright (C) 2011 American Megatrends, Inc.
    Main  Advanced  IO  Boot  Save & Exit
/-----------------------------------------------------+-------------------------\
|  Project Version          20.01.19.00               |Security Setting         |
|  System Date              [Tue 01/10/2012]          |                         |
|  System Time              [16:29:47]                |                         |
|                                                     |                         |
|  QPI Link Speed           8.0 GT/s                  |                         |
|  Total Memory             384GB (DDR3)              |                         |
|  Current Memory Speed     1066 MHz                  |                         |
|  USB Devices:                                       |                         |
|       1 Drive, 2 Keyboards, 1 Mouse, 4 Hubs         |                         |
|  BMC Status               Healthy                   |-------------------------|
|  BMC Firmware Revision    3.1.0.0 r70681            |><: Select Screen        |
|                                                     |^v: Select Item          |
|> Product Information                                |Enter: Select            |
|> CPU Information                                    |+/-: Change Opt.         |
|> DIMM Information                                   |F1: General Help         |
|                                                     |(CTRL+Q from serial      |
|> Security Setting                                   |keyboard)                |
|                                                     |Q: Scroll Help Pane Up   |
|                                                     |A: Scroll Help Pane Down |
\-----------------------------------------------------+ESC: Exit---------------/
        Version 2.14.1219. Copyright (C) 2011 American Megatrends, Inc.
```

Main > Product Information Screen




```
       Aptio Setup Utility - Copyright (C) 2011 American Megatrends, Inc.
    Main
/-----------------------------------------------------+-------------------------\
|  Product Name            Sun Blade X6270 M3         |                         |
|  Product Serial Number   489089M+1134PR009U         |                         |
|  Board Serial Number     489089M+1134PR009U         |                         |
|                                                     |                         |
|                                                     |                         |
|                                                     |                         |
|                                                     |                         |
|                                                     |                         |
|                                                     |                         |
|                                                     |-------------------------|
|                                                     |><: Select Screen        |
|                                                     |^v: Select Item          |
|                                                     |Enter: Select            |
|                                                     |+/-: Change Opt.         |
|                                                     |F1: General Help         |
|                                                     |F7: Discard Changes      |
|                                                     |F9: Optimized Defaults   |
|                                                     |F10: Save & Exit         |
|                                                     |ESC: Exit                |
\-----------------------------------------------------+-------------------------/
        Version 2.14.1219. Copyright (C) 2011 American Megatrends, Inc.
```

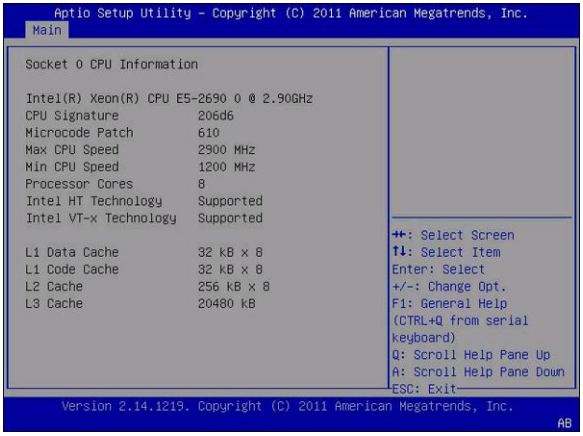
Main > CPU Information




```
       Aptio Setup Utility - Copyright (C) 2011 American Megatrends, Inc.
    Main
/-----------------------------------------------------+-------------------------\
|> Socket 0 CPU Information                           |Socket specific CPU      |
|> Socket 1 CPU Information                           |Information              |
|                                                     |                         |
|                                                     |                         |
|                                                     |                         |
|                                                     |                         |
|                                                     |                         |
|                                                     |                         |
|                                                     |                         |
|                                                     |-------------------------|
|                                                     |><: Select Screen        |
|                                                     |^v: Select Item          |
|                                                     |Enter: Select            |
|                                                     |+/-: Change Opt.         |
|                                                     |F1: General Help         |
|                                                     |F7: Discard Changes      |
|                                                     |F9: Optimized Defaults   |
|                                                     |F10: Save & Exit         |
|                                                     |ESC: Exit                |
\-----------------------------------------------------+-------------------------/
        Version 2.14.1219. Copyright (C) 2011 American Megatrends, Inc.
```

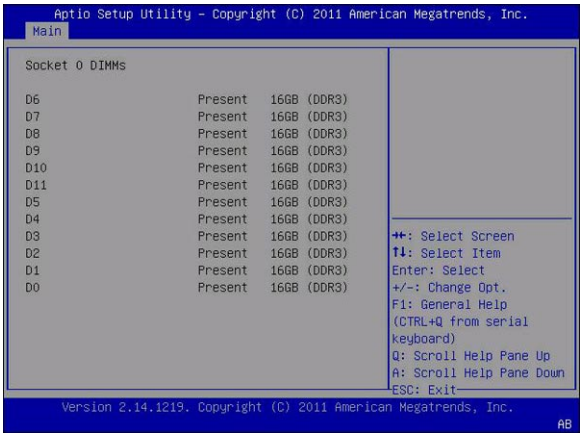
Main > CPU Information > Socket 0 CPU Information Screen

Note – Socket 0 CPU Information (shown) is similar to Socket 1 CPU Information (not shown).



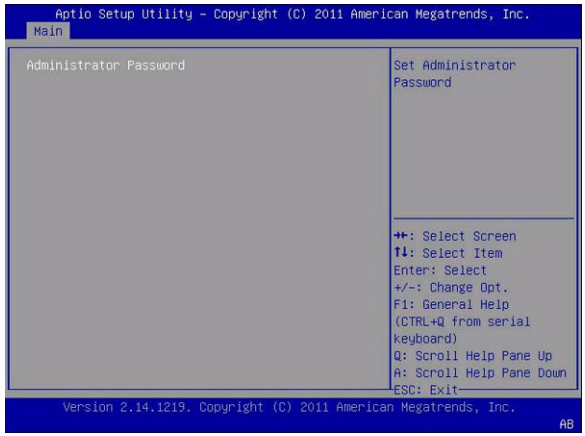

```
       Aptio Setup Utility - Copyright (C) 2011 American Megatrends, Inc.
    Main
/-----------------------------------------------------+-------------------------\
|  Socket 0 CPU Information                           |                         |
|                                                     |                         |
|  Genuine Intel(R) CPU @ 2.70GHz                     |                         |
|  CPU Signature           206d5                      |                         |
|  Microcode Patch         512                        |                         |
|  Max CPU Speed           2700 MHz                   |                         |
|  Min CPU Speed           1200 MHz                   |                         |
|  Processor Cores         8                          |                         |
|  Intel HT Technology     Supported                  |                         |
|  Intel VT-x Technology   Supported                  |-------------------------|
|                                                     |><: Select Screen        |
|  L1 Data Cache           32 kB x 8                  |^v: Select Item          |
|  L1 Code Cache           32 kB x 8                  |Enter: Select            |
|  L2 Cache                256 kB x 8                 |+/-: Change Opt.         |
|  L3 Cache                20480 kB                   |F1: General Help         |
|                                                     |F7: Discard Changes      |
|                                                     |F9: Optimized Defaults   |
|                                                     |F10: Save & Exit         |
|                                                     |ESC: Exit                |
\-----------------------------------------------------+-------------------------/
        Version 2.14.1219. Copyright (C) 2011 American Megatrends, Inc.
```

Main > DIMM Information




```
       Aptio Setup Utility - Copyright (C) 2011 American Megatrends, Inc.
    Main
/-----------------------------------------------------+-------------------------\
|  Socket 0 DIMMs                                     |                         |
|                                                     |                         |
|  D6                      Present   16GB (DDR3)      |                         |
|  D7                      Present   16GB (DDR3)      |                         |
|  D8                      Present   16GB (DDR3)      |                         |
|  D9                      Present   16GB (DDR3)      |                         |
|  D10                     Present   16GB (DDR3)      |                         |
|  D11                     Present   16GB (DDR3)      |                         |
|  D5                      Present   16GB (DDR3)      |                         |
|  D4                      Present   16GB (DDR3)      |-------------------------|
|  D3                      Present   16GB (DDR3)      |><: Select Screen        |
|  D2                      Present   16GB (DDR3)      |^v: Select Item          |
|  D1                      Present   16GB (DDR3)      |Enter: Select            |
|  D0                      Present   16GB (DDR3)      |+/-: Change Opt.         |
|                                                     |F1: General Help         |
|                                                     |(CTRL+Q from serial      |
|                                                     |keyboard)                |
|                                                     |Q: Scroll Help Pane Up   |
|                                                     |A: Scroll Help Pane Down |
\-----------------------------------------------------+ESC: Exit---------------/
        Version 2.14.1219. Copyright (C) 2011 American Megatrends, Inc.
```

Main > Security Setting

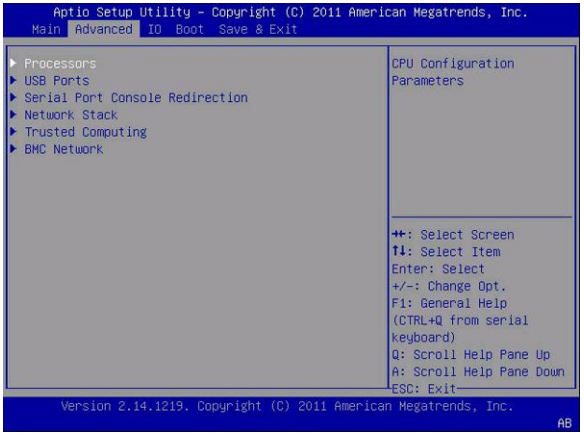



```
       Aptio Setup Utility - Copyright (C) 2011 American Megatrends, Inc.
    Main
/-----------------------------------------------------+-------------------------\
|  Administrator Password                             |Set Administrator        |
|                                                     |Password                 |
|                                                     |                         |
|                                                     |                         |
|                                                     |                         |
|                                                     |                         |
|                                                     |                         |
|                          / Create New Password -\   |                         |
|                          |                      |   |                         |
|                          \----------------------/   -------------------------|
|                                                      ><: Select Screen       |
|                                                     |^v: Select Item          |
|                                                     |Enter: Select            |
|                                                     |+/-: Change Opt.         |
|                                                     |F1: General Help         |
|                                                     |(CTRL+Q from serial      |
|                                                     |keyboard)                |
|                                                     |Q: Scroll Help Pane Up   |
|                                                     |A: Scroll Help Pane Down |
\-----------------------------------------------------+ESC: Exit----------------/
        Version 2.14.1219. Copyright (C) 2011 American Megatrends, Inc.
```

BIOS Advanced Menu Selections

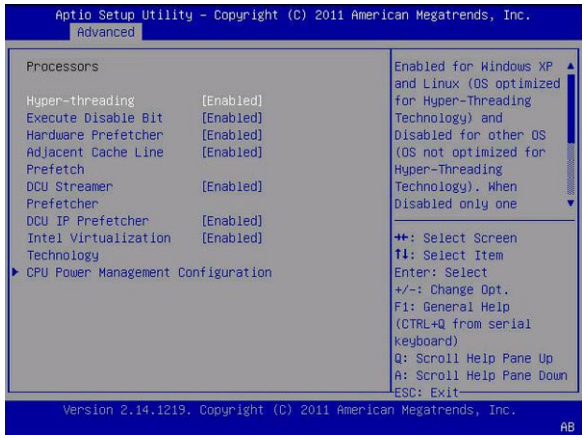
This section includes GUI screen captures of the BIOS menus and searchable text-based representations.

Advanced



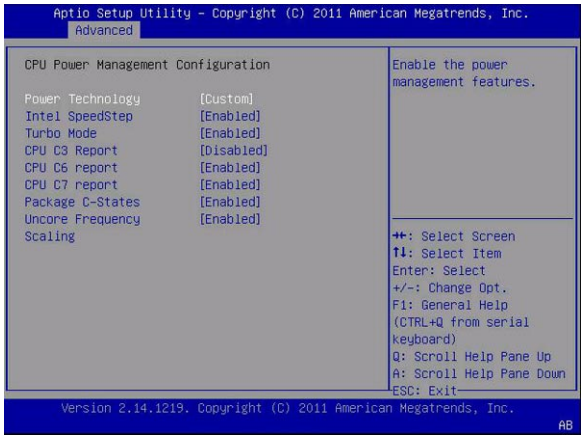
```
       Aptio Setup Utility - Copyright (C) 2011 American Megatrends, Inc.
    Main  Advanced  IO  Boot  Save & Exit
/-------------------------------------------------+-------------------------\
|> Processors                                     |CPU Configuration        |
|> USB Ports                                      |Parameters               |
|> Serial Port Console Redirection                |                         |
|> Network Stack                                  |                         |
|> Trusted Computing                              |                         |
|> BMC Network                                    |                         |
|                                                 |                         |
|                                                 |                         |
|                                                 |                         |
|                                                 |-------------------------|
|                                                 |><: Select Screen        |
|                                                 |^v: Select Item          |
|                                                 |Enter: Select            |
|                                                 |+/-: Change Opt.         |
|                                                 |F1: General Help         |
|                                                 |(CTRL+Q from serial      |
|                                                 |keyboard)                |
|                                                 |Q: Scroll Help Pane Up   |
|                                                 |A: Scroll Help Pane Down |
\-------------------------------------------------+ESC: Exit---------------/
        Version 2.14.1219. Copyright (C) 2011 American Megatrends, Inc.
```

Advanced > Processors



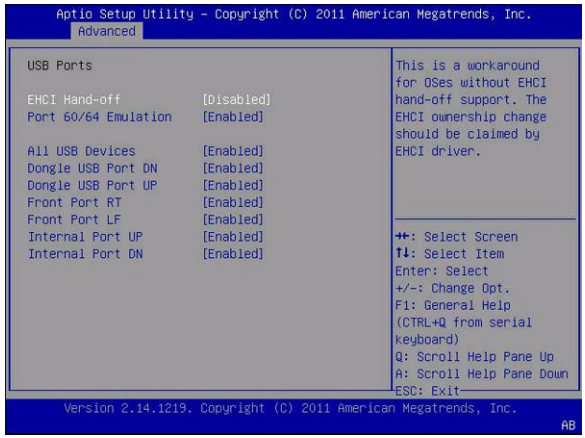
```
       Aptio Setup Utility - Copyright (C) 2011 American Megatrends, Inc.
          Advanced
/---------------------------------------------------+------------------------\
|  Processors                                       |Enabled for Windows XP  ^|
|                                                   |and Linux (OS optimized *|
|  Hyper-threading          [Enabled]               |for Hyper-Threading     *|
|  Execute Disable Bit      [Enabled]               |Technology) and         *|
|  Hardware Prefetcher      [Enabled]               |Disabled for other OS   *|
|  Adjacent Cache Line      [Enabled]               |(OS not optimized for   +|
|  Prefetch                                         |Hyper-Threading         +|
|  DCU Streamer             [Enabled]               |Technology). When       +|
|  Prefetcher                                       |Disabled only one       v|
|  DCU IP Prefetcher        [Enabled]               |------------------------|
|  Intel Virtualization     [Enabled]               |><: Select Screen        |
|  Technology                                       |^v: Select Item          |
|> CPU Power Management Configuration               |Enter: Select            |
|                                                   |+/-: Change Opt.         |
|                                                   |F1: General Help         |
|                                                   |(CTRL+Q from serial      |
|                                                   |keyboard)                |
|                                                   |Q: Scroll Help Pane Up   |
|                                                   |A: Scroll Help Pane Down |
\---------------------------------------------------+ESC: Exit---------------/
        Version 2.14.1219. Copyright (C) 2011 American Megatrends, Inc.
```

Advanced > Processors > CPU Power Management Configuration



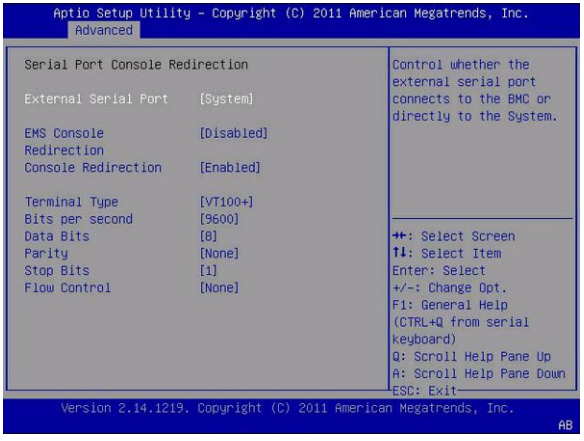
```
       Aptio Setup Utility - Copyright (C) 2011 American Megatrends, Inc.
          Advanced
/-----------------------------------------------------+------------------------\
|  CPU Power Management Configuration                 |Enable the power        |
|                                                     |management features.    |
|  Power Technology        [Custom]                   |                        |
|  Intel SpeedStep         [Enabled]                  |                        |
|  Turbo Mode              [Enabled]                  |                        |
|  CPU C3 Report           [Disabled]                 |                        |
|  CPU C6 report           [Enabled]                  |                        |
|  CPU C7 report           [Enabled]                  |                        |
|  Package C-States        [Enabled]                  |                        |
|  Uncore Frequency        [Enabled]                  |------------------------|
|  Scaling                                            |><: Select Screen       |
|                                                     |^v: Select Item         |
|                                                     |Enter: Select           |
|                                                     |+/-: Change Opt.        |
|                                                     |F1: General Help        |
|                                                     |(CTRL+Q from serial     |
|                                                     |keyboard)               |
|                                                     |Q: Scroll Help Pane Up  |
|                                                     |A: Scroll Help Pane Down|
\-----------------------------------------------------+ESC: Exit---------------/
        Version 2.14.1219. Copyright (C) 2011 American Megatrends, Inc.
```

Advanced > USB Ports



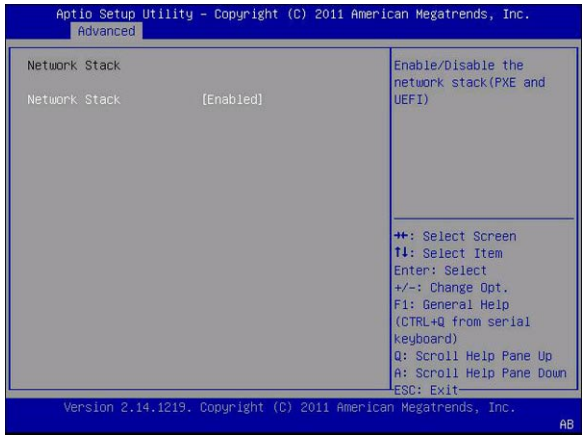
```
       Aptio Setup Utility - Copyright (C) 2011 American Megatrends, Inc.
          Advanced
/---------------------------------------------------+------------------------\
|  USB Ports                                        |This is a workaround    |
|                                                   |for OSes without EHCI   |
|  EHCI Hand-off           [Disabled]               |hand-off support. The   |
|  Port 60/64 Emulation    [Enabled]                |EHCI ownership change   |
|                                                   |should be claimed by    |
|  All USB Devices         [Enabled]                |EHCI driver.            |
|  Dongle USB Port DN      [Enabled]                |                        |
|  Dongle USB Port UP      [Enabled]                |                        |
|  Front Port RT           [Enabled]                |                        |
|  Front Port LF           [Enabled]                |------------------------|
|  Internal Port UP        [Enabled]                |><: Select Screen       |
|  Internal Port DN        [Enabled]                |^v: Select Item         |
|                                                   |Enter: Select           |
|                                                   |+/-: Change Opt.        |
|                                                   |F1: General Help        |
|                                                   |(CTRL+Q from serial     |
|                                                   |keyboard)               |
|                                                   |Q: Scroll Help Pane Up  |
|                                                   |A: Scroll Help Pane Down|
\---------------------------------------------------+ESC: Exit---------------/
        Version 2.14.1219. Copyright (C) 2011 American Megatrends, Inc.
```

Advanced > Serial Port Console Redirection



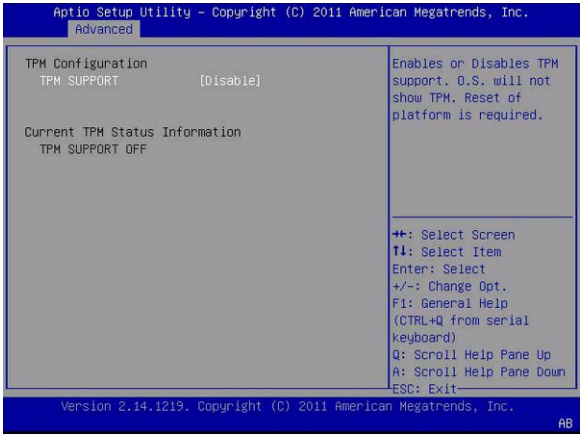
```
       Aptio Setup Utility - Copyright (C) 2011 American Megatrends, Inc.
          Advanced
/-------------------------------------------------+------------------------\
|  Serial Port Console Redirection                |Control whether the     |
|                                                 |external serial port    |
|  External Serial Port    [System]               |connects to the BMC or  |
|                                                 |directly to the System. |
|  EMS Console             [Disabled]             |                        |
|  Redirection                                    |                        |
|  Console Redirection     [Enabled]              |                        |
|                                                 |                        |
|  Terminal Type           [VT100+]               |                        |
|  Bits per second         [9600]                 |------------------------|
|  Data Bits               [8]                    |><: Select Screen       |
|  Parity                  [None]                 |^v: Select Item         |
|  Stop Bits               [1]                    |Enter: Select           |
|  Flow Control            [None]                 |+/-: Change Opt.        |
|                                                 |F1: General Help        |
|                                                 |(CTRL+Q from serial     |
|                                                 |keyboard)               |
|                                                 |Q: Scroll Help Pane Up  |
|                                                 |A: Scroll Help Pane Down|
\-------------------------------------------------+ESC: Exit---------------/
        Version 2.14.1219. Copyright (C) 2011 American Megatrends, Inc.
```

Advanced > Network Stack



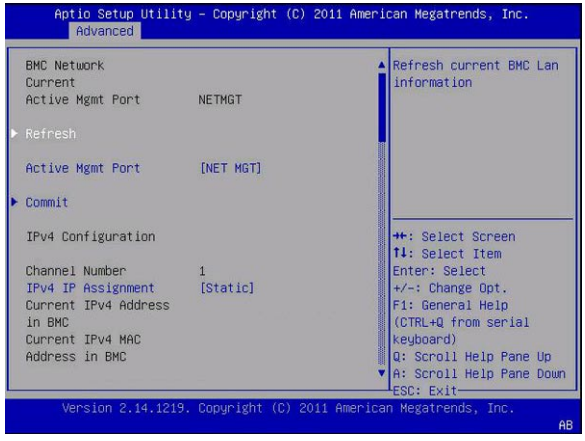
```
       Aptio Setup Utility - Copyright (C) 2011 American Megatrends, Inc.
          Advanced
/-------------------------------------------------+------------------------\
|  Network Stack                                  |Enable/Disable the      |
|                                                 |network stack(PXE and   |
|  Network Stack           [Enabled]              |UEFI)                   |
|                                                 |                        |
|                                                 |                        |
|                                                 |                        |
|                                                 |                        |
|                                                 |                        |
|                                                 |                        |
|                                                 |------------------------|
|                                                 |><: Select Screen       |
|                                                 |^v: Select Item         |
|                                                 |Enter: Select           |
|                                                 |+/-: Change Opt.        |
|                                                 |F1: General Help        |
|                                                 |(CTRL+Q from serial     |
|                                                 |keyboard)               |
|                                                 |Q: Scroll Help Pane Up  |
|                                                 |A: Scroll Help Pane Down|
\-------------------------------------------------+ESC: Exit--------------/
        Version 2.14.1219. Copyright (C) 2011 American Megatrends, Inc.
```

Advanced > TPM Configuration



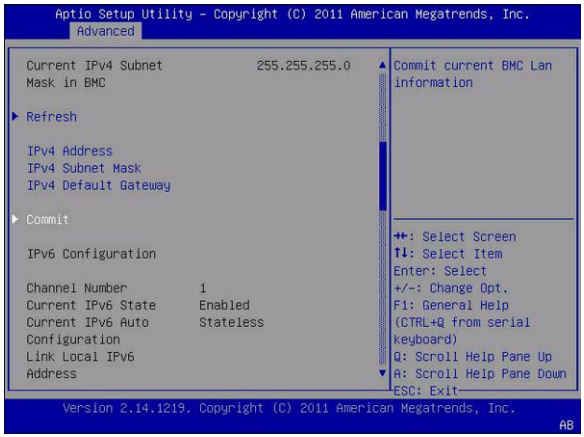
```
       Aptio Setup Utility - Copyright (C) 2011 American Megatrends, Inc.
          Advanced
/---------------------------------------------------+------------------------\
|  TPM Configuration                                |Enables or Disables TPM  |
|    TPM SUPPORT           [Disable]                |support. O.S. will not   |
|                                                   |show TPM. Reset of       |
|                                                   |platform is required.    |
|  Current TPM Status Information                   |                         |
|    TPM SUPPORT OFF                                |                         |
|                                                   |                         |
|                                                   |                         |
|                                                   |                         |
|                                                   |-------------------------|
|                                                   |><: Select Screen        |
|                                                   |^v: Select Item          |
|                                                   |Enter: Select            |
|                                                   |+/-: Change Opt.         |
|                                                   |F1: General Help         |
|                                                   |(CTRL+Q from serial      |
|                                                   |keyboard)                |
|                                                   |Q: Scroll Help Pane Up   |
|                                                   |A: Scroll Help Pane Down |
\---------------------------------------------------+ESC: Exit---------------/
        Version 2.14.1219. Copyright (C) 2011 American Megatrends, Inc.
```

Advanced > BMC Network



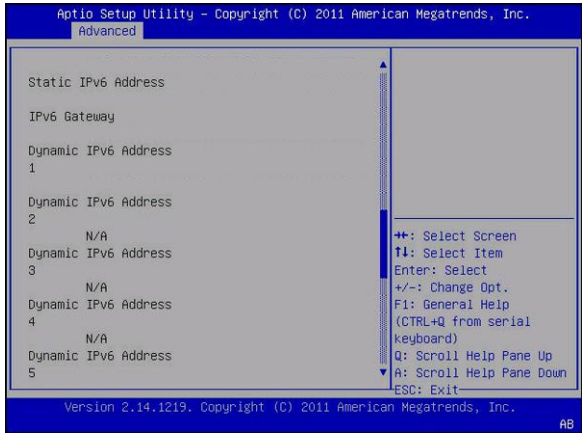
```
       Aptio Setup Utility - Copyright (C) 2011 American Megatrends, Inc.
          Advanced
/---------------------------------------------------+------------------------\
|  BMC Network                                      ^|Refresh current BMC Lan  |
|  Current                                          *|information              |
|  Active Mgmt Port        NETMGT                   *|                         |
|                                                   *|                         |
|> Refresh                                          *|                         |
|                                                   +|                         |
|  Active Mgmt Port        [NET MGT]                +|                         |
|                                                   +|                         |
|> Commit                                           +|                         |
|                                                   +|-------------------------|
|  IPv4 Configuration                               +|><: Select Screen        |
|                                                   +|^v: Select Item          |
|  Channel Number          1                        +|Enter: Select            |
|  IPv4 IP Assignment      [Static]                 +|+/-: Change Opt.         |
|  Current IPv4 Address                             +|F1: General Help         |
|  in BMC                                           +|(CTRL+Q from serial      |
|  Current IPv4 MAC                                 +|keyboard)                |
|  Address in BMC                                   +|Q: Scroll Help Pane Up   |
|                              v|A: Scroll Help Pane Down |
\---------------------------------------------------+ESC: Exit---------------/
        Version 2.14.1219. Copyright (C) 2011 American Megatrends, Inc.
```

Advanced > BMC Network (Continued)



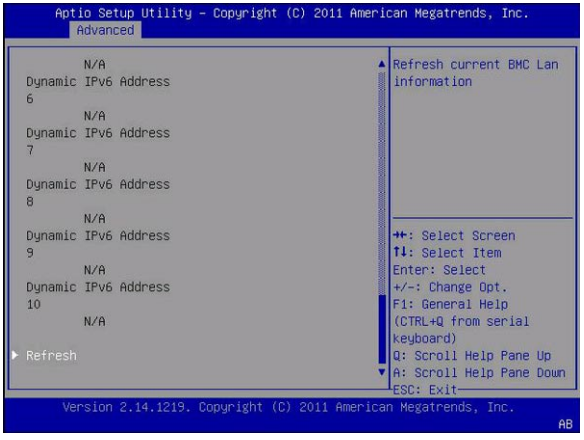
```
       Aptio Setup Utility - Copyright (C) 2011 American Megatrends, Inc.
          Advanced
/-------------------------------------------------+------------------------\
|  Current IPv4 Subnet             255.255.255.0  ^|Commit current BMC Lan   |
|  Mask in BMC                                    +|information             |
|                                                 +|                        |
|> Refresh                                        +|                        |
|                                                 +|                        |
|  IPv4 Address                                   *|                        |
|  IPv4 Subnet Mask                               *|                        |
|  IPv4 Default Gateway                           *|                        |
|                                                 *|                        |
|> Commit                                         +|------------------------|
|                                                 +|><: Select Screen       |
|  IPv6 Configuration                             +|^v: Select Item         |
|                                                 +|Enter: Select           |
|  Channel Number          1                      +|+/-: Change Opt.        |
|  Current IPv6 State      Enabled                +|F1: General Help        |
|  Current IPv6 Auto       Stateless              +|(CTRL+Q from serial     |
|  Configuration                                  +|keyboard)               |
|  Link Local IPv6                                +|Q: Scroll Help Pane Up  |
|  Address                                        v|A: Scroll Help Pane Down |
\-------------------------------------------------+ESC: Exit---------------/
       Version 2.14.1219. Copyright (C) 2011 American Megatrends, Inc.
                                                                          AB
```

Advanced > BMC Network (Continued)



```
       Aptio Setup Utility - Copyright (C) 2011 American Megatrends, Inc.
          Advanced
/-----------------------------------------------------+-------------------------\
|                                                     ^|                         |
|  Static IPv6 Address                                +|                         |
|                                                     +|                         |
|  IPv6 Gateway                                       +|                         |
|                                                     +|                         |
|  Dynamic IPv6 Address                               +|                         |
|  1                                                  +|                         |
|                                                     +|                         |
|  Dynamic IPv6 Address                               +|                         |
|  2                                                  *|-------------------------|
|          N/A                                        *|><: Select Screen        |
|  Dynamic IPv6 Address                               *|^v: Select Item          |
|  3                                                  *|Enter: Select            |
|          N/A                                        +|+/-: Change Opt.         |
|  Dynamic IPv6 Address                               +|F1: General Help         |
|  4                                                  +|(CTRL+Q from serial      |
|          N/A                                        +|keyboard)                |
|  Dynamic IPv6 Address                               +|Q: Scroll Help Pane Up   |
|  5                                                  v|A: Scroll Help Pane Down |
\-----------------------------------------------------+ESC: Exit----------------/
        Version 2.14.1219. Copyright (C) 2011 American Megatrends, Inc.
                                                                              AB
```

Advanced > BMC Network (Continued)

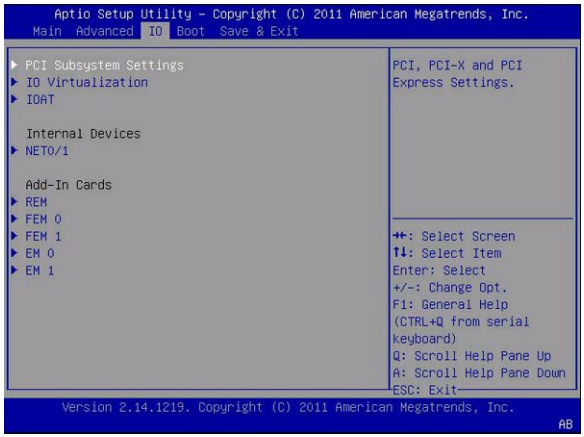


```
       Aptio Setup Utility - Copyright (C) 2011 American Megatrends, Inc.
          Advanced
/-------------------------------------------------+------------------------\
|          N/A                                    ^|Refresh current BMC Lan  |
|  Dynamic IPv6 Address                           +|information              |
|  6                                              +|                         |
|          N/A                                    +|                         |
|  Dynamic IPv6 Address                           +|                         |
|  7                                              +|                         |
|          N/A                                    +|                         |
|  Dynamic IPv6 Address                           +|                         |
|  8                                              +|                         |
|          N/A                                    +|-------------------------|
|  Dynamic IPv6 Address                           +|><: Select Screen        |
|  9                                              +|^v: Select Item          |
|          N/A                                    +|Enter: Select            |
|  Dynamic IPv6 Address                           +|+/-: Change Opt.         |
|  10                                             *|F1: General Help         |
|          N/A                                    *|(CTRL+Q from serial      |
|                                                 *|keyboard)                |
|> Refresh                                        *|Q: Scroll Help Pane Up   |
|                                                 v|A: Scroll Help Pane Down |
\-------------------------------------------------+ESC: Exit----------------/
        Version 2.14.1219. Copyright (C) 2011 American Megatrends, Inc.
                                                                          AB
```

BIOS IO Menu Selections

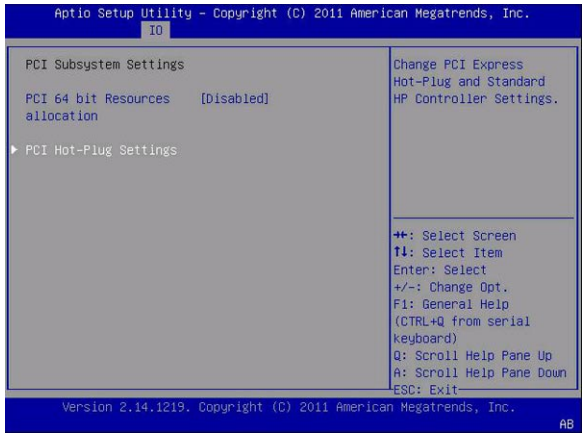
This section includes GUI screen captures of the BIOS menus and searchable text-based representations.

Header



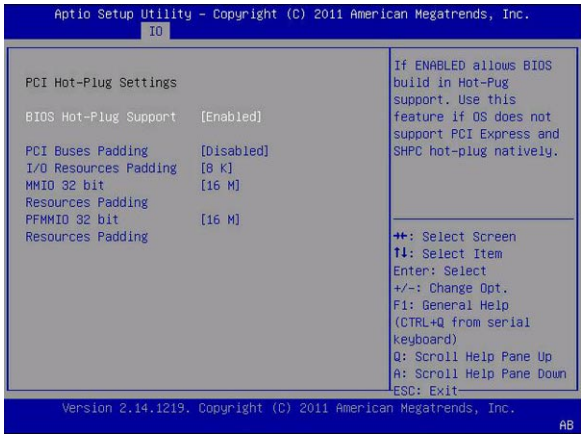

```
      Aptio Setup Utility - Copyright (C) 2011 American Megatrends, Inc.
    Main  Advanced  IO  Boot  Save & Exit
/-----------------------------------------------------+-------------------------\
|> PCI Subsystem Settings                             |PCI, PCI-X and PCI       |
|> IO Virtualization                                  |Express Settings.        |
|> IOAT                                               |                         |
|                                                     |                         |
|  Internal Devices                                   |                         |
|> NET0/1                                             |                         |
|                                                     |                         |
|  Add-In Cards                                       |                         |
|> REM                                                |                         |
|> FEM 0                                              |-------------------------|
|> FEM 1                                              |><: Select Screen        |
|> EM 0                                               |^v: Select Item          |
|> EM 1                                               |Enter: Select            |
|                                                     |+/-: Change Opt.         |
|                                                     |F1: General Help         |
|                                                     |(CTRL+Q from serial      |
|                                                     |keyboard)                |
|                                                     |Q: Scroll Help Pane Up   |
|                                                     |A: Scroll Help Pane Down |
\-----------------------------------------------------+ESC: Exit---------------/
        Version 2.14.1219. Copyright (C) 2011 American Megatrends, Inc.
```

IO > PCI Subsystem Settings



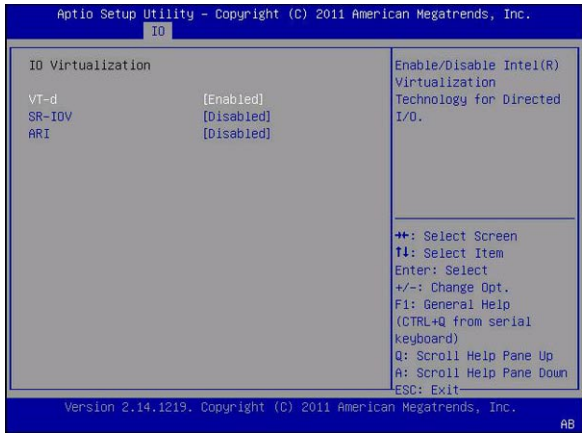

```
       Aptio Setup Utility - Copyright (C) 2011 American Megatrends, Inc.
                     IO
/-----------------------------------------------------+-------------------------\
|  PCI Subsystem Settings                            |Enables or Disables      |
|                                                    |64bit capable Devices    |
|  PCI 64 bit Resources    [Disabled]                |to be Decoded in Above   |
|  allocation                                        |4G Address Space (Only   |
|                                                    |if System Supports 64    |
|> PCI Hot-Plug Settings                             |bit PCI Decoding).       |
|                                                    |                         |
|                                                    |                         |
|                                                    |                         |
|                                                    |-------------------------|
|                                                    |><: Select Screen        |
|                                                    |^v: Select Item          |
|                                                    |Enter: Select            |
|                                                    |+/-: Change Opt.         |
|                                                    |F1: General Help         |
|                                                    |(CTRL+Q from serial      |
|                                                    |keyboard)                |
|                                                    |Q: Scroll Help Pane Up   |
|                                                    |A: Scroll Help Pane Down |
\-----------------------------------------------------+ESC: Exit----------------/
       Version 2.14.1219. Copyright (C) 2011 American Megatrends, Inc.
```

IO > PCI Hot-Plug Settings




```
      Aptio Setup Utility - Copyright (C) 2011 American Megatrends, Inc.
                   IO
/-----------------------------------------------------+-------------------------\
|                                                     |If ENABLED allows BIOS   |
|  PCI Hot-Plug Settings                              |build in Hot-Pug         |
|                                                     |support. Use this        |
|  BIOS Hot-Plug Support   [Enabled]                  |feature if OS does not   |
|                                                     |support PCI Express and  |
|  PCI Buses Padding       [Disabled]                 |SHPC hot-plug natively.  |
|  I/O Resources Padding   [8 K]                      |                         |
|  MMIO 32 bit             [16 M]                     |                         |
|  Resources Padding                                  |                         |
|  PFMMIO 32 bit           [16 M]                     |-------------------------|
|  Resources Padding                                  |><: Select Screen        |
|                                                     |^v: Select Item          |
|                                                     |Enter: Select            |
|                                                     |+/-: Change Opt.         |
|                                                     |F1: General Help         |
|                                                     |(CTRL+Q from serial      |
|                                                     |keyboard)                |
|                                                     |Q: Scroll Help Pane Up   |
|                                                     |A: Scroll Help Pane Down |
\-----------------------------------------------------+ESC: Exit---------------/
        Version 2.14.1219. Copyright (C) 2011 American Megatrends, Inc.
```

IO > IO Virtualization

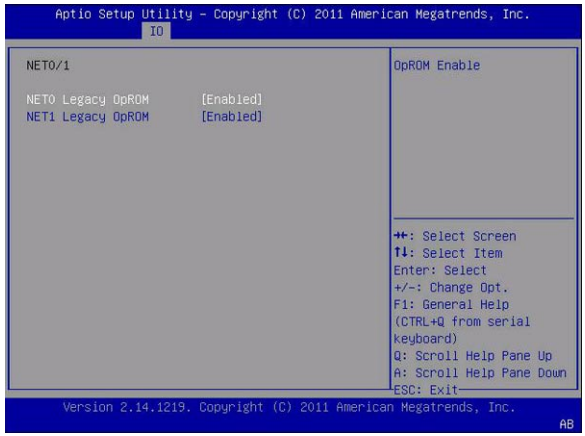



```
       Aptio Setup Utility - Copyright (C) 2011 American Megatrends, Inc.
                     IO
/-----------------------------------------------------+-------------------------\
|  IO Virtualization                                  |Enable/Disable Intel(R)  |
|                                                     |Virtualization           |
|  VT-d                    [Enabled]                  |Technology for Directed  |
|  SR-IOV                  [Disabled]                 |I/O.                     |
|  ARI                     [Disabled]                 |                         |
|                                                     |                         |
|                                                     |                         |
|                                                     |                         |
|                                                     |                         |
|                                                     |-------------------------|
|                                                     |><: Select Screen        |
|                                                     |^v: Select Item          |
|                                                     |Enter: Select            |
|                                                     |+/-: Change Opt.         |
|                                                     |F1: General Help         |
|                                                     |(CTRL+Q from serial      |
|                                                     |keyboard)                |
|                                                     |Q: Scroll Help Pane Up   |
|                                                     |A: Scroll Help Pane Down |
\-----------------------------------------------------+ESC: Exit----------------/
       Version 2.14.1219. Copyright (C) 2011 American Megatrends, Inc.
```

IO > IOAT


```
      Aptio Setup Utility - Copyright (C) 2011 American Megatrends, Inc.
                   IO
/-----------------------------------------------------+-------------------------\
|  IOAT                                               |Enables/Disables         |
|                                                     |Intel(R) I/O             |
|  Intel(R) I/OAT          [Enabled]                  |Acceleration Technology  |
|  DCA Support             [Enabled]                  |(I/OAT).                 |
|                                                     |                         |
|                                                     |                         |
|                                                     |                         |
|                                                     |                         |
|                                                     |                         |
|                                                     |-------------------------|
|                                                     |><: Select Screen        |
|                                                     |^v: Select Item          |
|                                                     |Enter: Select            |
|                                                     |+/-: Change Opt.         |
|                                                     |F1: General Help         |
|                                                     |(CTRL+Q from serial      |
|                                                     |keyboard)                |
|                                                     |Q: Scroll Help Pane Up   |
|                                                     |A: Scroll Help Pane Down |
\-----------------------------------------------------+ESC: Exit----------------/
       Version 2.14.1219. Copyright (C) 2011 American Megatrends, Inc.
```

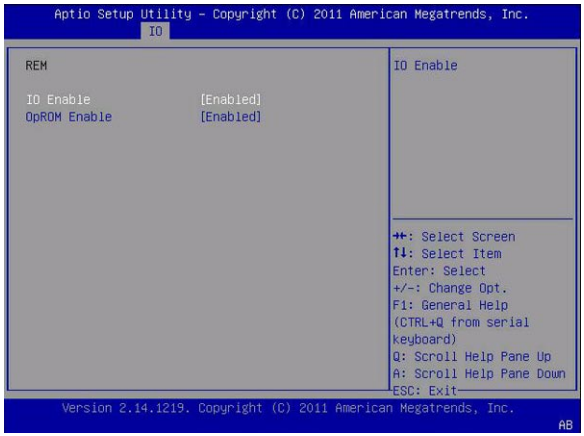
IO > NET0/1




```
       Aptio Setup Utility - Copyright (C) 2011 American Megatrends, Inc.
                     IO
/-----------------------------------------------------+-------------------------\
|  NET0/1                                             |OpROM Enable             |
|                                                     |                         |
|  NET0 Legacy OpROM       [Enabled]                  |                         |
|  NET1 Legacy OpROM       [Enabled]                  |                         |
|                                                     |                         |
|                                                     |                         |
|                                                     |                         |
|                                                     |                         |
|                                                     |                         |
|                                                     |-------------------------|
|                                                     |><: Select Screen        |
|                                                     |^v: Select Item          |
|                                                     |Enter: Select            |
|                                                     |+/-: Change Opt.         |
|                                                     |F1: General Help         |
|                                                     |(CTRL+Q from serial      |
|                                                     |keyboard)                |
|                                                     |Q: Scroll Help Pane Up   |
|                                                     |A: Scroll Help Pane Down |
\-----------------------------------------------------+ESC: Exit----------------/
       Version 2.14.1219. Copyright (C) 2011 American Megatrends, Inc.
```

IO > REM

A REM screen is shown as sample add-in card. REMs, FEMs, and EMs are similar.

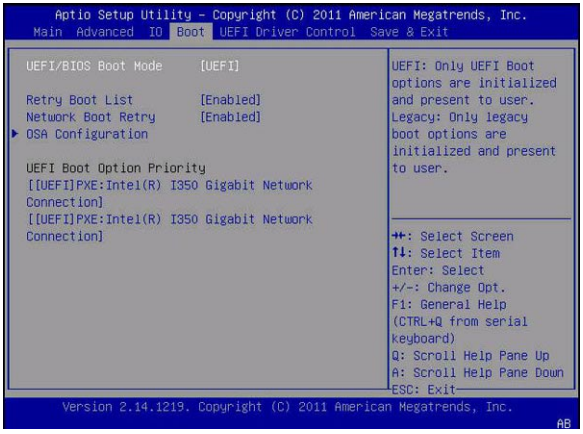



```
       Aptio Setup Utility - Copyright (C) 2011 American Megatrends, Inc.
                    IO
/-----------------------------------------------------+-------------------------\
|  REM                                                |IO Enable                |
|                                                     |                         |
|  IO Enable                [Enabled]                 |                         |
|  OpROM Enable             [Enabled]                 |                         |
|                                                     |                         |
|                                                     |                         |
|                                                     |                         |
|                                                     |                         |
|                                                     |                         |
|                                                     |                         |
|                                                     |-------------------------|
|                                                     |><: Select Screen        |
|                                                     |^v: Select Item          |
|                                                     |Enter: Select            |
|                                                     |+/-: Change Opt.         |
|                                                     |F1: General Help         |
|                                                     |(CTRL+Q from serial      |
|                                                     |keyboard)                |
|                                                     |Q: Scroll Help Pane Up   |
|                                                     |A: Scroll Help Pane Down |
\-----------------------------------------------------+ESC: Exit----------------/
        Version 2.14.1219. Copyright (C) 2011 American Megatrends, Inc.
```

BIOS Boot Menu Selections

This section includes GUI screen captures of the BIOS menus and searchable text-based representations.

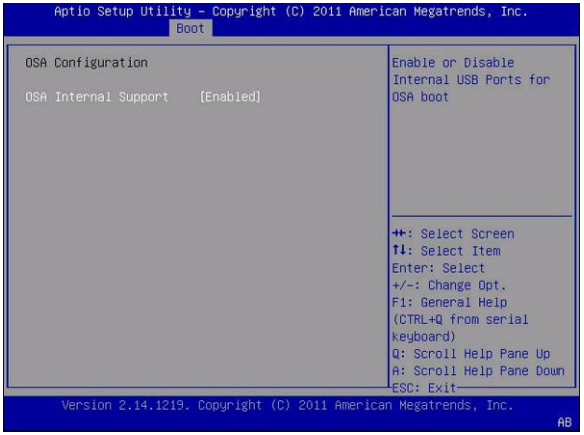
UEFI/BIOS Boot Mode



Note – For the UEFI Driver Control menu to appear, the UEFI value must be selected in the UEFI/BIOS Boot Mode screen .

```
       Aptio Setup Utility - Copyright (C) 2011 American Megatrends, Inc.
    Main  Advanced  IO  Boot  UEFI Driver Control  Save & Exit
/-------------------------------------------------+------------------------\
|  UEFI/BIOS Boot Mode     [UEFI]                 |UEFI: Only UEFI Boot    |
|                                                 |options are initialized |
|  Retry Boot List         [Enabled]              |and present to user.    |
|  Network Boot Retry      [Enabled]              |Legacy: Only legacy     |
|> OSA Configuration                              |boot options are        |
|                                                 |initialized and present |
|  UEFI Boot Option Priority                      |to user.                |
|  [[UEFI]PXE:Intel(R) I350 Gigabit Network       |                        |
|  Connection]                                    |                        |
|  [[UEFI]PXE:Intel(R) I350 Gigabit Network       |------------------------|
|  Connection]                                    |><: Select Screen       |
|                                                 |^v: Select Item         |
|                                                 |Enter: Select           |
|                                                 |+/-: Change Opt.        |
|                                                 |F1: General Help        |
|                                                 |(CTRL+Q from serial     |
|                                                 |keyboard)               |
|                                                 |Q: Scroll Help Pane Up  |
|                                                 |A: Scroll Help Pane Down|
\-------------------------------------------------+ESC: Exit--------------/
        Version 2.14.1219. Copyright (C) 2011 American Megatrends, Inc.
```

Boot > OSA Configuration



```
       Aptio Setup Utility - Copyright (C) 2011 American Megatrends, Inc.
                        Boot
/-------------------------------------------------+------------------------\
|  OSA Configuration                              |Enable or Disable       |
|                                                 |Internal USB Ports for  |
|  OSA Internal Support    [Enabled]              |OSA boot                |
|                                                 |                        |
|                                                 |                        |
|                                                 |                        |
|                                                 |                        |
|                                                 |                        |
|                                                 |                        |
|                                                 |------------------------|
|                                                 |><: Select Screen       |
|                                                 |^v: Select Item         |
|                                                 |Enter: Select           |
|                                                 |+/-: Change Opt.        |
|                                                 |F1: General Help        |
|                                                 |(CTRL+Q from serial     |
|                                                 |keyboard)               |
|                                                 |Q: Scroll Help Pane Up  |
|                                                 |A: Scroll Help Pane Down|
\-------------------------------------------------+ESC: Exit---------------/
        Version 2.14.1219. Copyright (C) 2011 American Megatrends, Inc.
```

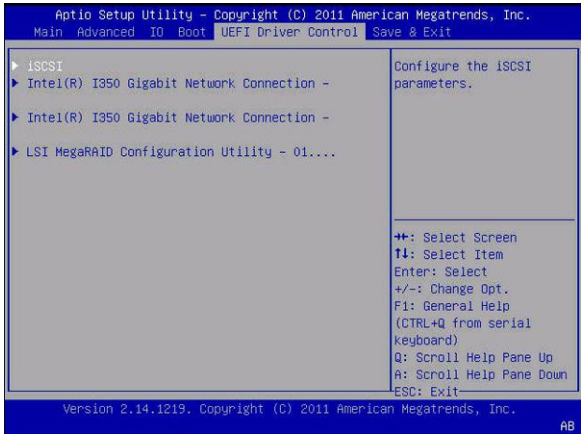
BIOS UEFI Driver Control Menu Selections

This section includes GUI screen captures of the BIOS menus and searchable text-based representations.

Note – For the UEFI Driver Control menu to appear, the UEFI value must be selected in the UEFI/BIOS Boot Mode screen.

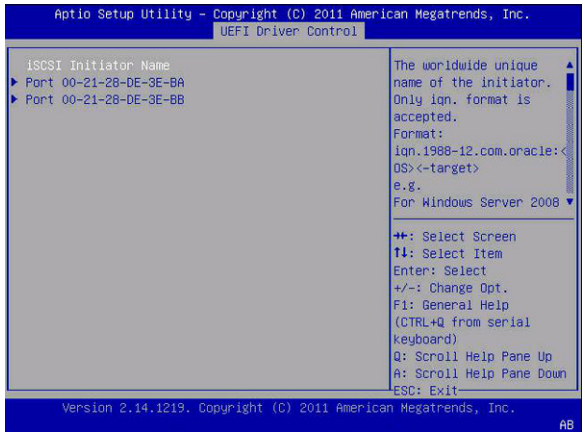
UEFI Driver Control

For the UEFI Driver Control menu to appear, the UEFI value must be selected in the UEFI/BIOS Boot Mode screen.



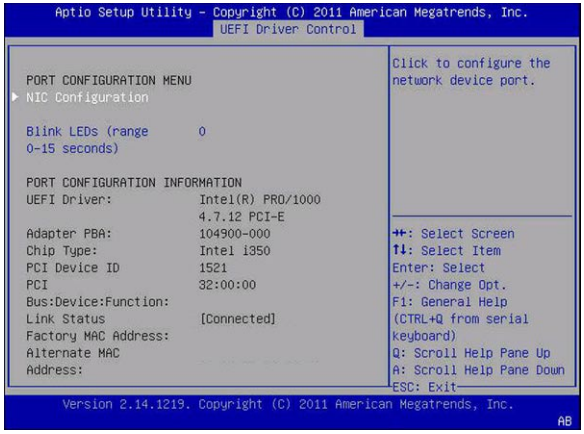

```
       Aptio Setup Utility - Copyright (C) 2011 American Megatrends, Inc.
    Main  Advanced  IO  Boot  UEFI Driver Control  Save & Exit
/-----------------------------------------------------+-------------------------\
|> iSCSI                                              |Configure the iSCSI      |
|> Intel(R) I350 Gigabit Network Connection -         |parameters.              |
|                                                     |                         |
|> Intel(R) I350 Gigabit Network Connection -         |                         |
|                                                     |                         |
|> LSI MegaRAID Configuration Utility - 01....        |                         |
|                                                     |                         |
|                                                     |                         |
|                                                     |                         |
|                                                     |-------------------------|
|                                                     |><: Select Screen        |
|                                                     |^v: Select Item          |
|                                                     |Enter: Select            |
|                                                     |+/-: Change Opt.         |
|                                                     |F1: General Help         |
|                                                     |(CTRL+Q from serial      |
|                                                     |keyboard)                |
|                                                     |Q: Scroll Help Pane Up   |
|                                                     |A: Scroll Help Pane Down |
\-----------------------------------------------------+ESC: Exit---------------/
        Version 2.14.1219. Copyright (C) 2011 American Megatrends, Inc.
```

UEFI Driver Control > iSCSI



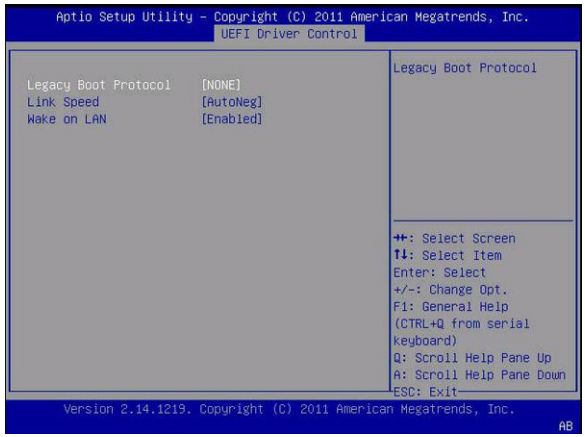

```
       Aptio Setup Utility - Copyright (C) 2011 American Megatrends, Inc.
                              UEFI Driver Control
/-----------------------------------------------------+-------------------------\
|  iSCSI Initiator Name                               |The worldwide unique    ^|
|> Port 00-21-28-DE-3E-BA                             |name of the initiator.  *|
|> Port 00-21-28-DE-3E-BB                             |Only iqn. format is     +|
|                                                     |accepted.               +|
|                                                     |Format:                 +|
|                                                     |iqn.1988-12.com.oracle:<+|
|                                                     |OS><-target>            +|
|                                                     |e.g.                    +|
|                                                     |For Windows Server 2008 v|
|                                                     |-------------------------|
|                                                     |><: Select Screen        |
|                                                     |^v: Select Item          |
|                                                     |Enter: Select            |
|                                                     |+/-: Change Opt.         |
|                                                     |F1: General Help         |
|                                                     |(CTRL+Q from serial      |
|                                                     |keyboard)                |
|                                                     |Q: Scroll Help Pane Up   |
|                                                     |A: Scroll Help Pane Down |
\-----------------------------------------------------+ESC: Exit----------------/
       Version 2.14.1219. Copyright (C) 2011 American Megatrends, Inc.
```

UEFI Driver Control > iSCSI > Gigabit Network Connection > PORT CONFIGURATION MENU




```
      Aptio Setup Utility - Copyright (C) 2011 American Megatrends, Inc.
                            UEFI Driver Control
/-------------------------------------------------+-------------------------\
|                                                 |Click to configure the   |
|  PORT CONFIGURATION MENU                        |network device port.     |
|> NIC Configuration                              |                         |
|                                                 |                         |
|  Blink LEDs (range       0                      |                         |
|  0-15 seconds)                                  |                         |
|                                                 |                         |
|  PORT CONFIGURATION INFORMATION                 |                         |
|  UEFI Driver:            Intel(R) PRO/1000      |                         |
|                          4.7.12 PCI-E           |-------------------------|
|  Adapter PBA:            104900-000             |><: Select Screen        |
|  Chip Type:              Intel i350             |^v: Select Item          |
|  PCI Device ID           1521                   |Enter: Select            |
|  PCI                     32:00:00               |+/-: Change Opt.         |
|  Bus:Device:Function:                           |F1: General Help         |
|  Link Status             [Connected]            |(CTRL+Q from serial      |
|  Factory MAC Address:    00:21:28:DE:3E:BA      |keyboard)                |
|  Alternate MAC                                  |Q: Scroll Help Pane Up   |
|  Address:                                       |A: Scroll Help Pane Down |
\-------------------------------------------------+ESC: Exit----------------/
       Version 2.14.1219. Copyright (C) 2011 American Megatrends, Inc.
```

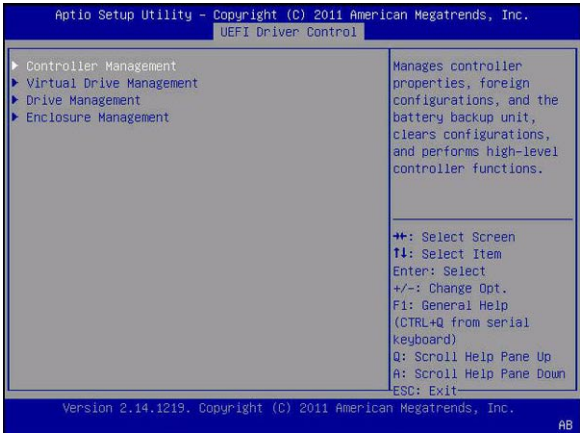
UEFI Driver Control > Gigabit Network Connection > NIC Configuration




```
       Aptio Setup Utility - Copyright (C) 2011 American Megatrends, Inc.
                              UEFI Driver Control
/-----------------------------------------------------+-------------------------\
|                                                     |Legacy Boot Protocol     |
|  Legacy Boot Protocol    [NONE]                     |                         |
|  Link Speed              [AutoNeg]                  |                         |
|  Wake on LAN             [Enabled]                  |                         |
|                                                     |                         |
|                                                     |                         |
|                                                     |                         |
|                                                     |                         |
|                                                     |                         |
|                                                     |-------------------------|
|                                                     |><: Select Screen        |
|                                                     |^v: Select Item          |
|                                                     |Enter: Select            |
|                                                     |+/-: Change Opt.         |
|                                                     |F1: General Help         |
|                                                     |(CTRL+Q from serial      |
|                                                     |keyboard)                |
|                                                     |Q: Scroll Help Pane Up   |
|                                                     |A: Scroll Help Pane Down |
\-----------------------------------------------------+ESC: Exit----------------/
       Version 2.14.1219. Copyright (C) 2011 American Megatrends, Inc.
```

UEFI Driver Control > LSI MegaRAID Configuration Utility

See "BIOS LSI MegaRAID Configuration Utility Screen Reference" on page 189 for additional screens.

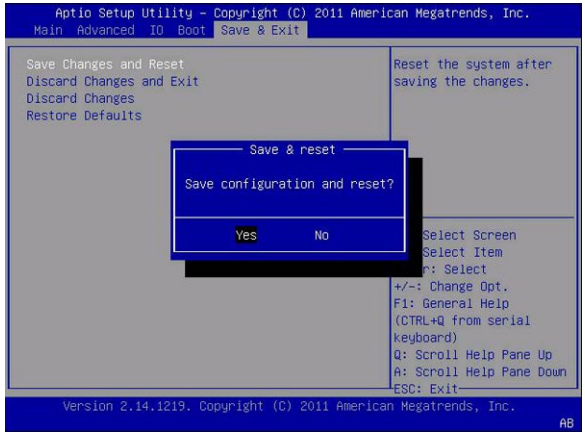



```
      Aptio Setup Utility - Copyright (C) 2011 American Megatrends, Inc.
                            UEFI Driver Control
/-----------------------------------------------------+-------------------------\
|> Controller Management                              |Manages controller       |
|> Virtual Drive Management                           |properties, foreign      |
|> Drive Management                                   |configurations, and the  |
|> Enclosure Management                               |battery backup unit,     |
|                                                     |clears configurations,   |
|                                                     |and performs high-level  |
|                                                     |controller functions.    |
|                                                     |                         |
|                                                     |                         |
|                                                     |-------------------------|
|                                                     |><: Select Screen        |
|                                                     |^v: Select Item          |
|                                                     |Enter: Select            |
|                                                     |+/-: Change Opt.         |
|                                                     |F1: General Help         |
|                                                     |(CTRL+Q from serial      |
|                                                     |keyboard)                |
|                                                     |Q: Scroll Help Pane Up   |
|                                                     |A: Scroll Help Pane Down |
\-----------------------------------------------------+ESC: Exit---------------/
       Version 2.14.1219. Copyright (C) 2011 American Megatrends, Inc.
```

BIOS Save & Exit Menu Selections

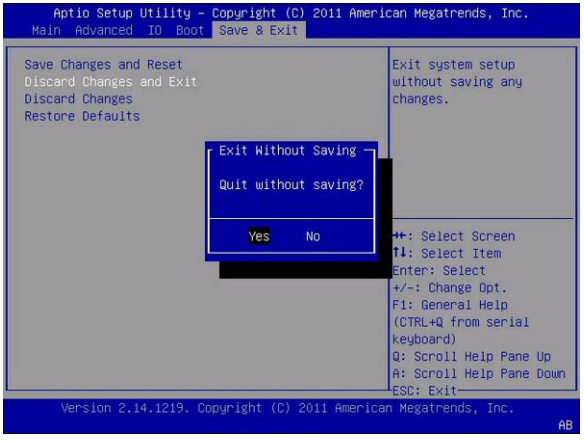
This section includes GUI screen captures of the BIOS menus and searchable text-based representations.

Save & Exit > Save Changes and Reset



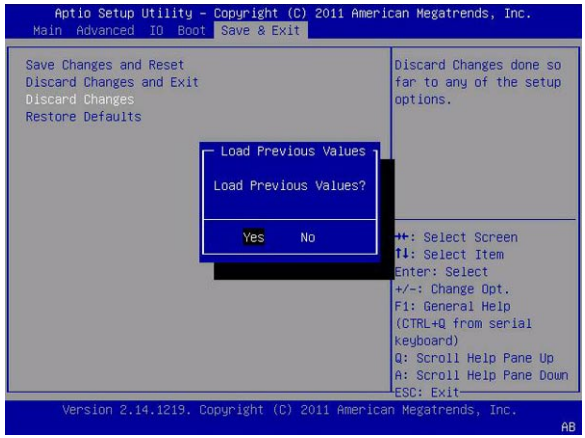
```
       Aptio Setup Utility - Copyright (C) 2011 American Megatrends, Inc.
    Main  Advanced  IO  Boot  Save & Exit
/---------------------------------------------------+------------------------\
|  Save Changes and Reset                           |Reset the system after  |
|  Discard Changes and Exit                         |saving the changes.     |
|  Discard Changes                                  |                        |
|  Restore Defaults                                 |                        |
|                                                   |                        |
|                    /--------- Save & reset --------\                       |
|                    |                               |                       |
|                    | Save configuration and reset? |                       |
|                    |                               |                       |
|                    |-------------------------------|  ---------------------|
|                    |        Yes        No          |  Select Screen        |
|                    \-------------------------------/  Select Item          |
|                                                         r: Select           |
|                                                  |+/-: Change Opt.        |
|                                                  |F1: General Help        |
|                                                  |(CTRL+Q from serial     |
|                                                  |keyboard)               |
|                                                  |Q: Scroll Help Pane Up  |
|                                                  |A: Scroll Help Pane Down|
\---------------------------------------------------+ESC: Exit--------------/
        Version 2.14.1219. Copyright (C) 2011 American Megatrends, Inc.
```

Save & Exit > Discard Changes and Exit



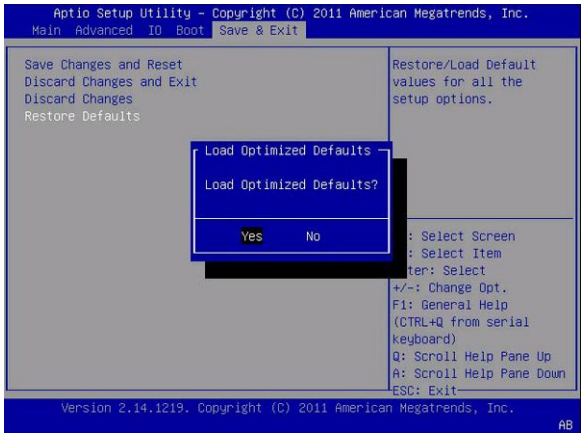
```
       Aptio Setup Utility - Copyright (C) 2011 American Megatrends, Inc.
    Main  Advanced  IO  Boot  Save & Exit
/-------------------------------------------------+-------------------------\
|  Save Changes and Reset                         |Exit system setup        |
|  Discard Changes and Exit                       |without saving any       |
|  Discard Changes                                |changes.                 |
|  Restore Defaults                               |                         |
|                                                 |                         |
|                          / Exit Without Saving -\ |                         |
|                          |                      |                         |
|                          | Quit without saving? |                         |
|                          |                      |                         |
|                          |----------------------|  ------------------------|
|                          |     Yes     No       |  ><: Select Screen      |
|                          \----------------------/  ^v: Select Item        |
|                                                    Enter: Select          |
|                                                 |+/-: Change Opt.         |
|                                                 |F1: General Help         |
|                                                 |(CTRL+Q from serial      |
|                                                 |keyboard)                |
|                                                 |Q: Scroll Help Pane Up   |
|                                                 |A: Scroll Help Pane Down |
\-------------------------------------------------+ESC: Exit---------------/
        Version 2.14.1219. Copyright (C) 2011 American Megatrends, Inc.
```

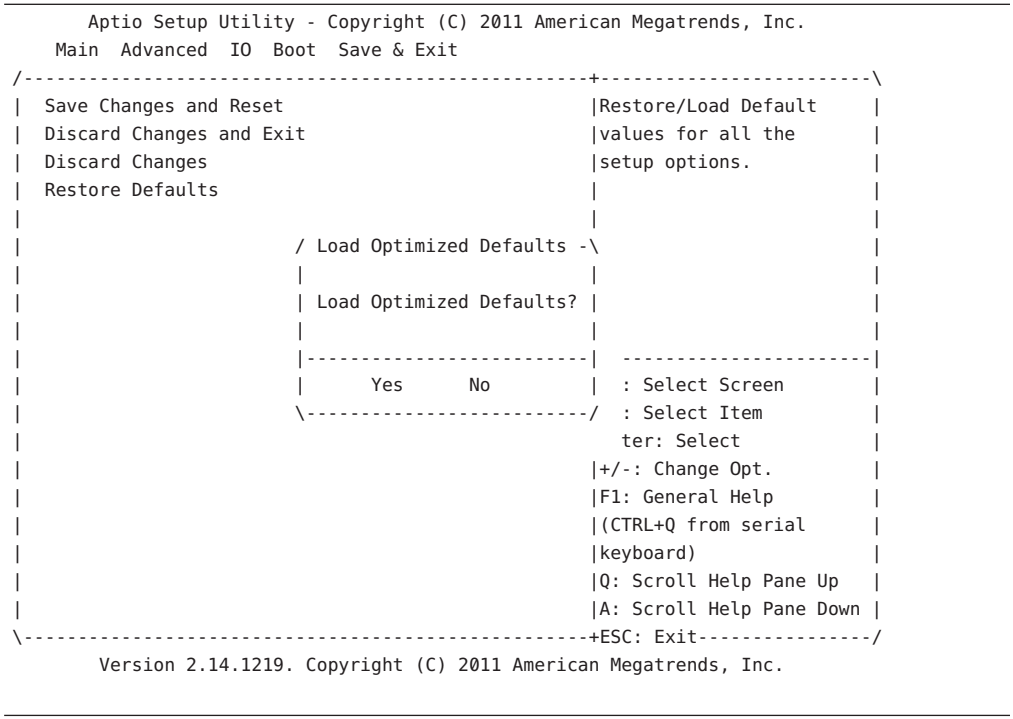
Save & Exit > Discard Changes



```
       Aptio Setup Utility - Copyright (C) 2011 American Megatrends, Inc.
    Main  Advanced  IO  Boot  Save & Exit
/-------------------------------------------------+-------------------------\
|  Save Changes and Reset                         |Discard Changes done so  |
|  Discard Changes and Exit                       |far to any of the setup  |
|  Discard Changes                                |options.                 |
|  Restore Defaults                               |                         |
|                                                 |                         |
|                        /- Load Previous Values \ |                         |
|                        |                       |                         |
|                        | Load Previous Values? |                         |
|                        |                       |                         |
|                        |-----------------------|  ------------------------|
|                        |     Yes     No        |  ><: Select Screen       |
|                        \-----------------------/  ^v: Select Item         |
|                                                   Enter: Select           |
|                                                  |+/-: Change Opt.        |
|                                                  |F1: General Help        |
|                                                  |(CTRL+Q from serial     |
|                                                  |keyboard)               |
|                                                  |Q: Scroll Help Pane Up  |
|                                                  |A: Scroll Help Pane Down |
\-------------------------------------------------+ESC: Exit---------------/
        Version 2.14.1219. Copyright (C) 2011 American Megatrends, Inc.
```

Save & Exit > Restore Defaults




Aptio Setup Utility - Copyright (C) 2011 American Megatrends, Inc.
Main Advanced IO Boot Save & Exit
Save Changes and Reset
Discard Changes and Exit
Discard Changes
Restore Defaults
Restore/Load Default values for all the setup options.
Load Optimized Defaults
Load Optimized Defaults?
Yes
No
: Select Screen
: Select Item
ter: Select
+/-: Change Opt.
F1: General Help
(CTRL+Q from serial keyboard)
Q: Scroll Help Pane Up
A: Scroll Help Pane Down
ESC: Exit
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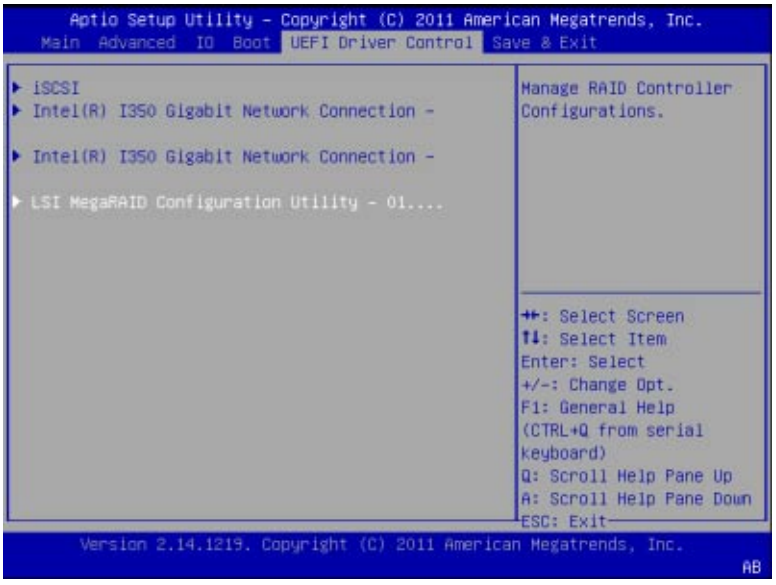
BIOS LSI MegaRAID Configuration Utility Screen Reference

This section includes representations of all screens in the BIOS Setup Utility, LSI MegaRAID Configuration Utility menus.

LSI MegaRAID Configuration Utility Description	Link
Review BIOS Controller Management selections.	"Accessing BIOS LSI MegaRAID Configuration Utility Controller Management Menus " on page 189
Review BIOS Drive Management menu selections.	"BIOS LSI MegaRAID Configuration Utility Drive Management Menu Selections" on page 205
Review BIOS Virtual Drive Management menu selections.	"BIOS LSI MegaRAID Configuration Utility Virtual Drive Management Menu Selections" on page 208
Review BIOS Enclosure Management menu selections.	"BIOS LSI MegaRAID Configuration Utility Enclosure Management Menu Selections" on page 211

Accessing BIOS LSI MegaRAID Configuration Utility Controller Management Menus

The BIOS LSI MegaRAID Configuration Utility is accessed from the UEFI Driver Control menu. The UEFI Driver Control menu is visible in the BIOS menu only while the system is in UEFI boot mode.



Access the LSI MegaRAID Configuration Utility: UEFI Driver Control > LSI MegaRAID Configuration Utility, and select one of the following options.

- "BIOS LSI MegaRAID Configuration Utility Controller Management Selections" on page 190
- "BIOS LSI MegaRAID Configuration Utility Drive Management Menu Selections" on page 205
- "BIOS LSI MegaRAID Configuration Utility Virtual Drive Management Menu Selections" on page 208
- "BIOS LSI MegaRAID Configuration Utility Enclosure Management Menu Selections" on page 211

Related Information

See "BIOS UEFI Driver Control Menu Selections" on page 177.

BIOS LSI MegaRAID Configuration Utility Controller Management Selections

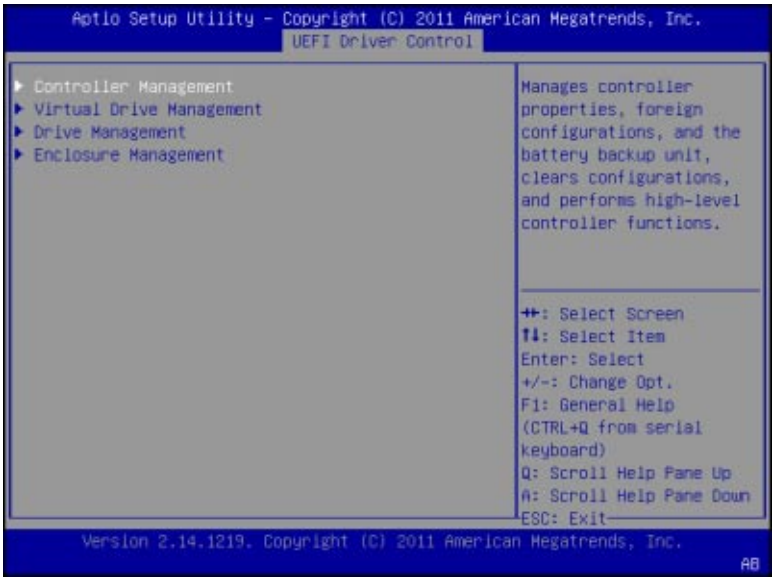
This section includes representations of the BIOS LSI MegaRAID Configuration Utility Controller Management menu selections.

Access the BIOS LSI MegaRAID Configuration Utility: UEFI Driver Control > LSI MegaRAID Configuration Utility > Controller Management, and then select one of the following items:

- Controller Management

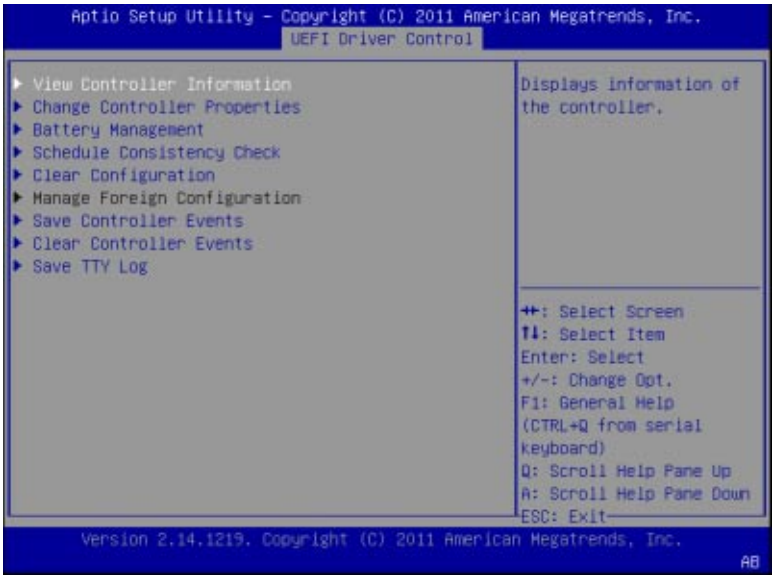
- Drive Management
- Virtual Drive Management
- Enclosure Management

Controller Management Menu

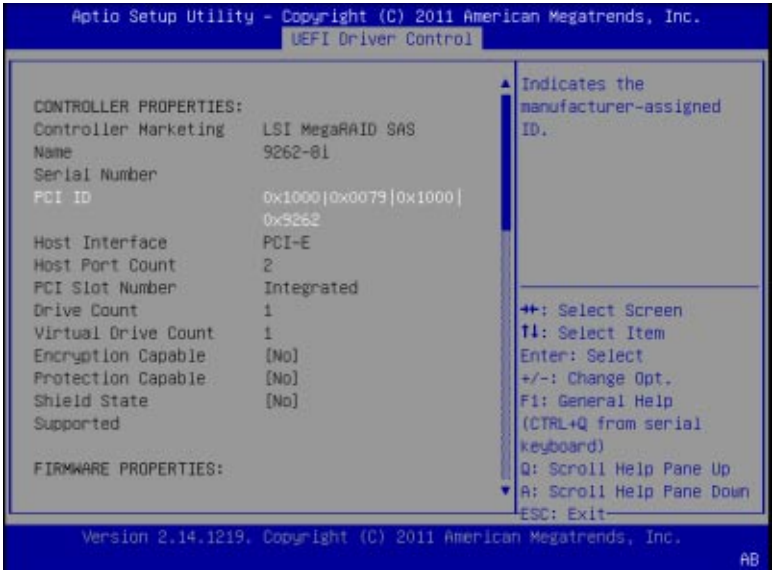


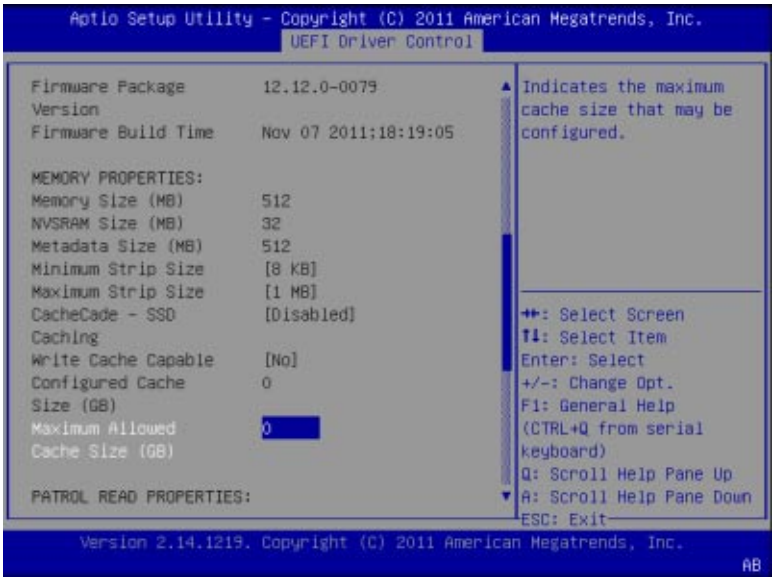
Access the BIOS LSI MegaRAID Configuration Utility, navigate to: UEFI Driver Control Menu > LSI MegaRAID Configuration Utility > Controller Management, and then select one of the following items.

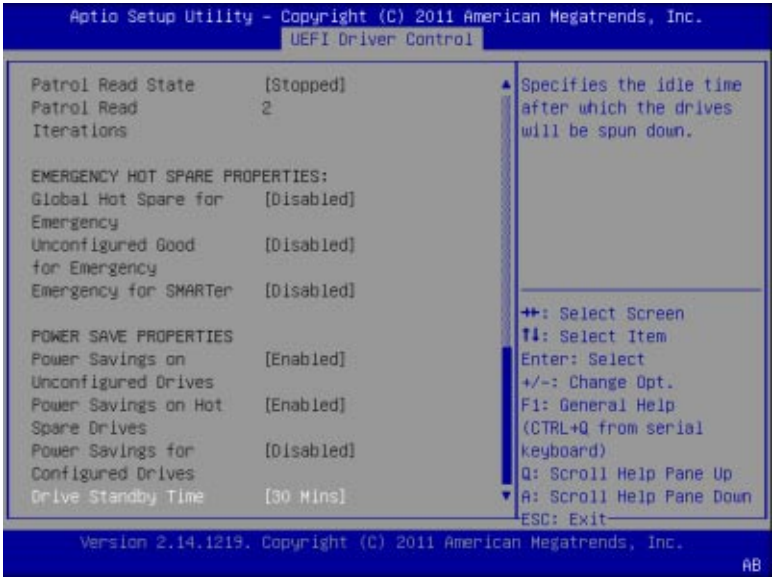
- View Controller Information
- Change Controller Properties
- Battery Management
- Schedule Consistency Check
- Clear Configuration
- Manage Foreign Configuration (not shown)
- Save Controller Events
- Clear Controller Events
- Save TTY Log



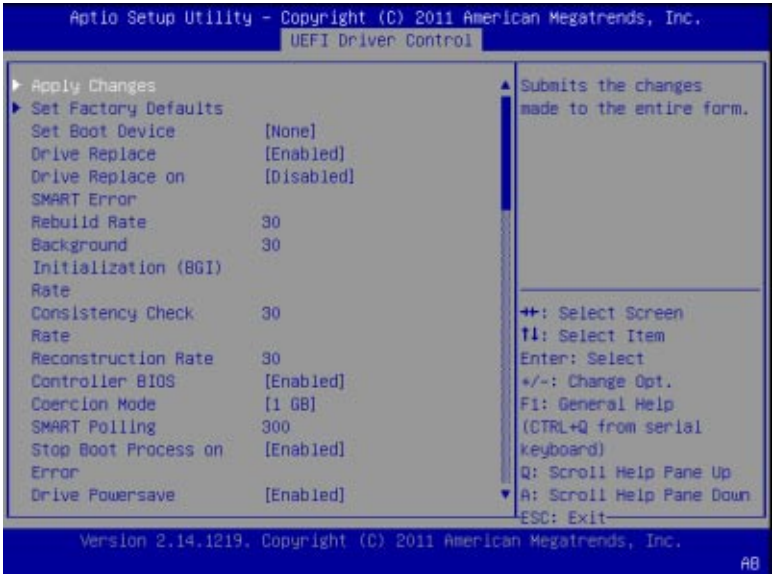
View Controller Information

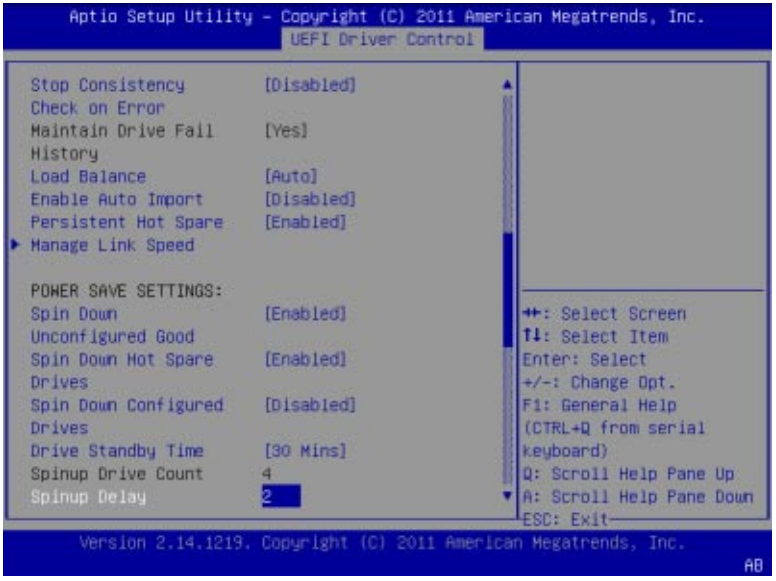


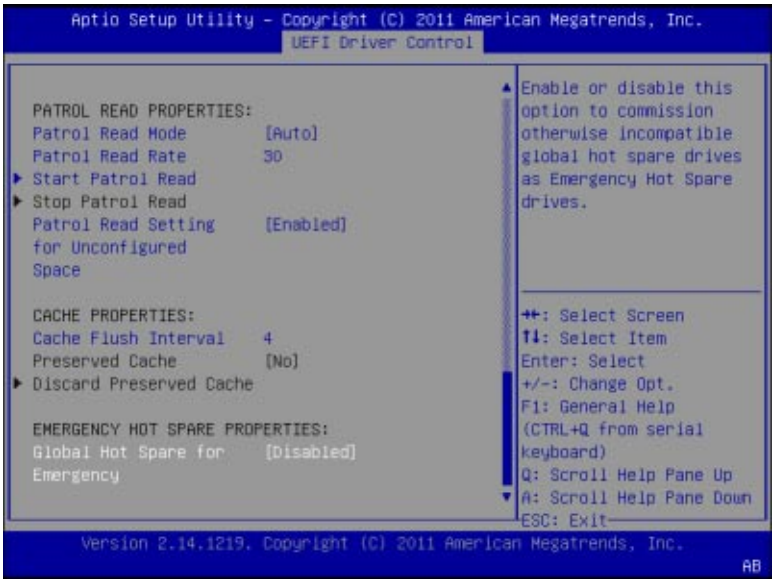


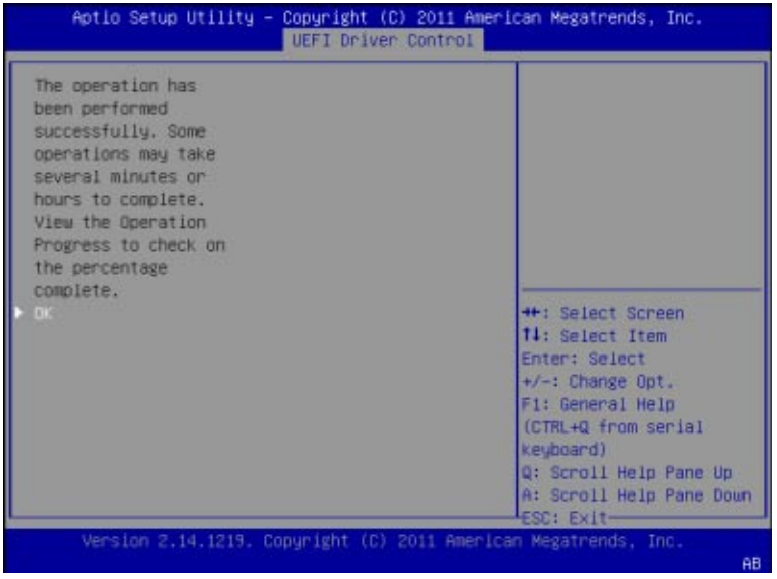


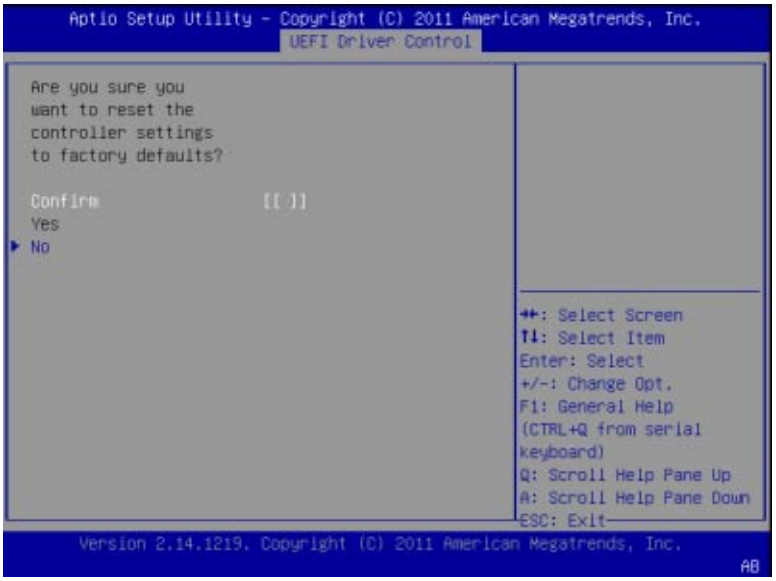
Change Controller Properties

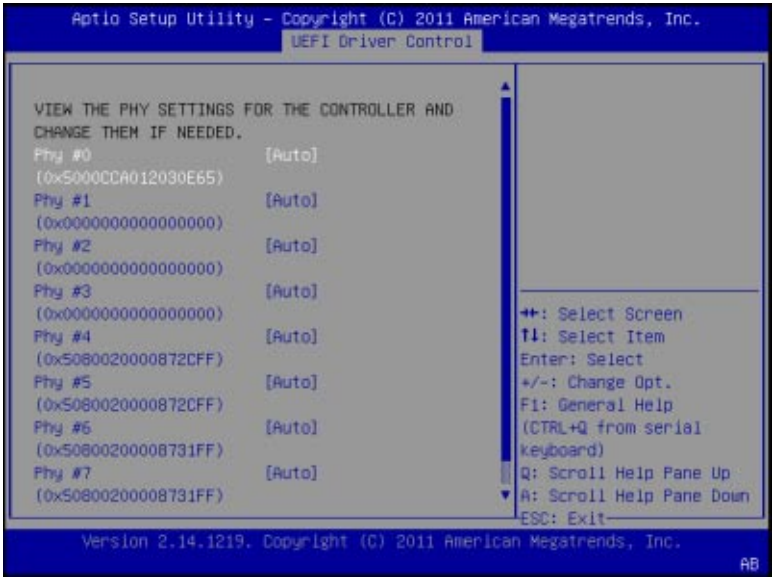

Aptio Setup Utility – Copyright (C) 2011 American Megatrends, Inc.
UEFI Driver Control
Apply Changes
Set Factory Defaults
Set Boot Device [None]
Drive Replace [Enabled]
Drive Replace on SMART Error [Disabled]
Rebuild Rate 30
Background Initialization (BGI) Rate 30
Consistency Check Rate 30
Reconstruction Rate 30
Controller BIOS [Enabled]
Coercion Mode [1 GB]
SMART Polling 300
Stop Boot Process on Error [Enabled]
Drive Powersave [Enabled]
Submits the changes made to the entire form.
→←: Select Screen
↑↓: Select Item
Enter: Select
+/-: Change Opt.
F1: General Help
(CTRL+Q from serial keyboard)
Q: Scroll Help Pane Up
A: Scroll Help Pane Down
ESC: Exit
Version 2.14.1219. Copyright (C) 2011 American Megatrends, Inc.
AB

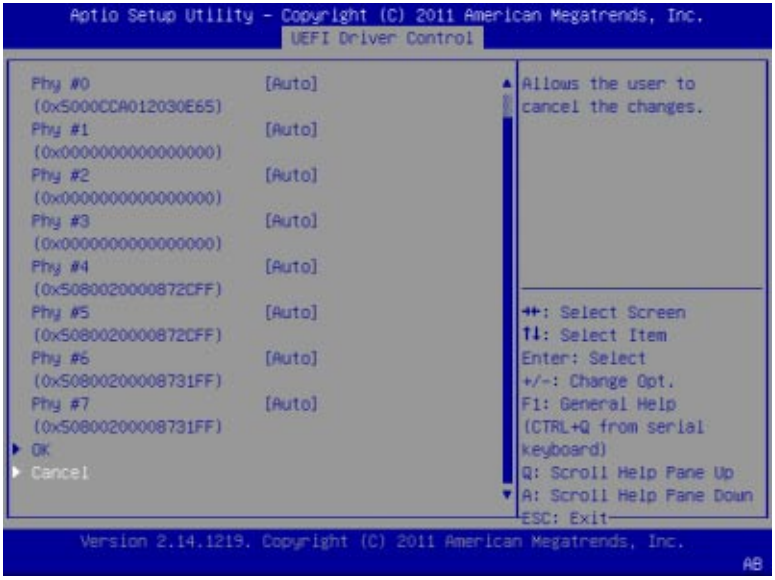

Aptio Setup Utility – Copyright (C) 2011 American Megatrends, Inc.
UEFI Driver Control
Stop Consistency Check on Error [Disabled]
Maintain Drive Fail History [Yes]
Load Balance [Auto]
Enable Auto Import [Disabled]
Persistent Hot Spare [Enabled]
Manage Link Speed
POWER SAVE SETTINGS:
Spin Down Unconfigured Good [Enabled]
Spin Down Hot Spare Drives [Enabled]
Spin Down Configured Drives [Disabled]
Drive Standby Time [30 Mins]
Spinup Drive Count 4
Spinup Delay 2
→←: Select Screen
↑↓: Select Item
Enter: Select
+/-: Change Opt.
F1: General Help
(CTRL+Q from serial keyboard)
Q: Scroll Help Pane Up
A: Scroll Help Pane Down
ESC: Exit
Version 2.14.1219. Copyright (C) 2011 American Megatrends, Inc.
AB

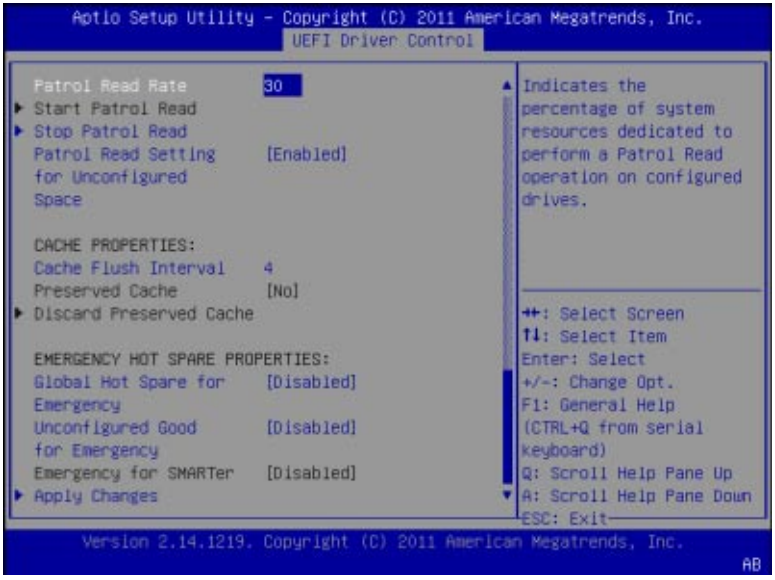

Aptio Setup Utility – Copyright (C) 2011 American Megatrends, Inc.
UEFI Driver Control
PATROL READ PROPERTIES:
Patrol Read Mode [Auto]
Patrol Read Rate 30
Start Patrol Read
Stop Patrol Read
Patrol Read Setting for Unconfigured Space [Enabled]
CACHE PROPERTIES:
Cache Flush Interval 4
Preserved Cache [No]
Discard Preserved Cache
EMERGENCY HOT SPARE PROPERTIES:
Global Hot Spare for Emergency [Disabled]
Enable or disable this option to commission otherwise incompatible global hot spare drives as Emergency Hot Spare drives.
→←: Select Screen
↑↓: Select Item
Enter: Select
+/-: Change Opt.
F1: General Help
(CTRL+Q from serial keyboard)
Q: Scroll Help Pane Up
A: Scroll Help Pane Down
ESC: Exit
Version 2.14.1219. Copyright (C) 2011 American Megatrends, Inc.
AB

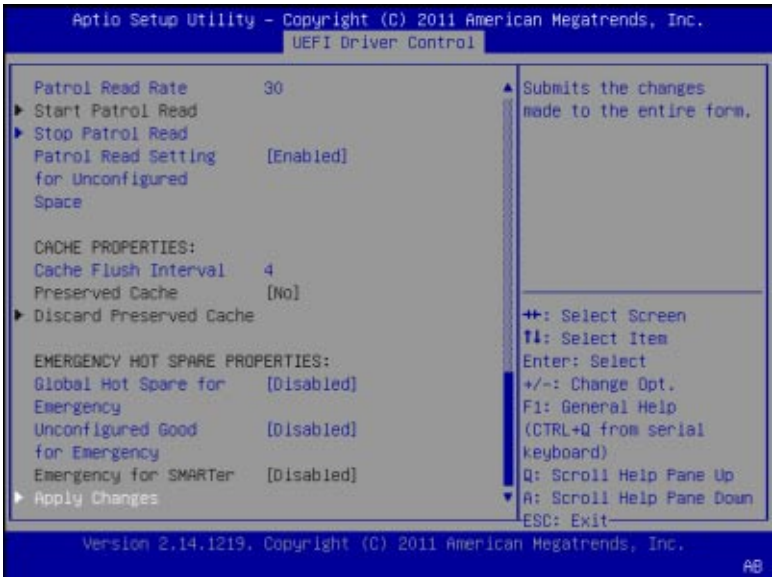

Aptio Setup Utility – Copyright (C) 2011 American Megatrends, Inc.
UEFI Driver Control
The operation has been performed successfully. Some operations may take several minutes or hours to complete. View the Operation Progress to check on the percentage complete.
OK
→←: Select Screen
↑↓: Select Item
Enter: Select
+/-: Change Opt.
F1: General Help
(CTRL+Q from serial keyboard)
Q: Scroll Help Pane Up
A: Scroll Help Pane Down
ESC: Exit
Version 2.14.1219. Copyright (C) 2011 American Megatrends, Inc.
AB

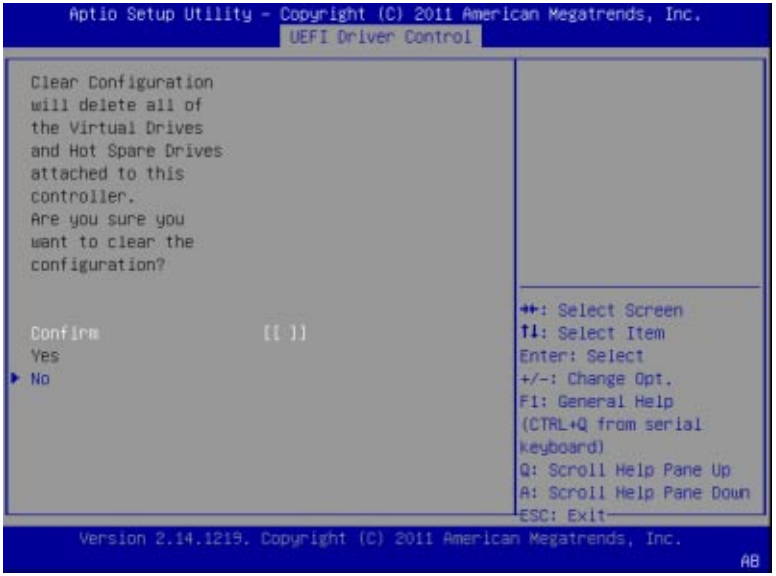

Aptio Setup Utility – Copyright (C) 2011 American Megatrends, Inc.
UEFI Driver Control
Are you sure you
want to reset the
controller settings
to factory defaults?
Confirm [ ]
Yes
No
→←: Select Screen
↑↓: Select Item
Enter: Select
+/-: Change Opt.
F1: General Help
(CTRL+Q from serial
keyboard)
Q: Scroll Help Pane Up
A: Scroll Help Pane Down
ESC: Exit
Version 2.14.1219. Copyright (C) 2011 American Megatrends, Inc.
AB

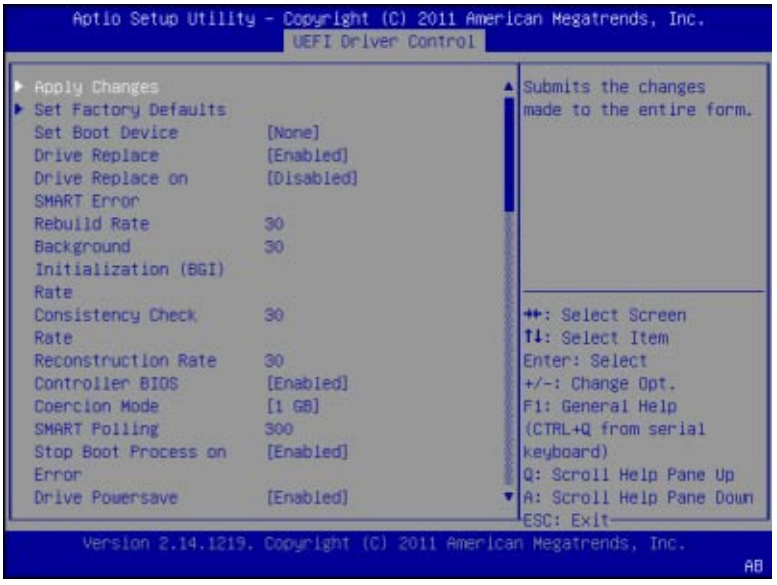

Aptio Setup Utility – Copyright (C) 2011 American Megatrends, Inc.
UEFI Driver Control
VIEW THE PHY SETTINGS FOR THE CONTROLLER AND
CHANGE THEM IF NEEDED.
Phy #0 [Auto]
(0x5000CCA012030E65)
Phy #1 [Auto]
(0x0000000000000000)
Phy #2 [Auto]
(0x0000000000000000)
Phy #3 [Auto]
(0x0000000000000000)
Phy #4 [Auto]
(0x5080020000872CFF)
Phy #5 [Auto]
(0x5080020000872CFF)
Phy #6 [Auto]
(0x50800200008731FF)
Phy #7 [Auto]
(0x50800200008731FF)
→←: Select Screen
↑↓: Select Item
Enter: Select
+/-: Change Opt.
F1: General Help
(CTRL+Q from serial
keyboard)
Q: Scroll Help Pane Up
A: Scroll Help Pane Down
ESC: Exit
Version 2.14.1219. Copyright (C) 2011 American Megatrends, Inc.
AB

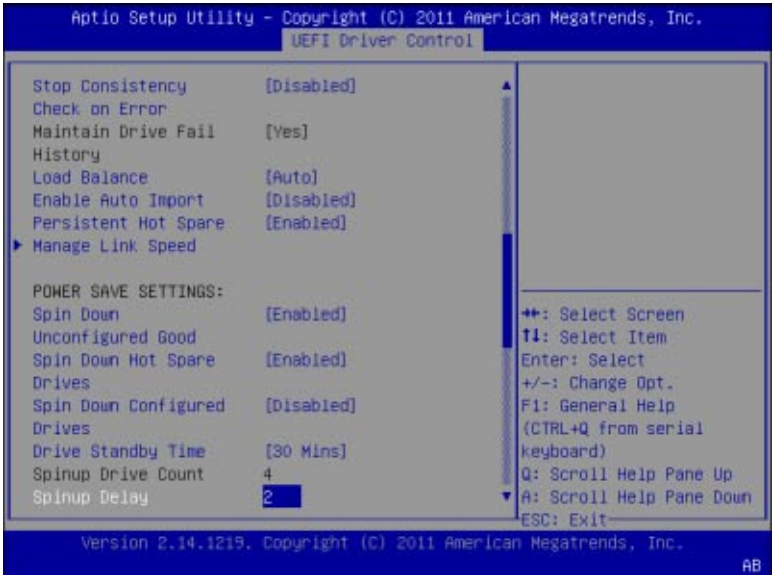

Aptio Setup Utility – Copyright (C) 2011 American Megatrends, Inc.
UEFI Driver Control
Phy #0 [Auto]
(0x5000CCA012030E65)
Phy #1 [Auto]
(0x0000000000000000)
Phy #2 [Auto]
(0x0000000000000000)
Phy #3 [Auto]
(0x0000000000000000)
Phy #4 [Auto]
(0x5080020000872CFF)
Phy #5 [Auto]
(0x5080020000872CFF)
Phy #6 [Auto]
(0x50800200008731FF)
Phy #7 [Auto]
(0x50800200008731FF)
OK
Cancel
Allows the user to cancel the changes.
→←: Select Screen
↑↓: Select Item
Enter: Select
+/-: Change Opt.
F1: General Help
(CTRL+Q from serial keyboard)
Q: Scroll Help Pane Up
A: Scroll Help Pane Down
ESC: Exit
Version 2.14.1219. Copyright (C) 2011 American Megatrends, Inc.
AB

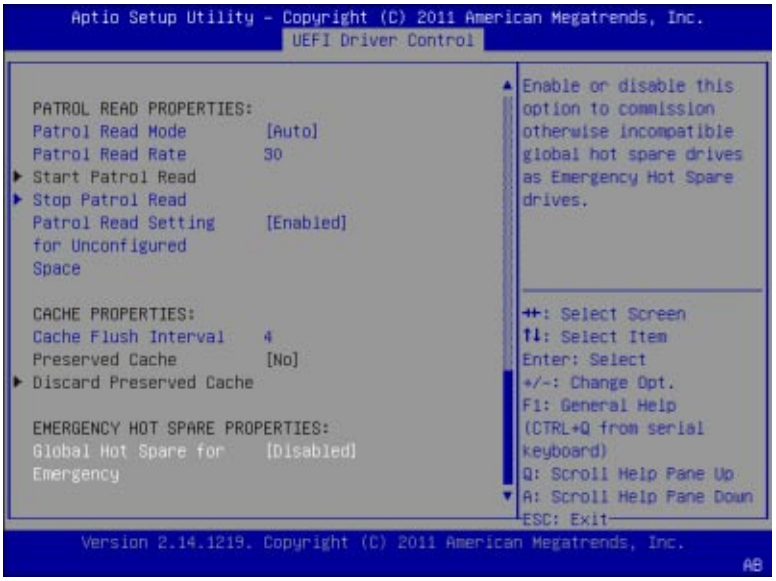

Aptio Setup Utility – Copyright (C) 2011 American Megatrends, Inc.
UEFI Driver Control
Patrol Read Rate 30
Start Patrol Read
Stop Patrol Read
Patrol Read Setting for Unconfigured Space [Enabled]
CACHE PROPERTIES:
Cache Flush Interval 4
Preserved Cache [No]
Discard Preserved Cache
EMERGENCY HOT SPARE PROPERTIES:
Global Hot Spare for Emergency [Disabled]
Unconfigured Good for Emergency [Disabled]
Emergency for SMARTer [Disabled]
Apply Changes
Indicates the percentage of system resources dedicated to perform a Patrol Read operation on configured drives.
→←: Select Screen
↑↓: Select Item
Enter: Select
+/-: Change Opt.
F1: General Help
(CTRL+Q from serial keyboard)
Q: Scroll Help Pane Up
A: Scroll Help Pane Down
ESC: Exit
Version 2.14.1219. Copyright (C) 2011 American Megatrends, Inc.
AB


Aptio Setup Utility – Copyright (C) 2011 American Megatrends, Inc.
UEFI Driver Control
Patrol Read Rate 30
Start Patrol Read
Stop Patrol Read
Patrol Read Setting for Unconfigured Space [Enabled]
CACHE PROPERTIES:
Cache Flush Interval 4
Preserved Cache [No]
Discard Preserved Cache
EMERGENCY HOT SPARE PROPERTIES:
Global Hot Spare for Emergency [Disabled]
Unconfigured Good for Emergency [Disabled]
Emergency for SMARTer [Disabled]
Apply Changes
Submits the changes made to the entire form.
→←: Select Screen
↑↓: Select Item
Enter: Select
+/-: Change Opt.
F1: General Help
(CTRL+Q from serial keyboard)
Q: Scroll Help Pane Up
A: Scroll Help Pane Down
ESC: Exit
Version 2.14.1219. Copyright (C) 2011 American Megatrends, Inc.
AB

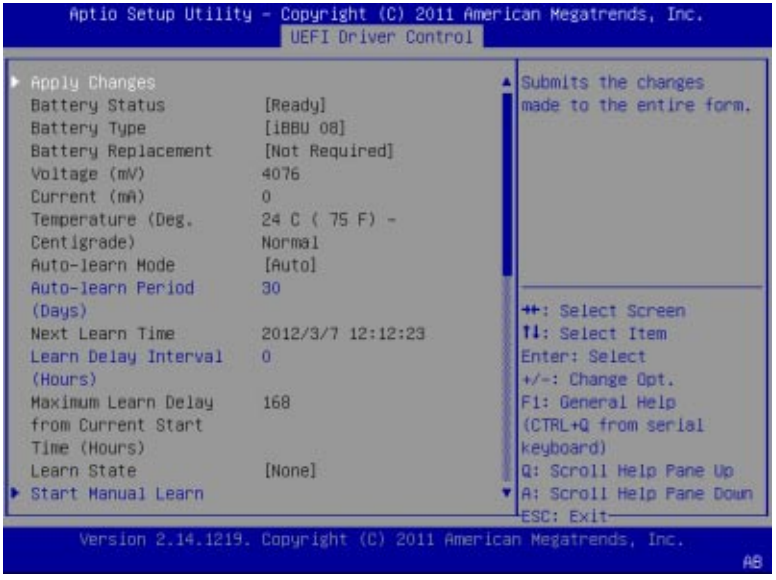

Aptio Setup Utility – Copyright (C) 2011 American Megatrends, Inc.
UEFI Driver Control
Clear Configuration will delete all of the Virtual Drives and Hot Spare Drives attached to this controller.
Are you sure you want to clear the configuration?
Confirm [ ]
Yes
No
→←: Select Screen
↑↓: Select Item
Enter: Select
+/-: Change Opt.
F1: General Help
(CTRL+Q from serial keyboard)
Q: Scroll Help Pane Up
A: Scroll Help Pane Down
ESC: Exit
Version 2.14.1219. Copyright (C) 2011 American Megatrends, Inc.
AB

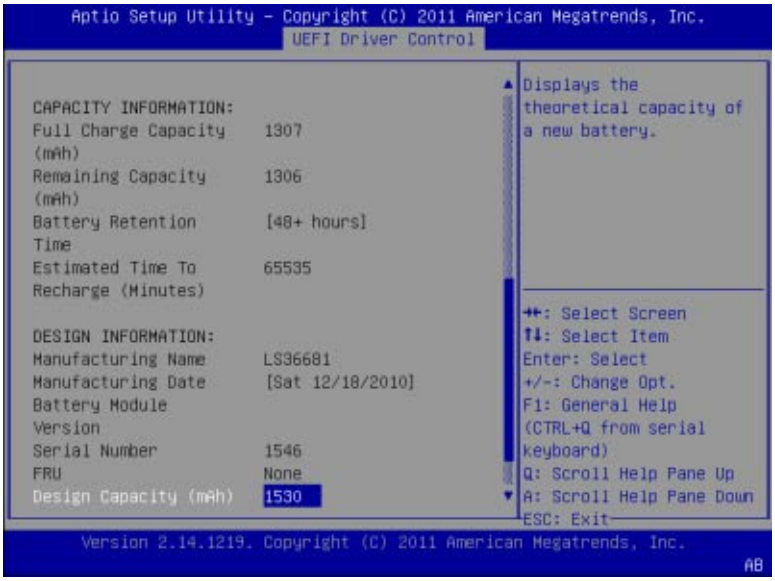

Aptio Setup Utility – Copyright (C) 2011 American Megatrends, Inc.
UEFI Driver Control
Apply Changes
Set Factory Defaults
Set Boot Device [None]
Drive Replace [Enabled]
Drive Replace on SMART Error [Disabled]
Rebuild Rate 30
Background Initialization (BGI) Rate 30
Consistency Check Rate 30
Reconstruction Rate 30
Controller BIOS [Enabled]
Coercion Mode [1 GB]
SMART Polling 300
Stop Boot Process on Error [Enabled]
Drive Powersave [Enabled]
Submits the changes made to the entire form.
→←: Select Screen
↑↓: Select Item
Enter: Select
+/-: Change Opt.
F1: General Help
(CTRL+Q from serial keyboard)
Q: Scroll Help Pane Up
A: Scroll Help Pane Down
ESC: Exit
Version 2.14.1219. Copyright (C) 2011 American Megatrends, Inc.
AB

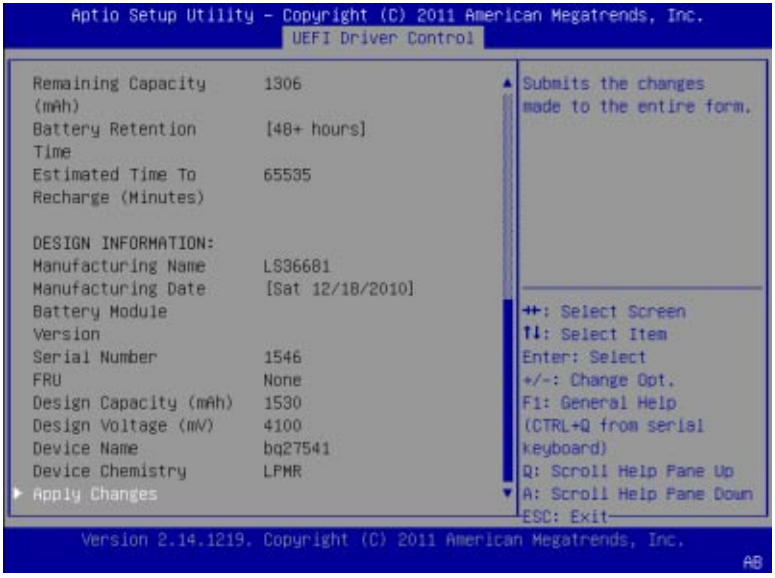

Aptio Setup Utility – Copyright (C) 2011 American Megatrends, Inc.
UEFI Driver Control
Stop Consistency Check on Error [Disabled]
Maintain Drive Fail History [Yes]
Load Balance [Auto]
Enable Auto Import [Disabled]
Persistent Hot Spare [Enabled]
Manage Link Speed
POWER SAVE SETTINGS:
Spin Down Unconfigured Good [Enabled]
Spin Down Hot Spare Drives [Enabled]
Spin Down Configured Drives [Disabled]
Drive Standby Time [30 Mins]
Spinup Drive Count 4
Spinup Delay 2
→←: Select Screen
↑↓: Select Item
Enter: Select
+/-: Change Opt.
F1: General Help
(CTRL+Q from serial keyboard)
Q: Scroll Help Pane Up
A: Scroll Help Pane Down
ESC: Exit
Version 2.14.1219. Copyright (C) 2011 American Megatrends, Inc.
AB



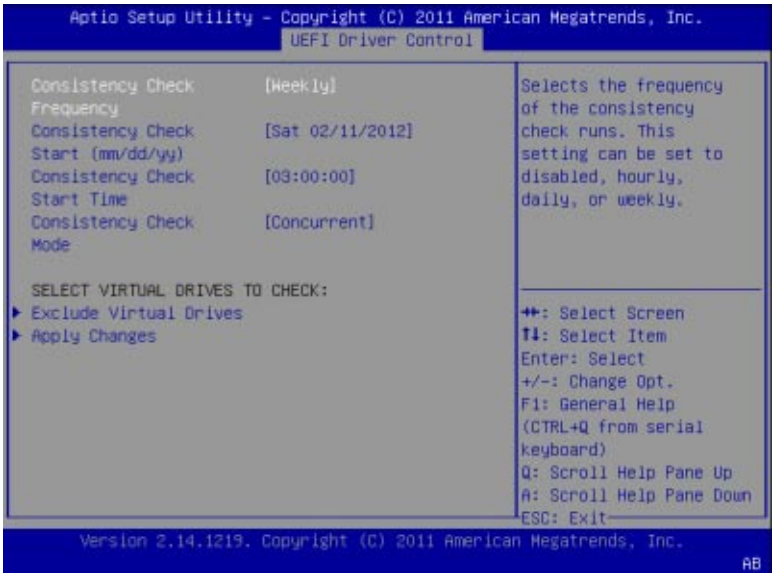
Battery Management

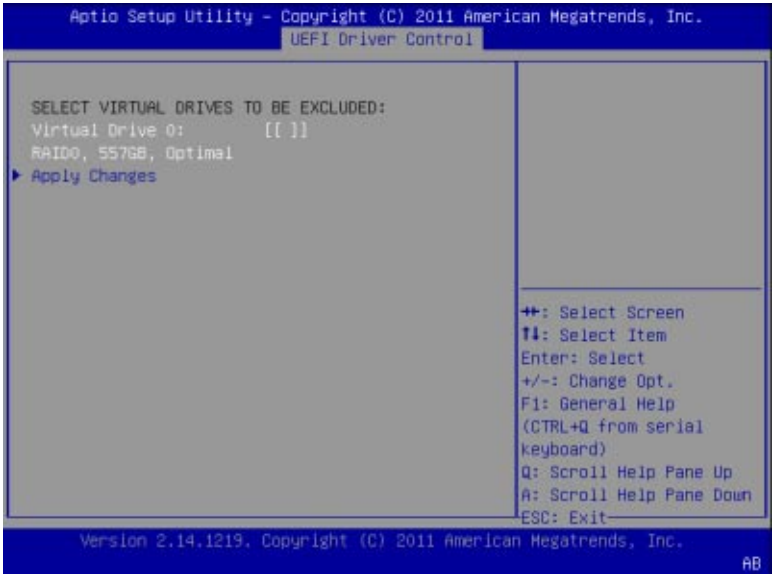




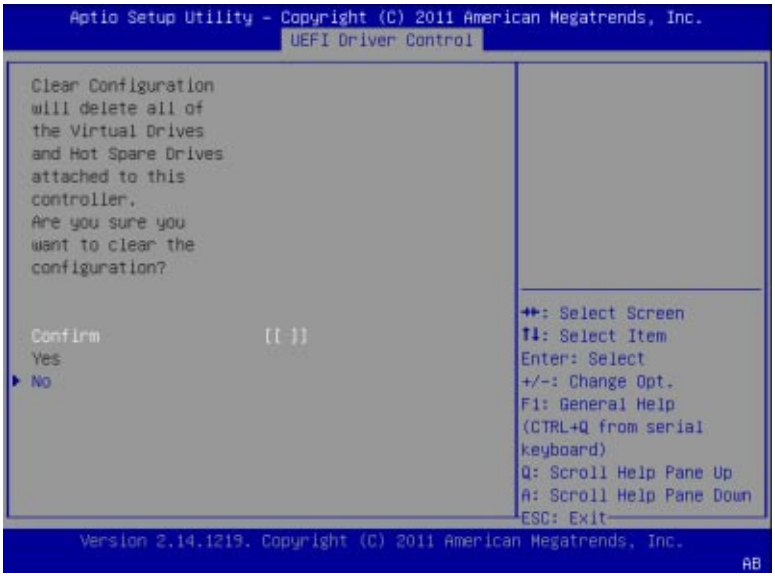


Schedule Consistency Check

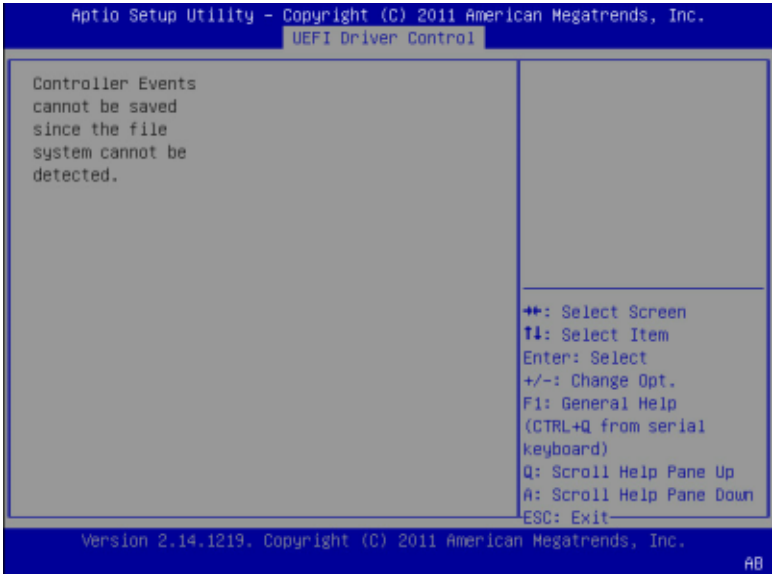




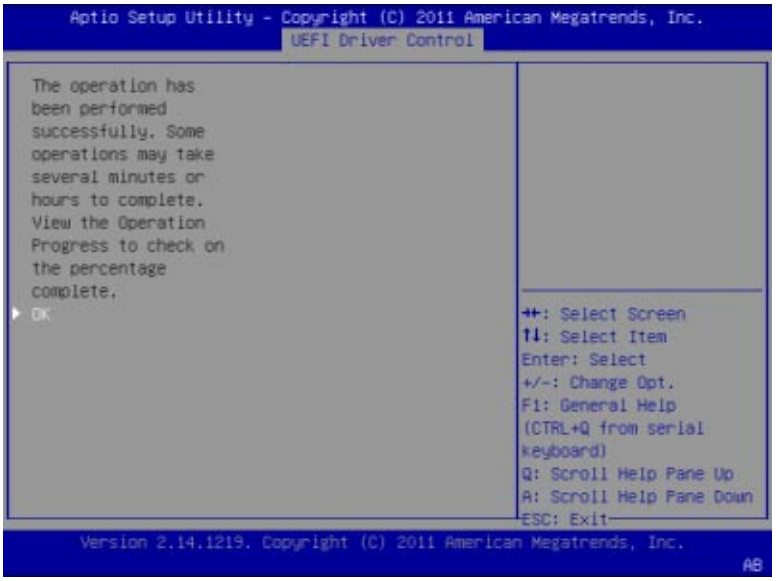
Clear Configuration



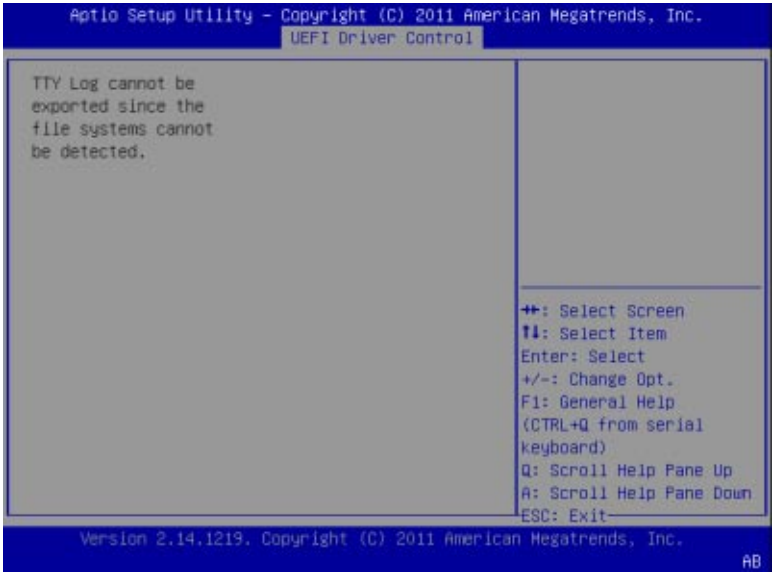
Save Controller Events



Clear Controller Events


Aptio Setup Utility – Copyright (C) 2011 American Megatrends, Inc.
UEFI Driver Control
The operation has been performed successfully. Some operations may take several minutes or hours to complete. View the Operation Progress to check on the percentage complete.
OK
→←: Select Screen
↑↓: Select Item
Enter: Select
+/-: Change Opt.
F1: General Help
(CTRL+Q from serial keyboard)
Q: Scroll Help Pane Up
A: Scroll Help Pane Down
ESC: Exit
Version 2.14.1219. Copyright (C) 2011 American Megatrends, Inc.
AB

Save TTY Log


Aptio Setup Utility – Copyright (C) 2011 American Megatrends, Inc.
UEFI Driver Control
TTY Log cannot be exported since the file systems cannot be detected.
→←: Select Screen
↑↓: Select Item
Enter: Select
+/-: Change Opt.
F1: General Help
(CTRL+Q from serial keyboard)
Q: Scroll Help Pane Up
A: Scroll Help Pane Down
ESC: Exit
Version 2.14.1219. Copyright (C) 2011 American Megatrends, Inc.
AB

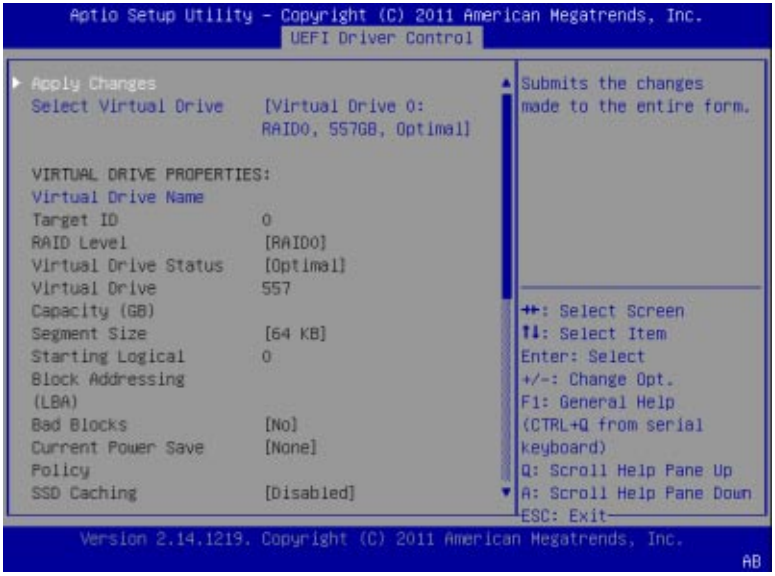
BIOS LSI MegaRAID Configuration Utility Drive Management Menu Selections

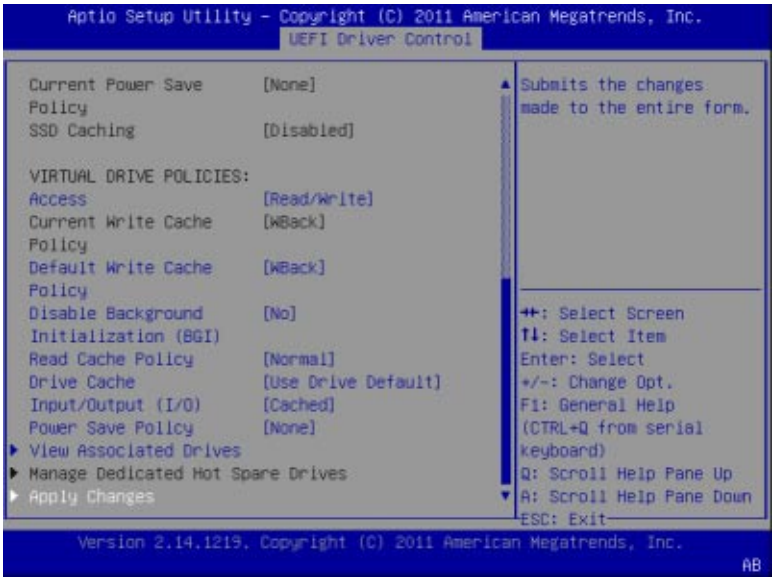
This section includes representations of BIOS LSI MegaRAID Configuration Utility Drive Management menu selections.

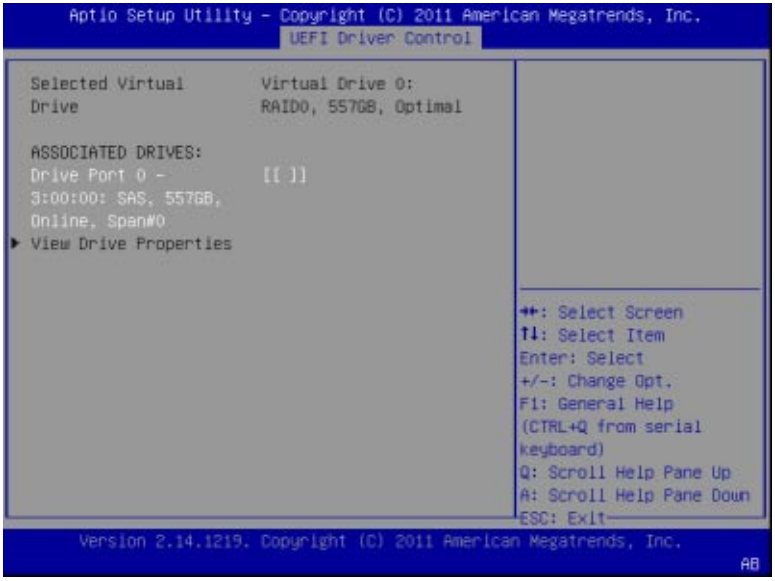
Access the BIOS LSI MegaRAID Configuration Utility, Drive Management: UEFI Driver Control > LSI MegaRAID Configuration Utility > Drive Management, and then select one of the following items:

- View Associated Drives

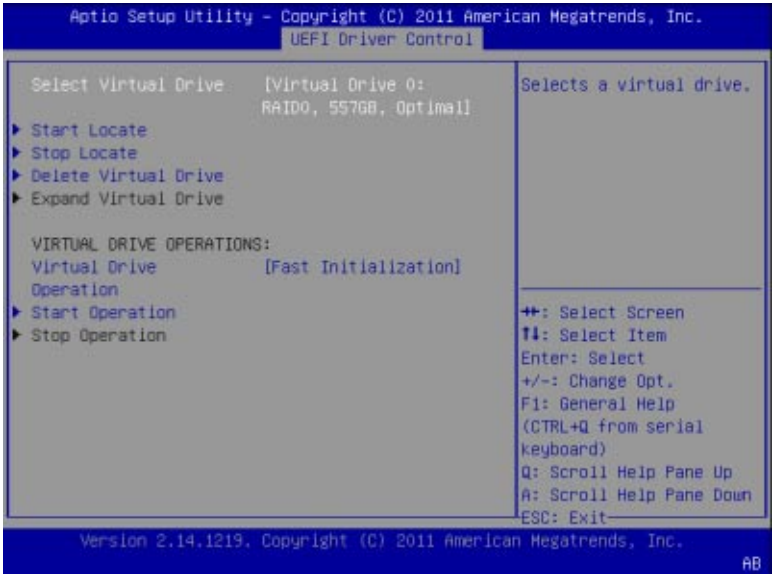
Drive Management Menu

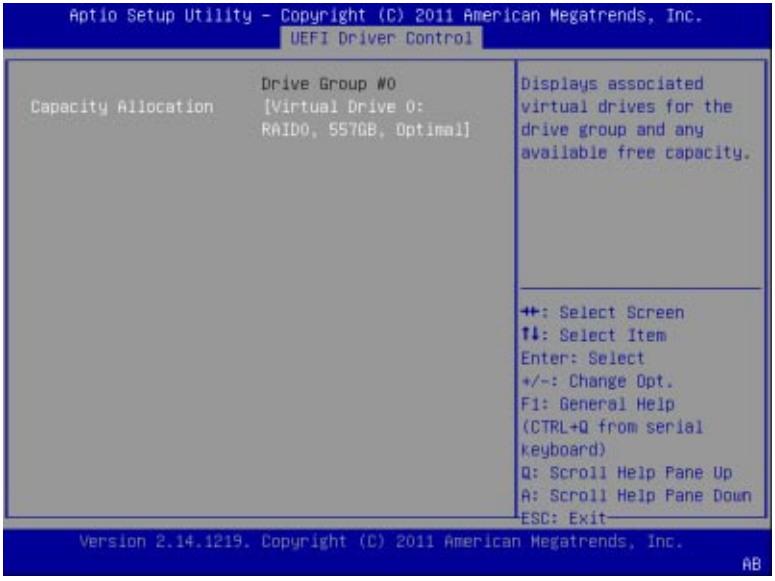






View Associated Drives


Aptio Setup Utility – Copyright (C) 2011 American Megatrends, Inc.
UEFI Driver Control
Select Virtual Drive [Virtual Drive 0: RAID0, 557GB, Optimal]
Start Locate
Stop Locate
Delete Virtual Drive
Expand Virtual Drive
VIRTUAL DRIVE OPERATIONS:
Virtual Drive Operation [Fast Initialization]
Start Operation
Stop Operation
Selects a virtual drive.
→←: Select Screen
↑↓: Select Item
Enter: Select
+/-: Change Opt.
F1: General Help
(CTRL+Q from serial keyboard)
Q: Scroll Help Pane Up
A: Scroll Help Pane Down
ESC: Exit
Version 2.14.1219. Copyright (C) 2011 American Megatrends, Inc.
AB


Aptio Setup Utility – Copyright (C) 2011 American Megatrends, Inc.
UEFI Driver Control
Drive Group #0
Capacity Allocation [Virtual Drive 0: RAID0, 557GB, Optimal]
Displays associated virtual drives for the drive group and any available free capacity.
→←: Select Screen
↑↓: Select Item
Enter: Select
+/-: Change Opt.
F1: General Help
(CTRL+Q from serial keyboard)
Q: Scroll Help Pane Up
A: Scroll Help Pane Down
ESC: Exit
Version 2.14.1219. Copyright (C) 2011 American Megatrends, Inc.
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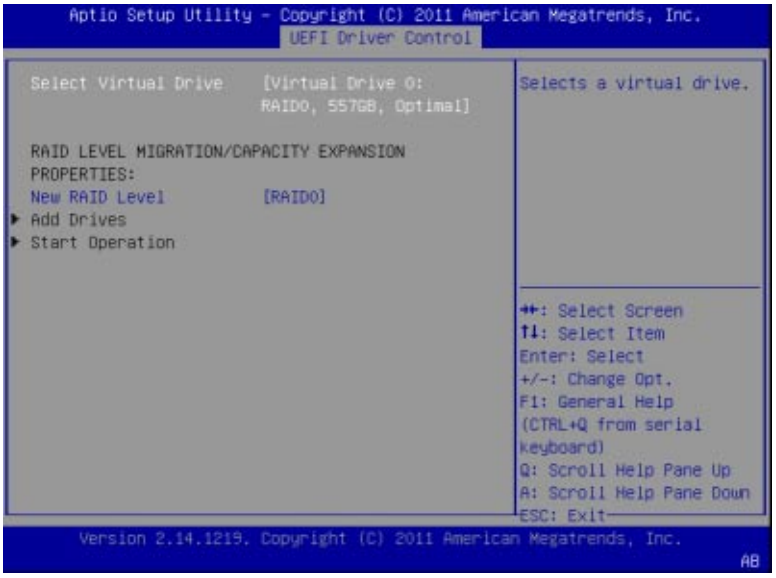


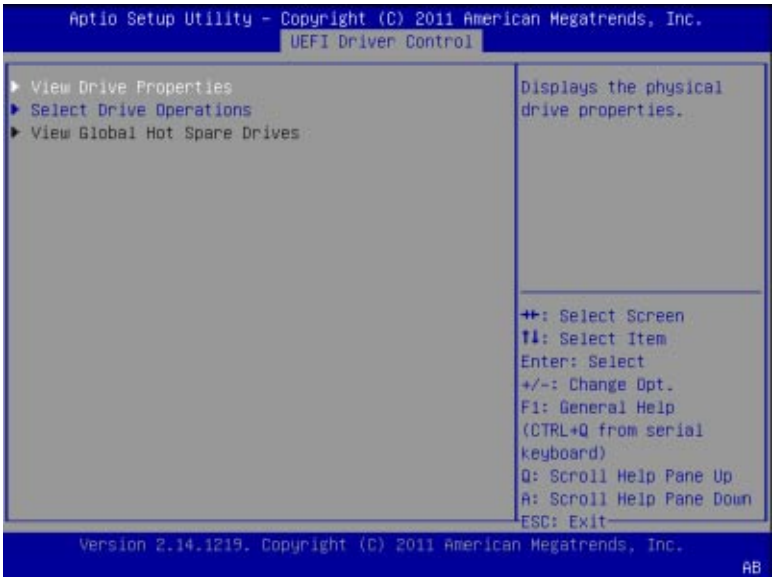
BIOS LSI MegaRAID Configuration Utility Virtual Drive Management Menu Selections

This section includes representations of the BIOS LSI MegaRAID Configuration Utility Virtual Drive Management menu selections.

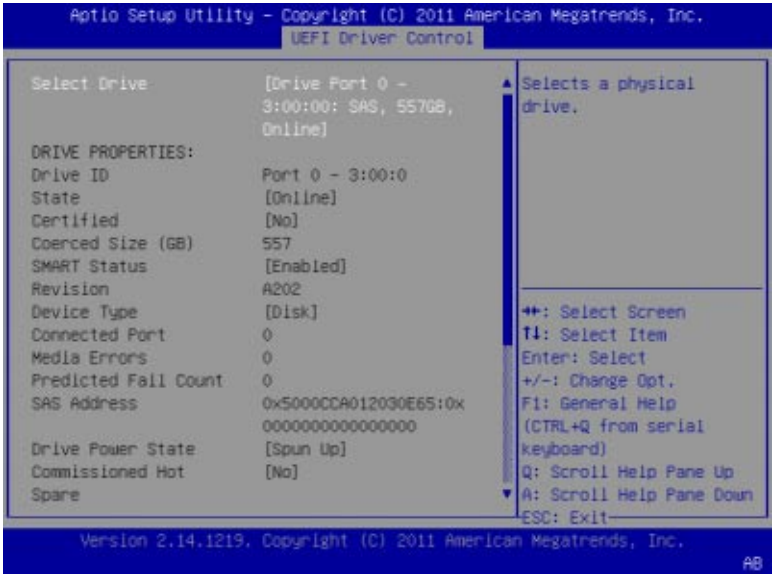
Access the BIOS LSI MegaRAID Configuration Utility, Virtual Drive Management: UEFI Driver Control > LSI MegaRAID Configuration Utility > Virtual Drive Management, and then select one of the following items:

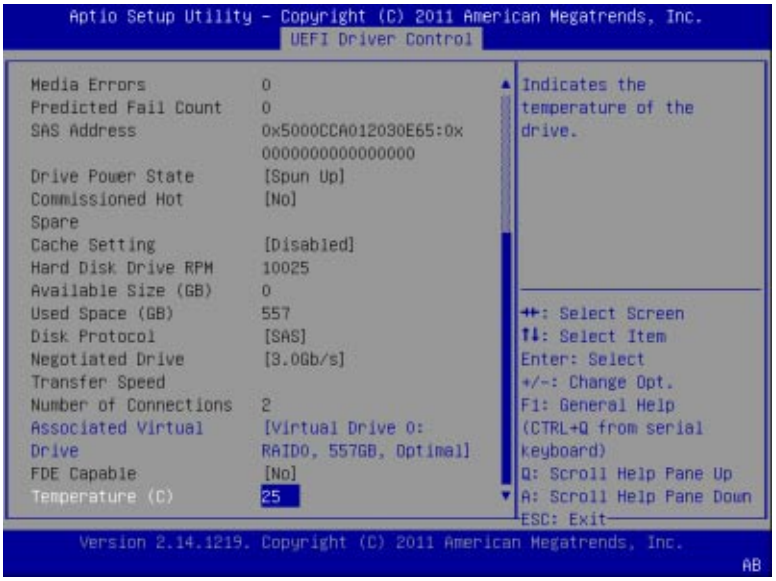
- Create Configuration
- Manage Virtual Drive Properties
- Select Virtual Drive Operations
- View Drive Group Properties
- Reconfigure Virtual Drives

Virtual Drive Management

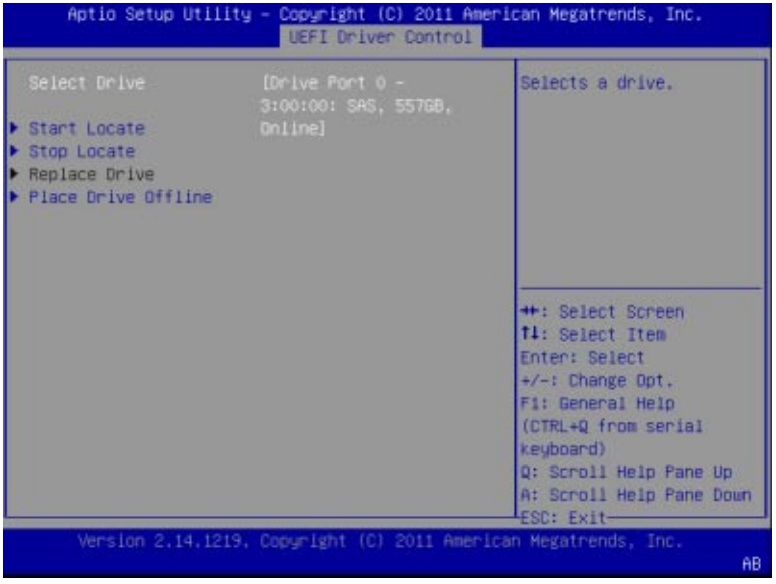


View Drive Properties

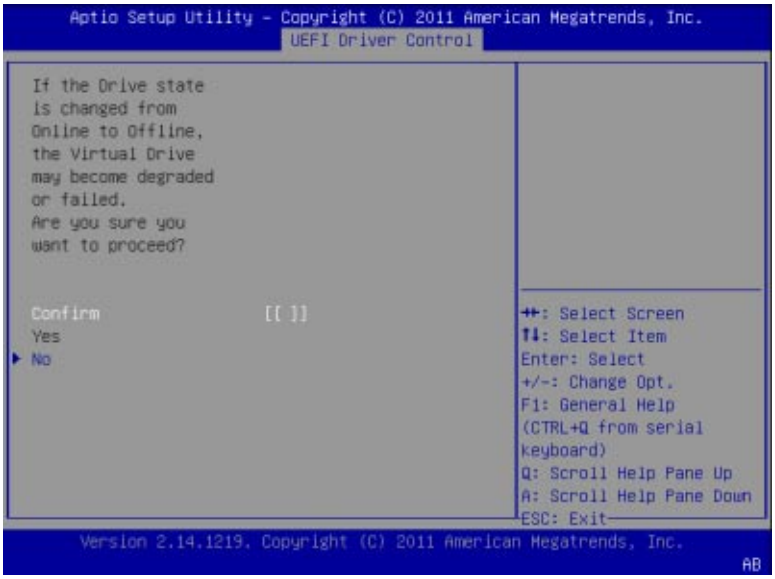




Select Drive Operations



View Global Hot Spare Drives

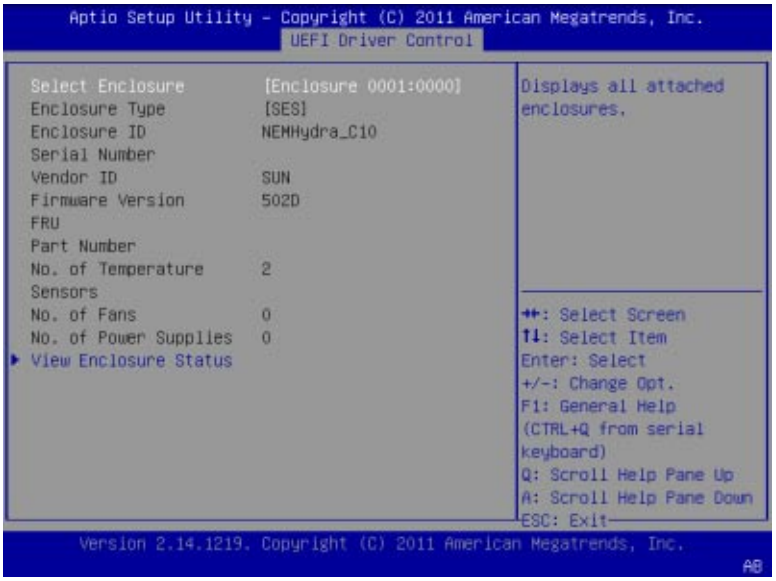


BIOS LSI MegaRAID Configuration Utility Enclosure Management Menu Selections

This section includes representations of the BIOS LSI MegaRAID Configuration Utility Enclosure Management menu selections.

Access the BIOS LSI MegaRAID Configuration Utility, Enclosure Management: UEFI Driver Control > LSI MegaRAID Configuration Utility > Enclosure Management.

Enclosure Management


Aptio Setup Utility – Copyright (C) 2011 American Megatrends, Inc.
UEFI Driver Control
Select Enclosure [Enclosure 0001:0000]
Enclosure Type [SES]
Enclosure ID NEMHydra_C10
Serial Number
Vendor ID SUN
Firmware Version 502D
FRU
Part Number
No. of Temperature Sensors 2
No. of Fans 0
No. of Power Supplies 0
View Enclosure Status
Displays all attached enclosures.
→←: Select Screen
↑↓: Select Item
Enter: Select
+/-: Change Opt.
F1: General Help
(CTRL+Q from serial keyboard)
Q: Scroll Help Pane Up
A: Scroll Help Pane Down
ESC: Exit
Version 2.14.1219. Copyright (C) 2011 American Megatrends, Inc.
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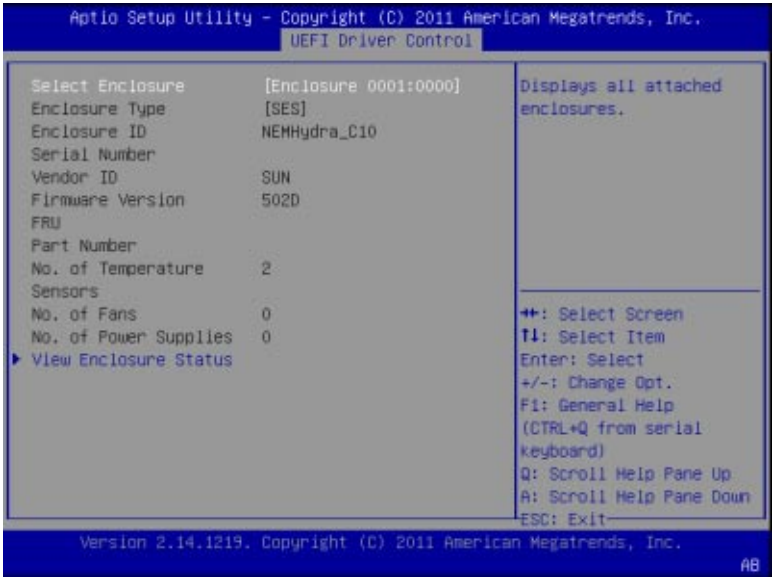
Aptio Setup Utility – Copyright (C) 2011 American Megatrends, Inc.
UEFI Driver Control
Select Enclosure [Enclosure 0001:0000]
Enclosure Type [SES]
Enclosure ID NEMHydra_C10
Serial Number
Vendor ID SUN
Firmware Version 502D
FRU
Part Number
No. of Temperature Sensors 2
No. of Fans 0
No. of Power Supplies 0
View Enclosure Status
Displays all attached enclosures.
→←: Select Screen
↑↓: Select Item
Enter: Select
+/-: Change Opt.
F1: General Help
(CTRL+Q from serial keyboard)
Q: Scroll Help Pane Up
A: Scroll Help Pane Down
ESC: Exit
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Identifying Hardware Components and SNMP Messages

The section includes information about component names and SNMP messages for the Sun Blade X3-2B.

Description	Link
Review information about system components and nomenclature.	"Identifying System Hardware Components" on page 213
Review descriptions of major items listed in the table.	"Table Legend" on page 214
Refer to sensor information.	"System Board Components (Sensors)" on page 214
Refer to FRU information.	"Field Replaceable Units (FRUs)" on page 218
Review SNMP traps generated by the server.	"SNMP and PET Traps" on page 219

Related Information

- Oracle ILOM 3.1 Documentation Collection

Identifying System Hardware Components

The tables in this section describe the Nomenclature Architecture Council (NAC) convention naming applied to the components of the Sun Blade X3-2B. Each section corresponds to the following IPMI entity IDs and lists sensors, indicators, and FRUs.

- "Table Legend" on page 214
- "System Board Components (Sensors)" on page 214
- "Sensors" on page 215
- "Field Replaceable Units (FRUs)" on page 218
- "SNMP and PET Traps" on page 219

Table Legend

The following list describes the fields listed in the tables that are located in subsequent sections:

- **Component name**: The user-visible NAC name used in management interfaces to refer to a specific sensor, indicator, or FRU. The IPMI name is a shortened form of the NAC name, and is indicated by the **boldface** portion of the NAC name.
- **IPMI type**: Indicates the type of sensor, indicator, or FRU represented.
- **Description**: Textual description of this particular NAC reference.
- **Values**: Defines the states of the sensor, indicator, or FRU entity, and any specific units or values that are expected when you are reading the device, if applicable.

Note – Some NAC names (and IPMI names) are hidden from Oracle ILOM user interfaces. These names are marked as hidden in the tables.

System Board Components (Sensors)

The following table shows system board component name, IPMI name, type, description and events.

Note – Component Names may appear with a /SYS/ prefix. The /SYS/ is omitted for readability.

Component Name	IPMI Name	Type	Description	Events
/ACPI	ACPI	ACPI	Host power state	Working, off
/HOT	HOT	Assert/Deassert	Asserts when the blade is calling for fan blast	None
/PWRBS	PWRBS	Assert/Deassert	Power budget status	None
/SLOTID	SLOTID	OEM	This blade's slot, 0-9	None
/VPS	VPS	Power	Blade power consumption	None
/MB/P[0-1]/PRSNT	P[0-1]/PRSNT	Remove/Insert	Processor presence	None
/MB/P[0-1]/D[0-11]/PRSNT	P[0-1]/Dy/PRSNT	Remove/Insert	DIMM presence	None
/MB/T_AMB	MB/T_AMB	Temperature	Inlet air temperature	unr, ucr, lcr, lnr
/MB/T_AMB_FEM	MB/T_AMB_FEM	Temperature	Inlet air temperature under FEM	unr, ucr, lcr, lnr

Component Name	IPMI Name	Type	Description	Events
/MB/T_AMB_REAR	MB/T_AMB_REAR	Temperature	Outlet air temperature	unr, ucr, lcr, lnr
/BLx/ERR	BLx/ERR	Predictive Failure	Blade error (x=0-9 in C10,	Yes
/BLx/PRSNT	BLx/PRSNT	Remove/Insert	Blade presence (x=0-9)	Yes
/BLx/STATE	BLx/STATE	Availability State	Blade state (x=0-9)	Yes
/CMM/ERR	CMM/ERR	Predictive Failure	CMM error	Yes
/CMM/PRSNT	CMM/PRSNT	Remove/Insert	CMM presence	Yes
/FMx/ERR	FMx/ERR	Predictive Failure	Fan Module error (x=0-5)	Yes
/FMx/F[0-1]/TACH	FMx/F[0-1]/TACH	RPM	Fan Module Fan speed (x=0-5)	None
/NEM[0-1]/ERR	NEM[0-1]/ERR	Predictive Failure	NEM error	Yes
/NEM[0-1]/PRSNT	NEM[0-1]/PRSNT	Remove/Insert	NEM presence	Yes
/NEM[0-1]/STATE	NEM[0-1]/STATE	Availability State	NEM state	Yes
/PEM[0-1]/PRSNT	PEM[0-1]/PRSNT	Remove/Insert	PEM presence (0-1)	Yes
/PS[0-1]/PRSNT	PS[0-1]/PRSNT	Remove/Insert	Power Supply x presence	Yes
/PS[0-1]/Sx/V_IN_ERR	PS[0-1]/Sx/V_IN_ERR	Predictive Failure	Power Supply Side x loss of input voltage (x=0-1)	Yes
/PS[0-1]/Sx/V_OUT_OK	PS[0-1]/Sx/V_OUT_OK	Assert/Deassert	Power Supply Side x output is enabled (x=0-1)	Yes

Sensors

Sensors report physical information about the server, including voltages, temperatures, fan speeds, and installation and removal of components.

Note – Sensor names may appear with a /SYS/ prefix. The /SYS/ is omitted for readability.

TABLE 2 Temperature Sensors

Sensor Name	Sensor Type	Description
/MB/T_AMB	Temperature	Motherboard ambient temperature sensor
/MB/T_AMB_FEM	Temperature	Motherboard ambient temperature sensor under the FEM

TABLE 3 Fan Sensors

Sensor Name	Sensor Type	Description
/FM[0-5]/F[0-1]/TACH Speed Fan speed sensor	Speed	Fan speed sensor
/FM[0-5]/ERR	Fault	Fan module error

TABLE 4 Power Supply Unit Current, Voltage, and Power Sensors

Sensor Name	Sensor Type	Description
/PS[0-1]/PRSNT	Presence	Power supply presence sensor
/PS[0-1]/S[0- 1]/V_IN_ERR	Fault	Power supply input voltage sensor
/PS[0-1]/S[0- 1]/V_OUT_OK	Fault	Power supply output voltage fault sensor
/VPS	Fault	Voltage and current monitor

TABLE 5 Presence Sensors

Sensor Name	Sensor Type	Description
/HDD[0-3]/PRSNT	Entity presence	Storage device presence sensor
/PS[0-1]/PRSNT	Entity presence	Power supply presence sensor
/PEM[0-1]/PRSNT	Entity presence	PCI ExpressModule presence sensor
/NEM[0-1]/PRSNT	Entity presence	Network Express Module (NEM) presence sensor
/CMM/PRSNT	Entity presence	Chassis Monitoring Module (CMM) presence sensor
/BL[0-9]/PRSNT	Entity presence	Blade presence sensor
/SLOTID	Entity presence	Blade's slot ID

TABLE 5 Presence Sensors *(Continued)*

Sensor Name	Sensor Type	Description
/MB/P[0-1]/PRSNT	Entity presence	CPU presence sensor
/MB/P[0-1]/D[0-8]/PRSNT	Entity presence	DIMM presence sensor
/MB/FEM[0-1]/PRSNT	Entity presence	Fabric Expansion Module (FEM) presence sensor
/MB/REM/PRSNT	Entity presence	RAID Expansion Module (REM) presence sensor

TABLE 6 System Indicators

Indicator NAC Name	IPMI Name	Color	Location	Description
/OK	OK	Green	Front Panel	Off: Power is off. Fast Blink: SP is booting. Slow Blink: Host is booting/in BIOS. On: Host has started booting OS.
/LOCATE	LOCATE	White	Front Panel	Off: Normal. Fast Blink: Locate function activated. Self extinguishes after 30 minutes.
/SERVICE	SERVICE	Amber	Front Panel	Off: Blade is OK. On: Blade requires service.
/OK2RM	OK2RM	Blue	Front Panel	Off: Blade is not OK to remove. On: Blade is OK to remove.
/HDD[0-3]/OK2RM	HDD[0-3]/OK2RM			Storage drive OK to Remove blue LED.
/HDD[0-3]/SERVICE	HDD[0-3]/SERVICE			Storage drive Service amber LED.
/MB/P[0-1]/Dx/SERVICE	P[0-1]/Dx/SERVICE	Amber	MB (x=0-11)	Off: Normal. On: DIMM was diagnosed faulty.

TABLE 6 System Indicators *(Continued)*

Indicator NAC Name	IPMI Name	Color	Location	Description
/MB/P[0-1]/SERVICE	P[0-1]/SERVICE	Amber	MB	Off: Normal. On: Processor was diagnosed faulty.

Field Replaceable Units (FRUs)

The following table identifies the Field Replaceable Units (FRUs).

FRU NAC Name	IPMI Name	Description
/SYS	/SYS	Product information only
/UUID (hidden)	UUID	The UUID of the server, based on host MAC address.
/CMM	CMM	CMM FRUID data
/MIDPLANE	MIDPLANE	Midplane FRUID data, chassis product information
/MB	MB	Motherboard FRUID
/MB/BIOS	MB/BIOS	BIOS version
/MB/CPLD	MB/CPLD	CPLD firmware version
/MB/NET[0-3]	MB/NET[0-3]	MAC address of host NIC (0-3)
/MB/P[0-1]	MB/P[0-1]	Processor FRUID data
/MB/P[0-1]/Dx	MB/P[0-1]/Dx	DIMM FRUID data (x=0-11)
/NEM[0-1]	NEM[0-1]	NEM FRUID data
/PS[0-1]	PS[0-1]	Power supply FRUID data
/SP	SP	SP MAC address
/SP/NET[0-1]	SP/NET[0-1]	SP MAC address

SNMP and PET Traps

This section describes Simple Network Management Protocol (SNMP) and Platform Event Trap (PET) messages that are generated by devices being monitored by Oracle ILOM.

SNMP traps are generated by SNMP agents that are enabled on the SNMP devices being managed by Oracle ILOM. Oracle ILOM receives the SNMP traps and converts them into SNMP event messages that appear in the event log.

TABLE 7 Memory SNMP Events

SNMP Trap Message	ILOM Event Message	Severity and Description	Sensor Name
sunHwTrapMemoryFault	fault.memory.channel.misconfig ured	Major — A memory component is suspected of causing a fault.	/MB/P/D
sunHwTrapMemoryFault Cleared	fault.memory.channel.misconfig ured	Informational — A memory component fault has been cleared.	/MB/P/D
sunHwTrapComponentFault	fault.memory.intel.dimm.none	Major — A memory component is suspected of causing a fault.	/MB
	fault.memory.conroller.inputinvalid		
	fault.memory.controller.initfailed		
	fault.memory.intel.dimm.popul ation-invalid		
sunHwTrapComponentFault Cleared	fault.memory.intel.dimm.none	Informational — A memory component fault has been cleared.	/MB
	fault.memory.conroller.inputinvalid		
	fault.memory.controller.initfailed		
	fault.memory.intel.dimm.popul ation-invalid		
sunHwTrapMemoryFault	fault.memory.intel.dimm.incom patible	Major — A memory component is suspected of causing a fault.	/MB/P/D
	fault.memory.intel.dimm.incom patible-maxranks		

TABLE 7 Memory SNMP Events *(Continued)*

SNMP Trap Message	ILOM Event Message	Severity and Description	Sensor Name
	fault.memory.intel.dimm.incompatible-quadrank		
sunHwTrapMemoryFault Cleared	fault.memory.intel.dimm.incom patible	Informational — A memory component fault has been cleared.	/MB/P/D
	fault.memory.intel.dimm.incompatible-maxranks		
	fault.memory.intel.dimm.incompatible-quadrank		

TABLE 8 Environmental SNMP Events

SNMP Trap Message	ILOM Event Message	Severity and Description	Sensor Name
sunHwTrapPowerSupplyFault	fault.chassis.env.power.loss	Major — A power supply component is suspected of causing a fault	/PS
sunHwTrapPowerSupplyFault Cleared	Cleared fault.chassis.env.power.loss	Informational — A power supply component fault has been cleared	/PS
sunHwTrapComponentFault	fault.chassis.env.temp.over-fail	Major — A component is suspected of causing a fault	/SYS/
sunHwTrapComponentFault Cleared	fault.chassis.env.temp.over-fail	Informational — A component fault has been cleared	/SYS/
sunHwTrapTempCritThreshold Exceeded	Lower critical threshold exceeded	Major — A temperature sensor has reported that its value has gone above an upper critical threshold setting or below a lower critical threshold setting	/DBP/T_A MB
sunHwTrapTempCritThreshold Deasserted	Lower critical threshold no longer exceeded	Informational — A temperature sensor has reported that its value is in the normal operating range	/DBP/T_A MB
sunHwTrapTempNonCrit ThresholdExceeded	Upper noncritical threshold exceeded	Minor — A temperature sensor has reported that its value has gone above an upper critical threshold setting or below a lower critical threshold setting	/DBP/T_A MB

TABLE 8 Environmental SNMP Events *(Continued)*

SNMP Trap Message	ILOM Event Message	Severity and Description	Sensor Name
sunHwTrapTempOk	Upper noncritical threshold no longer exceeded	Informational — A temperature sensor has reported that its value is in the normal operating range	/DBP/T_A MB
sunHwTrapTempFatalThreshol dExceeded	Lower fatal threshold exceeded	Critical — A temperature sensor has reported that its value has gone above an upper fatal threshold setting or below a lower fatal threshold setting	/DBP/T_A MB
sunHwTrapTempFatalThreshol dDeasserted	Lower fatal threshold no longer exceeded	Informational — A temperature sensor has reported that its value has gone below an upper fatal threshold setting or above a lower fatal threshold setting	/DBP/T_A MB
sunHwTrapTempFatalThreshol dExceeded	Upper fatal threshold exceeded	Critical — A temperature sensor has reported that its value has gone above an upper fatal threshold setting or below a lower fatal threshold setting	/T_AMB
sunHwTrapTempCritThreshold Exceeded	Upper critical threshold exceeded	Major — A temperature sensor has reported that its value has gone above an upper critical threshold setting or below a lower critical threshold setting	/T_AMB
sunHwTrapTempCritThreshold Deasserted	Upper critical threshold no longer exceeded	Informational — A temperature sensor has reported that its value is in the normal operating range	/T_AMB
sunHwTrapTempFatalThreshol dDeasserted	Upper fatal threshold no longer exceeded	Informational — A temperature sensor has reported that its value has gone below an upper fatal threshold setting or above a lower fatal threshold setting	/T_AMB

TABLE 8 Environmental SNMP Events *(Continued)*

SNMP Trap Message	ILOM Event Message	Severity and Description	Sensor Name
sunHwTrapComponentError	Assert	Major — A power supply sensor has detected an error	/HOT /PSn/Sn/V_OUT_OK /PSn/Sn/V_OUT_OK /PSn/Sn/V_OUT_OK
sunHwTrapComponentOk	Deassert	Informational — A power supply sensor has returned to its normal state	/PSn/Sn/V_OUT_OK /PSn/Sn/V_OUT_OK /PSn/Sn/V_OUT_OK

TABLE 9 Device SNMP Events

SNMP Trap Message	ILOM Event Message	Severity and Description	Sensor Name
sunHwTrapComponentFault	fault.chassis.device.missing	Major; A component is suspected of causing a fault	/SYS/
sunHwTrapComponentFault Cleared	fault.chassis.device.missing	Informational; A component fault has been cleared	/SYS/
sunHwTrapComponentFault	fault.chassis.device.fail	Major; A component is suspected of causing a fault	/CMM
sunHwTrapComponentFault Cleared	fault.chassis.device.fail	Informational; A component fault has been cleared	/CMM
sunHwTrapIOFault	fault.chassis.device.fail	Major; A component in the IO subsystem is suspected of causing a fault	/NEM
sunHwTrapIOFaultCleared	fault.chassis.device.fail	Informational; An IO subsystem component fault has been cleared	/NEM

TABLE 10 Power Supply SNMP Events

SNMP Trap Message	ILOM Event Message	Severity and Description	Sensor Name
sunHwTrapPowerSupplyError	Assert	Major; A power supply sensor has detected an error	/PWRBS
sunHwTrapPowerSupplyOk	Deassert	Informational; A power supply sensor has returned to its normal state	/PWRBS
sunHwTrapPowerSupplyFault	fault.chassis.env.power.loss	Major; A power supply component is suspected of causing a fault	/PS
sunHwTrapPowerSupplyFault Cleared	fault.chassis.env.power.loss	Informational; A power supply component fault has been cleared	/PS

Platform Event Trap (PET) events are generated by systems with Alert Standard Format (ASF) or an IPMI baseboard management controller. The PET events provide advance warning of possible system failures.

TABLE 11 System Power Events

SNMP Trap Message	ILOM Event Message	Severity and Description	Sensor Name
petTrapPowerUnitState DeassertedAssert	PowerSupply sensor ASSERT	Critical; A run-time power fault has occurred	/PWRBS
petTrapPowerSupplyStat eAssertedAssert	PowerSupply sensor DEASSERT	Informational; Power supply is connected to AC Power	/PWRBS

TABLE 12 Entity Present Events

SNMP Trap Message	ILOM Event Message	Severity and Description	Sensor Name
petTrapProcessorPresence DetectedDeassert	EntityPresence Insert	Critical; A processor is absent or has been removed.	/HOSTPOWER /CMM/PRSNT /MB/REM/PRSNT /MB/FEM0/PRSNT /MB/FEM1/PRSNT /PEM0/PRSNT /PEM1/PRSNT /MB/P0/PRSNT /MB/P1/PRSNT /MB/P0/D0/PRSNT /MB/P0/D1/PRSNT /MB/P0/D2/PRSNT /MB/P0/D3/PRSNT /MB/P0/D4/PRSNT /MB/P0/D5/PRSNT /MB/P0/D6/PRSNT /MB/P0/D7/PRSNT /MB/P0/D8/PRSNT /MB/P1/D0/PRSNT /MB/P1/D1/PRSNT /MB/P1/D2/PRSNT /MB/P1/D3/PRSNT /MB/P1/D4/PRSNT /MB/P1/D5/PRSNT /MB/P1/D6/PRSNT /MB/P1/D7/PRSNT /MB/P1/D8/PRSNT /HDD0/PRSNT /HDD1/PRSNT /HDD2/PRSNT /HDD3/PRSNT /NEM0/PRSNT /NEM1/PRSNT /BL0/PRSNT /BL1/PRSNT /BL2/PRSNT /BL3/PRSNT /PS0/PRSNT /PS1/PRSNT /PS2/PRSNT /PS3/PRSNT

TABLE 12 Entity Present Events *(Continued)*

SNMP Trap Message	ILOM Event Message	Severity and Description	Sensor Name
petTrapEntityPresenceDeviceInsertedAssert	EntityPresence Remove	Informational; A device is present or has been inserted	/HOSTPOWER /CMM/PRSNT /MB/REM/PRSNT /MB/FEM0/PRSNT /MB/FEM1/PRSNT /PEM0/PRSNT /PEM1/PRSNT /MB/P0/PRSNT /MB/P1/PRSNT /MB/P0/D0/PRSNT /MB/P0/D1/PRSNT /MB/P0/D2/PRSNT /MB/P0/D3/PRSNT /MB/P0/D4/PRSNT /MB/P0/D5/PRSNT /MB/P0/D6/PRSNT /MB/P0/D7/PRSNT /MB/P0/D8/PRSNT /MB/P1/D0/PRSNT /MB/P1/D1/PRSNT /MB/P1/D2/PRSNT /MB/P1/D3/PRSNT /MB/P1/D4/PRSNT /MB/P1/D5/PRSNT /BL0/PRSNT /MB/P1/D6/PRSNT /MB/P1/D7/PRSNT /MB/P1/D8/PRSNT /HDD0/PRSNT /HDD1/PRSNT /HDD2/PRSNT /HDD3/PRSNT /NEM0/PRSNT /NEM1/PRSNT /BL1/PRSNT /BL2/PRSNT /BL3/PRSNT /PS0/PRSNT /PS1/PRSNT /PS2/PRSNT /PS3/PRSNT

TABLE 13 Environmental Events

SNMP Trap Message	ILOM Event Message	Severity and Description	Sensor Name
petTrapTemperatureStateDeassertedDeassert	Temperature sensor ASSERT	Informational; Temperature event occurred	/HOT

TABLE 13 Environmental Events *(Continued)*

SNMP Trap Message	ILOM Event Message	Severity and Description	Sensor Name
petTrapTemperatureStateDeassertedDeassert	Temperature sensor DEASSERT	Critical; Temperature event occurred	/HOT
petTrapTemperatureUpperNonRecoverableGoingLowDeassert	Temperature Upper non-critical threshold has been exceeded	Major; Temperature has decreased below upper non-recoverable threshold	/MB/T_AMB
petTrapTemperatureStateAssertedAssert	Temperature Upper non-critical threshold no longer exceeded	Critical; Temperature event occurred. Possible cause: CPU is too hot.	/MB/T_AMB
petTrapTemperatureUpperCriticalGoingHigh	Temperature Lower fatal threshold has been exceeded	Major; Temperature has increased above upper critical threshold	/MB/T_AMB
petTrapTemperatureUpperCriticalGoingLowDeassert	Temperature Lower fatal threshold no longer exceeded	Warning; Temperature has decreased below upper critical threshold	/MB/T_AMB
petTrapTemperatureLowerNonCriticalGoingLow	petTrapTemperatureLowerNonCriticalGoingLow	Warning; Temperature has decreased below lower non-critical threshold	/MB/T_AMB
Warning; Temperature has decreased below lower non-critical threshold	Temperature Lower critical threshold no longer exceeded	Informational; Temperature has returned to normal	/MB/T_AMB
petTrapTemperatureUpperNonCriticalGoingHigh	Temperature Upper critical threshold has been exceeded	Warning; Temperature has increased above upper non-critical threshold	/MB/T_AMB
petTrapTemperatureUpperNonCriticalGoingLowDeassert	Temperature Upper critical threshold no longer exceeded	Informational; Temperature has returned to normal	/MB/T_AMB
petTrapTemperatureLowerCriticalGoingLow	Temperature Lower fatal threshold has been exceeded	Major; Temperature has decreased below lower critical threshold	/MB/T_AMB
petTrapTemperatureLowerCriticalGoingHighDeassert	Temperature Lower fatal threshold no longer exceeded	Warning; Temperature has increased above lower critical threshold	/MB/T_AMB
petTrapTemperatureLowerNonRecoverableGoingHighDeassert	Temperature Lower non-critical threshold has been exceeded	Major; Temperature has increased above lower non-recoverable threshold	/MB/T_AMB

TABLE 13 Environmental Events *(Continued)*

SNMP Trap Message	ILOM Event Message	Severity and Description	Sensor Name
petTrapTemperatureUpperNonRecoverableGoingHigh	Temperature Lower non-critical threshold no longer exceeded	Critical; Temperature has increased above upper non-recoverable threshold	

TABLE 14 Component, Device, and Firmware Events

SNMP Trap Message	ILOM Event Message	Severity and Description	Sensor Name
petTrapOEMStateDeassertedAssert	petTrapOEMStateDeassertedAssert	Informational; A fault has occurred (OEM State Deasserted assert)	/MB/FEMn/FAULT
petTrapOEMPredictiveFailureAsserted	OEMReserved sensor DEASSERT	Major; OEM Predictive Failure Asserted	/MB/FEMn/FAULT
petTrapOEMPredictiveFailureDeasserted	OEMReserved reporting Predictive Failure	Informational; OEM Predictive Failure Deasserted	/CMM/ERR /NEMn/ERR /NEMn/ERR /BLn/ERR /BLn/ERR /BLn/ERR /BLn/ERR
petTrapSystemFirmwareError	OEMReserved Return to normal	Informational; System Firmware Error reported	
petTrapModuleBoardTransitionToRunningAssert	Module Transition to Running assert	Informational	/NEMn/STATE /NEMn/STATE /BLn/STATE /BLn/STATE /BLn/STATE /BLn/STATE
petTrapModuleBoardTransitionToInTestAssert	Module Transition to In Test assert	Informational	
petTrapModuleBoardTransitionToPowerOffAssert	Module Transition to Power Off assert	Informational	
petTrapModuleBoardTransitionToOnLineAssert	Module Transition to On Line assert	Informational	
Undocumented PET 1378820	Module Transition to Off Line assert	Informational	
petTrapModuleBoardTransitionToOffDutyAssert	Module Transition to Off Duty assert	Informational	/NEMn/STATE /NEMn/STATE /BLn/STATE /BLn/STATE /BLn/STATE /BLn/STATE

TABLE 14 Component, Device, and Firmware Events *(Continued)*

SNMP Trap Message	ILOM Event Message	Severity and Description	Sensor Name
petTrapModuleBoardTransitionToDegradedAssert	Module Transition to Degraded assert	Informational	
petTrapModuleBoardTransitionToPowerSaveAssert	Module Transition to Power Save assert	Informational	
petTrapModuleBoardInstallErrorAssert	Module Install Error assert	Informational	
Undocumented PET 132097	Voltage reporting Predictive Failure	Informational	/PSn/V_IN_ERR /PSn/V_IN_ERR
Undocumented PET 132096	Voltage Return to normal	Informational	/PSn/V_IN_ERR /PSn/V_IN_ERR

TABLE 15 Power Supply Events

SNMP Trap Message	ILOM Event Message	Severity and Description	Sensor Name
petTrapVoltageStateDeassertedDeassert	Voltage sensor ASSERT	Informational; Voltage event occurred	/PSn/V_OUT_OK /PSn/V_OUT_OK
petTrapVoltageStateAssertedDeassert	Voltage sensor DEASSERT		/PSn/V_OUT_OK /PSn/V_OUT_OK

TABLE 16 Fan Events

SNMP Trap Message	ILOM Event Message	Severity and Description	Sensor Name
petTrapFanPredictiveFailureDeasserted	Fan reporting Predictive Failure	Informational; Fan Predictive Failure state has been cleared	/FMn/ERR
petTrapFanLowerNonRecoverableGoingLow	Fan Return to normal	Critical; Fan speed has decreased below lower non-recoverable threshold. Fan failed or removed.	

Related Information

- "Identifying System Hardware Components" on page 213
- "Table Legend" on page 214
- "System Board Components (Sensors)" on page 214
- "Sensors" on page 215
- "Field Replaceable Units (FRUs)" on page 218
- "SNMP and PET Traps" on page 219

Getting Server Firmware and Software

This section explains the options for accessing server firmware and software.

Description	Links
Learn about server firmware and software updates.	"Firmware and Software Updates " on page 229
Learn about the options for accessing firmware and software.	"Firmware and Software Access Options" on page 230
View the available firmware and software packages.	"Available Software Release Packages" on page 230
Access the firmware and software packages through Oracle System Assistant, My Oracle Support, or a physical media request.	"Accessing Firmware and Software" on page 231
Install firmware and software updates.	"Installing Updates" on page 235

Firmware and Software Updates

Firmware and software, such as hardware drivers and tools for the server, are updated periodically. Updates are made available as a software release. The software release is a set of downloads (patches) that include all available firmware, hardware drivers, and utilities for the server. All these have been tested together. The Read Me document that is included with the download explains what has changed and what has not changed from the prior software release.

You should update your server firmware and software as soon as possible after the software release becomes available. Software releases often include bug fixes, and updating ensures that your server module software is compatible with the latest chassis firmware and other chassis component firmware and software.

A Read Me file in the download package and the *Sun Blade X3-2B (formerly Sun Blade X6270 M3) Product Notes* contain information about the updated files in the download package, as well as bugs that are fixed with the current release. The product notes also provide information about which server module software versions are supported with the latest chassis firmware.

Firmware and Software Access Options

Use one of the following options to obtain the latest set of firmware and software for your server:

- **Oracle System Assistant** – Oracle System Assistant is a new factory-installed option for Oracle servers that allows you to easily download and install server firmware and software.

  For more information about using Oracle System Assistant, refer to "Access Oracle System Assistant Remotely" on page 30.

- **My Oracle Support** – All system firmware and software are available from My Oracle Support at `http://support.oracle.com`.

  For more information about what is available on the My Oracle Support, see "Available Software Release Packages" on page 230.

  For instructions on how to download software releases from My Oracle Support, see: "Download Firmware and Software Using My Oracle Support" on page 232.

- **Physical media request (PMR)** – You can request a DVD that contains any of the downloads (patches) available from My Oracle Support.

  For information see: "Request Physical Media (Online)" on page 233.

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).

For servers and blades, the pattern is similar. The product is the server. Each server contains a set of releases. These releases are not true software product releases, but releases of updates for the server. These updates are called software releases and comprise several downloads, all tested together. Each download contains firmware, drivers, or utilities.

My Oracle Support has the same set of download types for this server family as shown in the following table. These can also be requested through a physical media request (PMR). The same firmware and software can also be downloaded using Oracle System Assistant.

Package Name	Description	When to Download This Package
X3-2B SW*version* – Firmware Pack	All the system firmware, including Oracle ILOM, BIOS, and option card firmware.	You need the latest firmware.

Package Name	Description	When to Download This Package
X3-2B SW*version* – OS Pack	An OS pack is available for each supported operating system version. Each OS pack includes a package of all tools, drivers, and utilities for that version of the OS. Software includes Oracle Hardware Management Pack and LSI MegaRAID software.	You need to update OS-specific drivers, tools, or utilities.
X3-2B SW*version* – All packs	Includes the Firmware Pack, all OS Packs, and all documents. This pack does not include SunVTS or the Oracle System Assistant image.	You need to update a combination of system firmware and OS-specific software.
X3-2B SW*version* – Diagnostics	SunVTS diagnostics image.	You need the SunVTS diagnostics image.
X3-2B SW*version* – Oracle System Assistant Updater	Oracle System Assistant updater and ISO update image.	You need to manually recover or update Oracle System Assistant.

Each of the downloads is a zip file that contains a Read Me and a set of subdirectories containing firmware or software files. The Read Me file contains details on the components that have changed since the prior software release and the bugs that have been fixed. For more details on the directory structure of these downloads, refer to the *Sun Blade X3-2B (formerly Sun Blade X6270 M3) Administration Guide*.

Accessing Firmware and Software

This section covers instructions for downloading or requesting software release files.

Note – You can also use Oracle System Assistant to easily download and use the latest software release. For further information, refer to the *Sun Blade X3-2B (formerly Sun Blade X6270 M3) Administration Guide*.

There are two other methods for obtaining updated firmware and software.

- "Download Firmware and Software Using My Oracle Support" on page 232
- "Requesting Physical Media" on page 232

▼ Download Firmware and Software Using My Oracle Support

1. **Go to: `http://support.oracle.com`**
2. **Sign in to My Oracle Support.**
3. **At the top of the page, click the Patches and Updates tab.**
   The Patches and Updates screen appears.
4. **In the Search screen, click Product or Family (Advanced Search).**
   The screen appears with search fields.
5. **In the Product field, select the product from the drop-down list.**
   Alternatively, type a full or partial product name (for example, Sun Blade X3-2B) 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 230 for a description of the available downloads.
8. **To select a patch, click the check box next to the patch name (you can select more than one patch).**
   A pop-up action panel appears. The panel contains several action options.
9. **To download the update, click Download in the pop-up panel.**
   The download begins automatically.

Requesting Physical Media

If your processes do not allow downloads from Oracle web sites, you can access the latest software release through a physical media request (PMR).

The following table describes the high-level tasks for making a physical media request and provides links for further information.

Description	Link
Gather information you will need to provide for the request.	"Gathering Information for the Physical Media Request" on page 233
Make the physical media request either online or by calling Oracle Support.	"Request Physical Media (Online)" on page 233 "Request Physical Media (by Phone)" on page 234

Gathering Information for the Physical Media Request

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

Before you make the PMR, gather the following information:

- **Obtain product name, software release version, and patches required**. It will be easier to make the request if you know the latest software release and the name of the download packages (patches) that you are requesting.
  - *If you have access to My Oracle Support* – Follow the instructions in "Download Firmware and Software Using My Oracle Support" on page 232 to determine the latest software release and view available downloads (patches). After viewing the list of patches, you can navigate away from Patch Search Results page, if you do not want to continue with the download steps.
  - *If you do not have access to My Oracle Support* – Use the information in "Available Software Release Packages" on page 230 to determine which packages you want, then request these packages for the latest software release.
- **Have the shipping information ready**. You will need to provide a contact, phone number, email address, company name and shipping address for the request.

▼ Request Physical Media (Online)

Before You Begin Gather the information described in "Gathering Information for the Physical Media Request" on page 233 before making the request.

1. **Go to `http://support.oracle.com` and sign in.**
2. **Click on the Contact Us link in the upper right corner of the page.**
3. **In the Request Description section, fill in the following:**
   a. **In the Request Category drop-down list, 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 Sun Blade Sun Blade X3-2B`

4 **In the Request Details section, answer the questions shown in the following 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*: Sun Blade X3-2B *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

5 **Fill in the Ship-To contact, phone number, email address, company name, and shipping address information.**

6 **Click Next.**

7 **Under Relevant Files, type: `Knowledge Article 1361144.1`**

8 **Click Submit.**

▼ Request Physical Media (by Phone)

Before You Begin Gather the information described in "Gathering Information for the Physical Media Request" on page 233 before making the request.

1 **Call Oracle support, using the appropriate number from the Oracle Global Customer Support Contacts Directory:**

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

2 **Tell Oracle support that you want to make a physical media request (PMR) for the Sun Blade X3-2B.**

- **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 not able to access the software release information, request the latest platform software release for the Sun Blade X3-2B.**

Installing Updates

The following topics provide information about installing firmware and software updates:

- "Installing Firmware" on page 235
- "Installing Hardware Drivers and OS Tools" on page 236

Installing Firmware

Updated firmware can be installed using one of the following:

- **Oracle Enterprise Manager Ops Center** – Ops Center Enterprise Controller can automatically download the latest firmware from Oracle, or firmware can be loaded manually into the Enterprise Controller. In either case, Ops Center can install the firmware onto one or more servers, blades, or blade chassis.

  For more information, go to:

  `http://www.oracle.com/us/products/enterprise-manager/opscenter/index.html`
- **Oracle System Assistant** – Oracle System Assistant can download and install the latest firmware from Oracle.

  For more information, refer to "Setting Up Oracle System Assistant and Updating the Server" on page 41.
- **Oracle Hardware Management Pack** – The `fwupdate` CLI tool within the Oracle Hardware Management Pack can be used to update firmware within the system.

  For more information, go to:`http://www.oracle.com/pls/topic/lookup?ctx=ohmp`.
- **Oracle ILOM** – Oracle ILOM and BIOS firmware are the only firmware that can be updated using the Oracle ILOM web interface and Oracle ILOM CLI.

  For more information, go to: `http://www.oracle.com/pls/topic/lookup?ctx=ilom31`.

Installing Hardware Drivers and OS Tools

Updated hardware drivers and operating system (OS)-related tools, such as the Oracle Hardware Management Pack, can be installed using one of the following:

- **Oracle Enterprise Manager Ops Center** – For more information, go to:

  `http://www.oracle.com/us/products/enterprise-manager/opscenter/index.html`
- **Oracle System Assistant** – For more information, refer to *Sun Blade X3-2B (formerly Sun Blade X6270 M3) Administration Guide*.
- Other deployment mechanisms such as JumpStart, Kickstart or third-party tools.

  For more information, refer to your OS documentation.

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