

# Sun Blade X6275 M2 Server Module Service Manual



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# Service Manual Overview

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The *Sun Blade X6275 M2 Server Module Service Manual* contains information, procedures, and reference topics for operating and maintaining the server. The following table describes the sections that are included.

Description	Section
An overview of the server module and its components.	<a href="#">“Server Module and Components Overview” on page 13</a>
Power information and tasks related to powering on and off the server module.	<a href="#">“Power and Reset” on page 19</a>
Important information and procedures for preparing to service the server.	<a href="#">“Preparation Procedures for Service and Operation” on page 25</a>
Procedures for the safe and efficient removal and installation of server components.	<a href="#">“Component Removal and Installation Procedures” on page 37</a>
Maintenance-related information and procedures.	<a href="#">“Diagnostic and Maintenance Information and Procedures” on page 67</a>
Server module-specific environmental and physical specifications.	<a href="#">“Specifications” on page 129</a>



# Using This Documentation

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This section describes related documentation, submitting feedback, and a document change history.

- “Product Information Web Site” on page 7
- “Related Books” on page 7
- “About This Documentation (PDF and HTML)” on page 9
- “Documentation Comments” on page 10
- “Contributors” on page 10
- “Change History” on page 10

## Product Information Web Site

For information about the Sun Blade X6275 M2 server module, go to the <http://www.oracle.com/goto/blades> page and click on your server model listed near the bottom.

At that site, you can find links to the following information and downloads:

- Product information and specifications
- Software and firmware downloads

## Related Books

The following is a list of documents related to Oracle's Sun Blade X6275 M2 server module. These and additional support documents are available on the web at:

<http://download.oracle.com/docs/cd/E19962-01/>

Document Group	Document	Description
Sun Blade X6275 M2 Server Module Documentation	Sun Blade X6275 M2 Server Module Product Documentation	Integrated HTML version of all starred (*) documents, including Search and Index.
	<i>Sun Blade X6275 M2 Server Module Getting Started Guide</i>	Pictorial setup quick reference.
	<i>Sun Blade X6275 M2 Server Module Installation Guide *</i>	How to install, rack, and configure the server up to initial power-on.
	<i>Sun Blade X6275 M2 Server Module Product Notes *</i>	Important late-breaking information about your server.
	<i>Sun Blade X6275 M2 Server Module Installation Guide for Oracle Solaris Operating Systems *</i>	How to install the Oracle Solaris OS on your server.
	<i>Sun Blade X6275 M2 Server Module Installation Guide for Linux Operating Systems *</i>	How to install a supported Linux OS on your server.
	<i>Sun Blade X6275 M2 Server Module Installation Guide for Windows Operating Systems *</i>	How to install a supported version of Microsoft Windows OS on your server.
	<i>Sun Blade X6275 M2 Server Module Installation Guide for Oracle VM Operating Systems *</i>	How to install a supported version of Oracle VM OS on your server.
	<i>Oracle x86 Servers Diagnostics Guide *</i>	How to diagnose problems with your server.
	<i>Sun Blade X6275 M2 Server Module Service Manual *</i>	How to service and maintain your server.
	<i>Sun Blade X6275 M2 Server Module Safety and Compliance Guide</i>	Safety and compliance information about your server.
<i>Oracle Integrated Lights Out Manager (ILOM) 3.0 Supplement for the Sun Blade X6275 M2 Server Module *</i>	Version-specific supplemental information for your server's Integrated Lights Out Manager.	
Sun Disk Management Documentation	<i>Sun x64 Server Disk Management Overview</i>	Information about managing your server's storage.
x64 Servers Applications and Utilities Documentation	<i>Sun x64 Server Utilities Reference Manual</i>	How to use the available utilities included with your server.

Document Group	Document	Description
Oracle Integrated Lights Out Manager (ILOM) 3.0 Documentation	<i>Oracle Integrated Lights Out Manager (ILOM) 3.0 Feature Updates and Release Notes</i>	Information about new ILOM features.
	<i>Oracle Integrated Lights Out Manager (ILOM) 3.0 Getting Started Guide</i>	Overview of ILOM 3.0.
	<i>Oracle Integrated Lights Out Manager (ILOM) 3.0 Concepts Guide</i>	Conceptual information about ILOM 3.0.
	<i>Oracle Integrated Lights Out Manager (ILOM) 3.0 Web Interface Procedures Guide</i>	How to use ILOM through the web interface.
	<i>Oracle Integrated Lights Out Manager (ILOM) 3.0 CLI Procedures Guide</i>	How to use ILOM through commands.
	<i>Oracle Integrated Lights Out Manager (ILOM) 3.0 Management Protocols Reference Guide</i>	Information about management protocols.

Translated versions of some of these documents are available at the web site described previously in Simplified Chinese, Korean, Japanese, French and Spanish. English documentation is revised more frequently and might be more up-to-date than the translated documentation.

## About This Documentation (PDF and HTML)

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.

A PDF that includes all information on a particular topic subject (such as hardware installation or product notes) can be generated by clicking on the PDF button in the upper left corner of the page.

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**Note** – The “Documentation Information” and “Index” topics do not have associated PDF.

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# Documentation Comments

Oracle is interested in improving the product documentation and welcomes your comments and suggestions. You can submit comments at: <http://www.oracle.com/goto/docfeedback>.

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## Change History

The following lists the release history of this documentation set:

- November 2010. Initial publication.
- November 2010. Information added to the *Sun Blade X6275 M2 Server Module Product Notes* for platform software release 1.1. Added new firmware version, PC-Check 6.27s support, CRs 6994690, 6992284, 6994464.
- January 2011. Information added to the *Sun Blade X6275 M2 Installation Guide* for configuring pre-installed Oracle Solaris or Oracle VM. Information added to the *Sun Blade X6275 M2 Server Module Product Notes* for platform software release 1.2. Added new firmware version, CRs 6971164, 7009654, 7009666, 7010601. Information added to the *Oracle Integrated Lights Out Manager (ILOM) 3.0 Supplement for the Sun Blade X6275 M2 Server Module* for proving physical presence, reading `available_power` in ILOM.
- March 2011. Information removed from the *Sun Blade X6275 M2 Installation Guide* for configuring pre-installed Oracle Solaris OS or Oracle VM on FMod. Information removed from the *Sun Blade X6275 M2 Product Notes* on available pre-installed Oracle Solaris OS or Oracle VM on FMod.
- September 2011. Information added to the *Sun Blade X6275 M2 Server Module Product Notes* for platform software release 1.3, including new firmware version and new OS version support. Added information about BIOS hardware prefetch options to the *Sun Blade X6275 M2 Server Module Product Notes* and the *Sun Blade X6275 M2 Server Module Service Manual*. Fixed CRs 6971164 and 7009654.
- January 2012. Updated physical dimension specifications in the *Sun Blade X6275 M2 Server Module Installation Guide* and the *Sun Blade X6275 M2 Server Module Service Manual*. Added information to the *Sun Blade X6275 M2 Server Module Product Notes* for OS support for Oracle VM 3.0.1 (1GbE), 3.0.2 (1GbE) and 3.0.3 (10GbE).
- March 2012. Information corrected in the *Sun Blade X6275 M2 Installation Guide* for the number of 10 GbE ports per node. Information added to the *Sun Blade X6275 M2 Product Notes* for CR 7072665.

- August 2012. Information added to the *Sun Blade X6275 M2 Server Module Product Notes* for platform software release 1.4, including new firmware version and new OS version support.
- January 2013. Updated information on replacing SP and motherboard in the *Sun Blade X6275 M2 Server Module Service Manual*.
- March 2013. Additional update to information on replacing SP and motherboard in the *Sun Blade X6275 M2 Server Module Service Manual*.



# Server Module and Components Overview

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This section provides an overview of the features of the Sun Blade X6275 M2 Server Module.

The following topics are included:

- “Product Description” on page 13
- “Product Features” on page 14
- “About the Sun Blade 6000 Modular System Chassis” on page 15
- “Illustrated Parts Breakdown” on page 15
- “Front Panel LEDs and Features” on page 16

## Product Description

The Sun Blade X6275 M2 Server Module is a dual-node blade. The server’s two compute nodes (node 0 and node 1) are housed on a single motherboard in a single blade enclosure. The two compute nodes within a blade are identical and symmetric, but are fully independent of each other.

Each of the two nodes in the blade are based on a two-socket Intel Xeon platform, which consists of the IOH24D, the I/O Controller Hub 10 (ICH10R), and the I/O subsystem. Both compute nodes in the Sun Blade X6275 M2 Server module have their own ILOM SP, which is based on the AST2100 chip.

Each node includes an Oracle Flash Module (FMod), which provides a reliable and secure boot source for the node.

There are two versions of the Sun Blade X6275 M2 Server Module:

- *Sun Blade X6275 M2 Server Module 1 GbE Server Module*
- *Sun Blade X6275 M2 Server Module 10 GbE Server Module*

Both version of the Sun Blade X6275 M2 Server Module are supported in the Sun Blade 6000 modular system chassis.

# Product Features

The Sun Blade X6275 M2 Server Module product features are listed in the following table.

Feature	Description
CPU	<p>Up to four Intel Xeon 5500 Series Quad-core processors per server module.</p> <ul style="list-style-type: none"> <li>■ Intel Xeon six-core X5670, 2.93 GHz, 12 MB cache, 6.40 GT/s QPI, HT, Turbo Boost, 95 W</li> <li>■ Intel Xeon six-core X5660, 2.80 GHz, 12 MB cache, 6.40 GT/s QPI, HT, Turbo Boost, 95 W</li> <li>■ Intel Xeon quad-core E5620, 2.4 GHz, 12 MB cache, 5.86 GT/s QPI, HT, Turbo boost, 80 W</li> </ul>
Nodes	Two independent compute nodes, 0 and 1. The Sun Blade X6275 M2 Server Module has two symmetric compute nodes, with each node contains two Intel Xeon processors sockets.
Density	Four sockets, 16 cores (eight cores per node), and 32 threads per server module.
Memory	<p>Up to 24 DDR3 LV DIMMs per blade (12 per node).</p> <p>Up to 2 DDR3 LV DIMMs per channel, 3 channels per installed processor.</p> <p>Supported DIMMs:</p> <ul style="list-style-type: none"> <li>■ 4 GB dual-rank, LV DDR3–1333 MHz, +1.35 V, 2 Gb</li> <li>■ 8 GB dual-rank, LV DDR3-1333 MHz, +1.35 V, 2 Gb</li> </ul> <p>Up to 96 GB of main memory (per compute node) using 8 GB DDR3 LV DIMMs.</p> <p>Up to 48 GB of main memory (per compute node) using 4 GB DDR3 LV DIMMs.</p> <p>Up to total of 192 GB of memory, per server module (8 GB DIMMs).</p> <p>See <a href="#">“DIMM Population Rules and Guidelines for the Sun Blade X6275 M2 Server module”</a> on page 43.</p>
Video Memory	8 MB, Maximum resolution: 1280x1024 pixels.
Flash Modules	Two on-board 24 GB SATA-based Flash Modules (FMods)(one per compute node) with Energy Storage modules.
USB	Two on-board USB 2.0 ports (one per compute node).
HBA/HCA	QDR Infiniband Express Module with Connect X-2

Feature	Description
Service processor (SP)	<p>Server modules include a service processor (SP) mezzanine card. The SP provides IPMI 2.0 compliant remote management capabilities across a broad range of Sun server models. Each server module node's SP features:</p> <ul style="list-style-type: none"> <li>■ Integrated Lights Out Manager (ILOM)</li> <li>■ Local ILOM command-line access using serial connection</li> <li>■ 10/100 management Ethernet port to mid-plane</li> <li>■ Remote keyboard, video, mouse, and storage (KVMS) over IP</li> </ul>
Front Panel I/O	<p>Two universal connector ports (UCP), one per compute node, are available for use with the multi-port cable. The dongle cable provides the following interface connections:</p> <ul style="list-style-type: none"> <li>■ VGA graphics</li> <li>■ Serial port</li> <li>■ Dual USB ports (keyboard/mouse/USB device)</li> </ul>
Operating systems	For supported operating systems, see <a href="#">Sun Blade X6275 M2 Server Module Product Notes</a> .
Chassis Compatibility	The Sun Blade 6000 modular system chassis is the only supported chassis.

## About the Sun Blade 6000 Modular System Chassis

Sun Blade X6275 M2 Server module is used with the Sun Blade 6000 modular system chassis. The Sun Blade 6000 modular system chassis can hold up-to-ten server modules for a maximum of 20 compute nodes per chassis. For more information, refer to the Sun Blade 6000 Modular System Chassis documentation.

## Illustrated Parts Breakdown

The following illustration provides an exploded view of the Sun Blade X6275 M2 Server module's internal components. Use this illustration and the accompanying table to identify components.

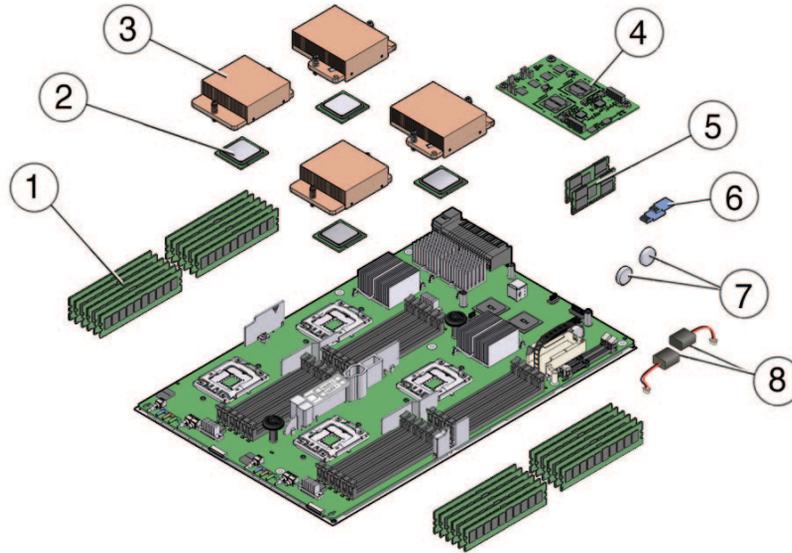


Figure Legend

1	DDR3 LV DIMMs (24 Max)	5	Flash Modules (2 Max)
2	CPU (4 Max)	6	USB ports (2)
3	heatsink	7	RTC battery (2)
4	Service processor (SP) board	8	Energy Storage Modules (ESM) (2)

See also: “CRUs and FRUs” on page 26

## Front Panel LEDs and Features

The following illustration shows front panel features on the Sun Blade X6275 M2 Server module.

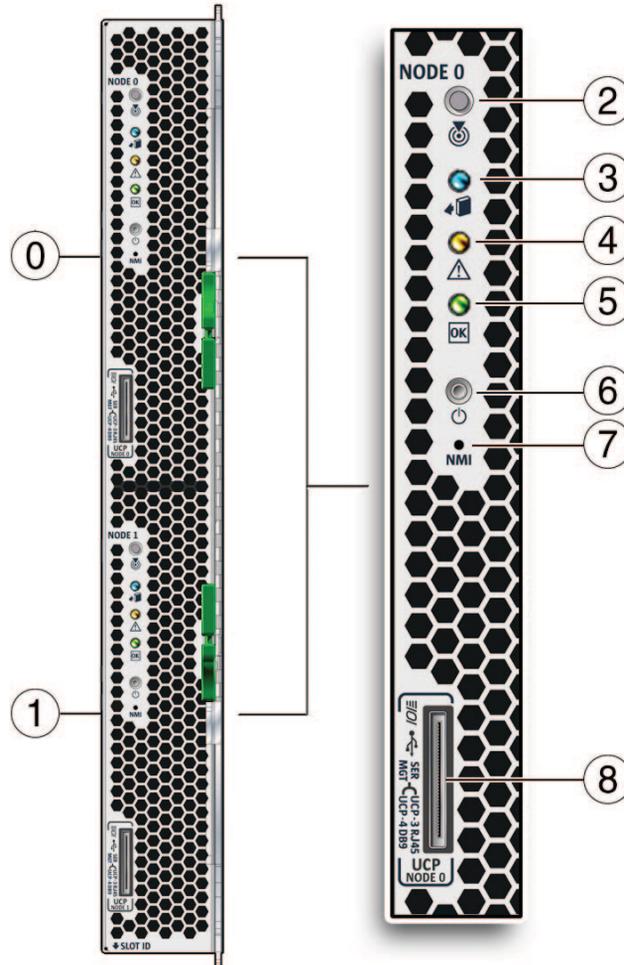


Figure Legend

0	Node 0	1	Node 1
2	Locate LED-White	3	Ready to Remove LED-Blue
4	Service Action Required LED-Amber	5	Power OK LED-Green
6	Power button	7	Non-Maskable Interrupt (NMI) button (Service only)
8	Universal Connector Port (UCP)		



# Power and Reset

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This section contains information about power modes and procedures for powering on and off the server module:

- [“Power Modes” on page 19](#)
- [“Power Button and Power OK LED” on page 20](#)
- [“Powering On and Off the Server Module” on page 22](#)

## Power Modes

The Sun Blade X6275 M2 Server module has two power modes, *full power mode* and *standby power mode*.

Full power mode is the normal operational mode for the server. When the server enters full power mode, power is supplied to all the server components, the server boots, and the operating system (OS) functions. You achieve full power mode by pressing the Power button on the front of the server when the server is in standby power mode. Once the server is operating in full power mode the Power OK LED is on continuously (does *not* blink).

Standby power mode is the non-operating mode. That is, the server is in a low-power or powered-down state and is not capable of booting and starting the OS. In standby power mode, minimum power is supplied only to the components that are required for lights-out management. You achieve standby power by connecting the server to an AC supply. In standby power mode, power is supplied to the service processor (SP), which allows the SP to boot. To sustain standby power mode, you must *not* press the front panel Power button. You can also achieve standby power mode by powering off the server (from an operational mode) using one of the power-off methods. When the server is in standby power mode, the Power OK LED on the front panel blinks.

*See also:*

- [“Power Button and Power OK LED” on page 20](#)
- [“How to Power the Server Module to Standby Power Mode” on page 22](#)
- [“How to Power On the Server Module to Full Power Mode” on page 23](#)
- [“LED Functions” on page 68](#)

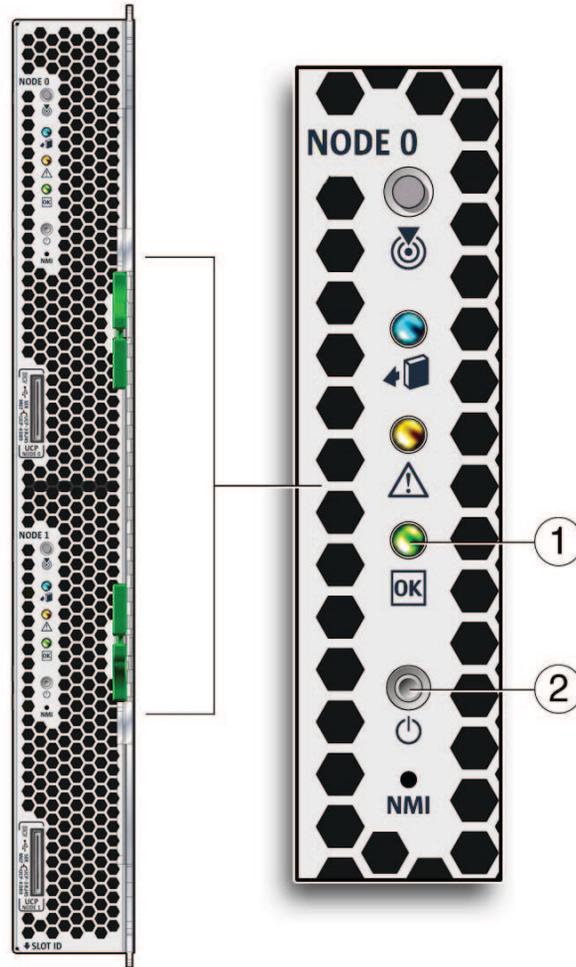
## Power Button and Power OK LED

The Sun Blade X6275 M2 Server Module has two nodes. Each node has its own indicator panel on the front of the server module. The indicator panel shows the status of the node and can be used to power on and off the nodes. The state of the Power/OK LED indicates the power mode. The power button is used to power on the server module from standby mode to full power mode and to power off the server from full power mode to standby power mode.

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**Note** – To remove power from the server module, you must disconnect the server module from the chassis mid-plane.

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**Legend**


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1	Power/OK LED	2	Power button
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*See also:*

- “Power Modes” on page 19
- “LED Functions” on page 68
- “How to Power the Server Module to Standby Power Mode” on page 22
- “How to Power On the Server Module to Full Power Mode” on page 23

## Powering On and Off the Server Module

The section contains the following procedures for powering on and powering off the server module:

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**Note** – The procedures in this section assume that you are working locally, at the server module. For information about powering the server remotely, refer to the ILOM documentation included online with the server module's documentation collection.

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- [“How to Power the Server Module to Standby Power Mode” on page 22](#)
- [“How to Power On the Server Module to Full Power Mode” on page 23](#)
- [“How to Power Off the Server Module” on page 23](#)

### ▼ How to Power the Server Module to Standby Power Mode

Use this procedure to place the server in to the non-operational standby power mode.

---

**Note** – The Sun Blade X6275 M2 Server module is a dual-node server. If necessary, use this procedure for *both* nodes.

---

#### Before You Begin

- This task assumes that you are at the server module working locally.
- See [“Power Modes” on page 19](#).
- See [“Power Button and Power OK LED” on page 20](#).

#### ● To place the server module in standby power mode, do one of the following:

- If the server module is in a full power mode state, power off the server module. See [“How to Power Off the Server Module” on page 23](#).

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**Note** – Powering off the server module from full power mode places the server module in standby power mode.

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- If the server module has been removed from the chassis, ensure that the chassis is powered on and install the server module into its slot in the chassis. See [“How to Install the Server Module in the Chassis” on page 35](#).

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**Note** – Do *not* press the front panel Power button. The server automatically enters standby power mode when inserted into a powered-on chassis. Pressing the Power button puts the server in full power mode and boots the system.

---

- See Also**
- [“How to Power On the Server Module to Full Power Mode” on page 23](#)
  - [“LED Functions” on page 68](#)

## ▼ How to Power On the Server Module to Full Power Mode

Use this procedure to place the server in to the operational full power mode.

---

**Note** – The Sun Blade X6275 M2 Server module is a dual-node server. If necessary, use this procedure for *both* nodes.

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- Before You Begin**
- This task assumes that the chassis is powered on.
  - This task assumes that you are at the server module working locally.
  - See [“Power Modes” on page 19](#).
  - See [“Power Button and Power OK LED” on page 20](#).
- 1 Install the server module in the Sun Blade chassis. See [“How to Install the Server Module in the Chassis” on page 35](#).**

The green OK LED on the front panel of the server module blinks (once every three seconds), indicating that the server module is in standby power mode.
  - 2 To power on the server module, use a pen, or other nonconducting pointed object, to quickly press and release the Power button on the server module front panel.**

When the main power is applied to the server module, the green OK LED remains lit (does not blink), indicating that the server is in full power mode.

- See Also**
- [“How to Power Off the Server Module” on page 23](#)
  - [“LED Functions” on page 68](#)

## ▼ How to Power Off the Server Module

Use this procedure to power off the server module with the front panel Power button. You can power off the server module gracefully or immediately.

---

**Note** – The Sun Blade X6275 M2 Server module is a dual-node server. If necessary, use this procedure for *both* nodes.

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**Before You Begin**

- This task assumes that you are at the server module working locally.
- See [“Power Modes” on page 19](#).
- See [“Power Button and Power OK LED” on page 20](#).

● **To power off the server using the Power button, do one of the following:**

- To perform a graceful shutdown, use a pen, or other nonconducting pointed object, to *quickly* press and release the Power button on the front panel.

When the server powers down, the OK LED on the front panel blinks, indicating that the server module is in standby power mode.

- To perform an immediate shutdown, *press and hold the Power button for at least four seconds* until the main power is off and the server module enters standby power mode.

When the server powers down, the OK LED on the front panel blinks, indicating that the server module is in standby power mode.



**Caution** – Possible data loss and file system corruption. All applications and files close abruptly *without* saving changes.

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- See Also**
- [“How to Power On the Server Module to Full Power Mode” on page 23](#)

# Preparation Procedures for Service and Operation

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This section describes how to prepare the Sun Blade X6275 M2 Server Module for service and operation and includes procedures that prepare you for the safe and efficient maintenance of your server:

- “Preparing the Server for Service” on page 25
- “Preparing the Server for Operation” on page 34

## Preparing the Server for Service

The following basic procedures describe how to safely prepare the server module for service:

- “How to Prepare the Server Module for Service” on page 25
- “CRUs and FRUs” on page 26
- “Required Tools” on page 27
- “Safety Information” on page 27
- “Performing ESD and Antistatic Prevention Measures” on page 28
- “Using the Locate LED to Find the Server Module (Optional)” on page 29
- “How to Remove the Server Module from the Chassis” on page 31
- “How to Remove the Server Module Top Cover” on page 33

### ▼ How to Prepare the Server Module for Service

This procedure contains the steps required to safely remove the server module from the chassis.

- 1 Review the *Sun Blade X6275 M2 Server Module Product Notes* for important up-to-date information about the server module.
- 2 Review the list of CRUs (customer-replaceable units) and FRUs (field-replaceable units). See “CRUs and FRUs” on page 26.
- 3 Review the removal and install procedures to determine if the serviceability of the task requires an Oracle Service person. See “Component Removal and Installation Procedures” on page 37.
- 4 Review the list of the tools required for service. See “Required Tools” on page 27.

- 5 Review the important safety information. See [“Safety Information” on page 27.](#)
- 6 Review the ESD procedures. See [“Performing ESD and Antistatic Prevention Measures” on page 28.](#)
- 7 If necessary, activate the server module Locate LED. See [“Using the Locate LED to Find the Server Module \(Optional\)” on page 29.](#)
- 8 Power off the server module. See [“How to Power Off the Server Module” on page 23.](#)
- 9 Remove the server module from the chassis. See [“How to Remove the Server Module from the Chassis” on page 31.](#)
- 10 Set the server module on a flat surface with ample space and light.
- 11 Remove the server module top cover. See [“How to Remove the Server Module Top Cover” on page 33.](#)
- 12 Use an antistatic brush, canned air, or a vacuum to remove dust from the server module components and air vents.




---

**Caution** – Possible component damage. Do *not* use liquids or spray cleaners to clean the interior of the server. The use of liquids or spray cleaners within the interior of the server, the chassis, and the rack can cause component damage.

---

**Next Steps** [“Component Removal and Installation Procedures” on page 37](#)

## CRUs and FRUs

The replaceable components in your Sun Blade X6275 M2 Server module are designated as either field-replaceable units (FRU) or customer-replaceable units (CRU). A part designated as a FRU must be replaced by an Oracle-qualified service technician. A part designated as a CRU can be replaced by a person who is not an Oracle-qualified service technician. The following table lists the FRU and CRU components.

Component Description	Designation
DIMMs	CRU
Flash module (FMod)	CRU
CPU and heatsink assembly	FRU
Energy storage modules	FRU

Component Description	Designation
Motherboard and enclosure assembly	FRU
Service processor (SP) board	FRU

## Required Tools

The Sun Blade X6275 M2 Server Module can be serviced with the following tools:

- Antistatic wrist strap
- Antistatic mat
- Number 2 Phillips screwdriver
- (Optional) a torque tool capable of registering 8 inch-lbs
- Nonconducting stylus or pencil (to power on server)
- Antistatic brush, canned air, or vacuum

## Safety Information

This section describes important safety information that you need to know prior to removing or installing parts in the Sun Blade X6275 M2 Server Module.



**Caution** – Never attempt to run the server module with the cover removed. Hazardous voltage present.



**Caution** – Equipment damage possible. The server module cover must be in place for proper air flow.

For your protection, observe the following safety precautions when setting up your equipment:

- Follow all Oracle and Sun Service cautions, warnings, and instructions marked on the equipment and described in *Important Safety Information for Sun Hardware Systems*.
- Follow all cautions, warnings, and instructions marked on the equipment and described in the *Sun Blade X6275 M2 Server Module Safety and Compliance Guide*.
- Ensure that the voltage and frequency of your power source match the voltage and frequency inscribed on the equipment's electrical rating label.
- Follow the electrostatic discharge safety practices.

## Performing ESD and Antistatic Prevention Measures

---



**Caution** – Circuit boards and drives contain electronic components that are extremely sensitive to static electricity. Ordinary amounts of static electricity from clothing or the work environment can destroy the components located on these boards. As a minimum precaution, do *not* touch the component's connector edges.

---

The section contains important electrostatic discharge and antistatic information and procedures:

- “Using an Antistatic Wrist Strap” on page 28
- “Using an Antistatic Mat” on page 28
- “How to Setup for ESD prevention” on page 28

### Using an Antistatic Wrist Strap

Wear an antistatic wrist strap and use an antistatic mat when handling components such as hard drive assemblies, circuit boards (including DIMMs), or PCI cards. When servicing or removing server components, attach an antistatic strap to your wrist and then to a metal area on the chassis. Following this practice equalizes the electrical potentials between you and the server.

---

**Note** – An antistatic wrist strap is not included in the accessory kit for the Sun Blade X6275 M2 Server Module. However, antistatic wrist straps are included with optional components.

---

### Using an Antistatic Mat

Place ESD-sensitive components such as motherboards, memory, and other PCBs on an antistatic mat.

## ▼ How to Setup for ESD prevention

### 1 Prepare an antistatic surface to set parts on during the removal, installation, or replacement process.

Place ESD-sensitive components such as the printed circuit boards on an antistatic mat. The following items can be used as an antistatic mat:

- Antistatic bag used to wrap a Oracle replacement part
  - Oracle ESD mat, part number 250-1088
  - A disposable ESD mat (shipped with some replacement parts or optional system components)

**2 Attach an antistatic wrist strap.**

When servicing or removing server module components, attach an antistatic strap to your wrist and then to a metal area on the chassis.

## Using the Locate LED to Find the Server Module (Optional)

The Locate LED is a user-activated LED on the front of the server module. You can use it to help you find a specific server module within a chassis. You can turn on and off the Locate LED using the ILOM CLI or the ILOM web interface:

- “How to Use the ILOM Web Interface to Turn On and Off the Locate LED” on page 29
- “How to Use the ILOM CLI to Turn On and Off the Locate LED” on page 31

### ▼ How to Use the ILOM Web Interface to Turn On and Off the Locate LED

**Before You Begin** For ILOM access, refer to the *Oracle Integrated Lights Out Manager (ILOM) 3.0 Supplement for the Sun Blade X6275 M2 Server Module*.

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

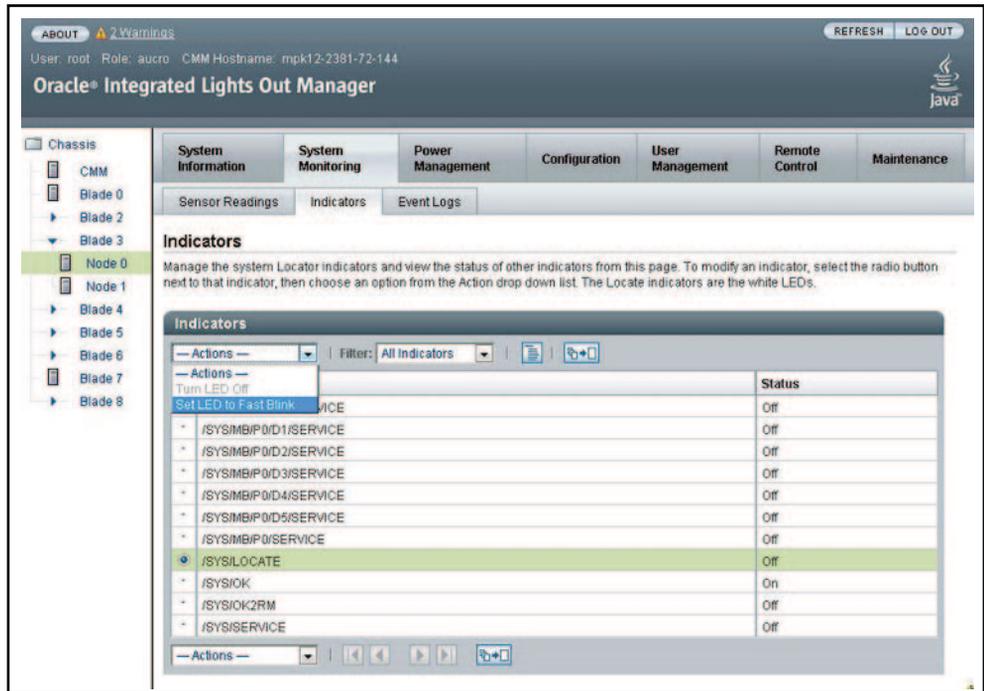
The ILOM Home screen and submenu tabs appear.

**2 Select the blade and the node.**

The ILOM tabs appear.

### 3 Click the System Monitoring tab.

The System Monitoring submenus tabs appear.



### 4 Click the Indicators tab.

### 5 Select the radio button next to /SYS/LOCATE.

### 6 Do one of the following:

- To turn on the Locate LED, use the Actions drop-down list to select Set LED to Fast Blink.
- To turn off the Locate LED, use the Actions drop-down list to select Turn LED Off.

A pop-up confirmation window appears.

### 7 Click OK.

The Status field for the Locate LED changes to reflect the status of the LED.

**See Also** [“How to Use the ILOM CLI to Turn On and Off the Locate LED” on page 31](#)

## ▼ How to Use the ILOM CLI to Turn On and Off the Locate LED

**Before You Begin** For ILOM access, refer to the *Oracle Integrated Lights Out Manager (ILOM) 3.0 Supplement for the Sun Blade X6275 M2 Server Module*.

### 1 Log in to the ILOM CLI.

The CLI prompt appears:

```
->
```

### 2 Do one of the following:

- To *turn on* the Locate LED, enter the following command:  
-> `set /CH/LOCATE value=Fast_Blink`
- To *turn off* the Locate LED, enter the following command at the CLI prompt:  
`set /CH/LOCATE value=Off`

### 3 To verify the status of the Locate LED, enter the following command at the CLI prompt:

```
-> show /CH/LOCATE
```

The output of the command appears.

```
-> show /CH/LOCATE
/CH/LOCATE
  Targets:

  Properties:
    type = Indicator
    ipmi_name = LOCATE
    value = Fast Blink

  Commands:
    cd
    set
    show
```

The value property shows the status as either Fast Blink or Off.

**See Also** [“How to Use the ILOM Web Interface to Turn On and Off the Locate LED” on page 29](#)

## ▼ How to Remove the Server Module from the Chassis

Use this procedure to safely remove the server module from the chassis.



**Caution** – Do not install a server module into the chassis until at least 20 seconds has elapsed since the server module was disengaged from the chassis mid-plane connector.

**Before You Begin** See “[Preparing the Server for Service](#)” on page 25.

- 1 **Power off both server module compute nodes or place them in standby power mode.** See “[How to Power Off the Server Module](#)” on page 23.

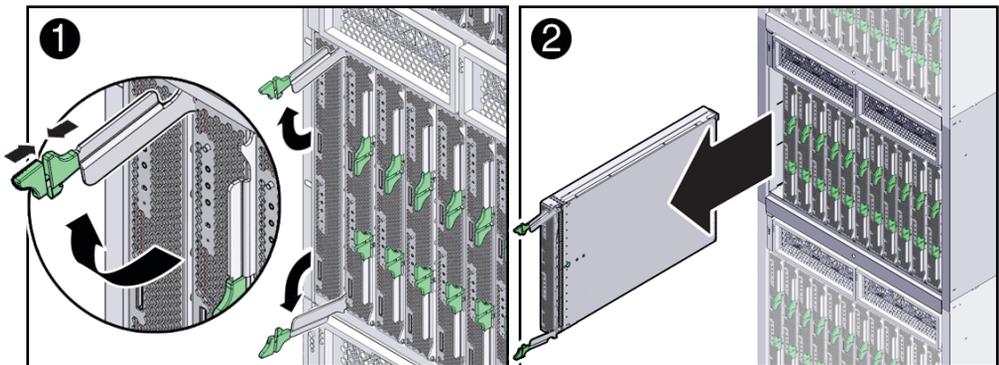
For information about power modes, see “[Power Modes](#)” on page 19.

- 2 **Squeeze and hold green ejector buttons.**
- 3 **To unseat the server module, rotate both ejector arms away from the server module at the same time until fully extended.**



**Caution** – Possible component damage or personal injury. Do *not* attempt to remove the server module using only the ejector levers.

- 4 **To *partially* remove the server module from the chassis, pull out the server module by the ejector levers until you can grasp the server module with both hands (approximately 5–6 inches).**



- 5 **To completely remove the server module, use your hands to slowly pull the server module out of the chassis.**
- 6 **If the chassis is powered on, insert a server module filler panel into the empty slot.** See “[How to Install the Server Module Filler Panel](#)” on page 128.



**Caution** – Possible system and component over-temperature warnings, shutdown, and heat-related damage. Do *not* operate the system with empty slots. Always insert a server module filler panel into an empty slot within 60 seconds to reduce the possibility of server module shutdown.

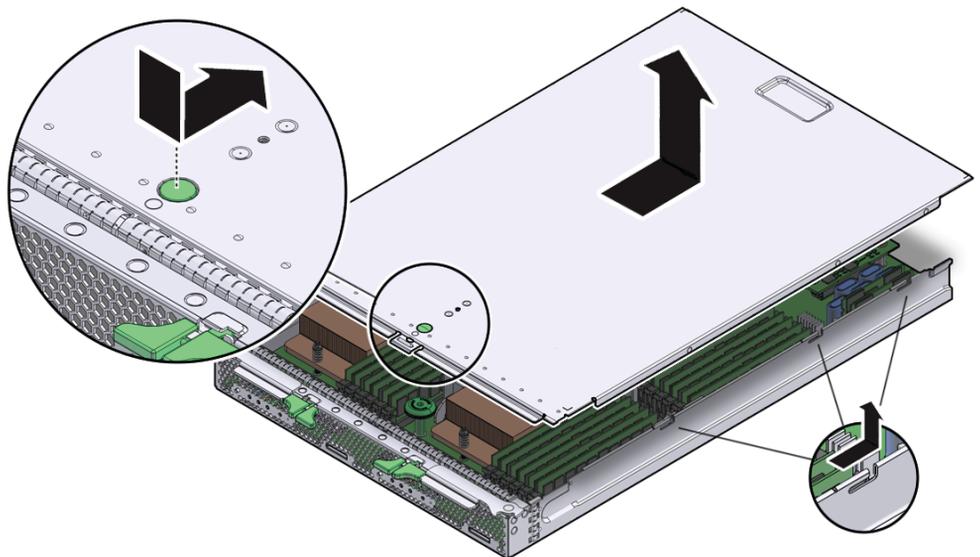
- 7 Set the server module on an antistatic mat in a location with ample space and light.

**Next Steps** “How to Remove the Server Module Top Cover” on page 33

## ▼ How to Remove the Server Module Top Cover

**Before You Begin** See “How to Remove the Server Module from the Chassis” on page 31.

- 1 Remove the server module chassis. See “How to Remove the Server Module from the Chassis” on page 31.
- 2 Press down on the server module cover release button and, using the indent for leverage, slide the main cover toward the rear of the server module chassis approximately 0.5 inch (12 mm).
- 3 Lift the cover straight up from the server module chassis.



**Next Steps** “Component Removal and Installation Procedures” on page 37

## Preparing the Server for Operation

The following basic procedures describe how to prepare the server module for operation. These procedures are referenced throughout this manual:

- [“How to Prepare the Server Module for Operation” on page 34](#)
- [“How to Install the Server Module Top Cover” on page 34](#)
- [“How to Install the Server Module in the Chassis” on page 35](#)

### ▼ How to Prepare the Server Module for Operation

Use these basic step to prepare the server module for operation.

- 1 **Ensure that all installed components are secure.**
- 2 **Account for all mounting hardware.**
- 3 **Remove any tools or debris from the interior of the server module, the chassis, and the rack.**
- 4 **Use an antistatic brush or canned air to remove dust from the interior of the server module and the vent areas.**



**Caution** – Possible component damage. Do *not* use liquids or spray cleaners to clean the interior of the server. The use of liquids or spray cleaners within the interior of the server, the chassis, and the rack can cause component damage.

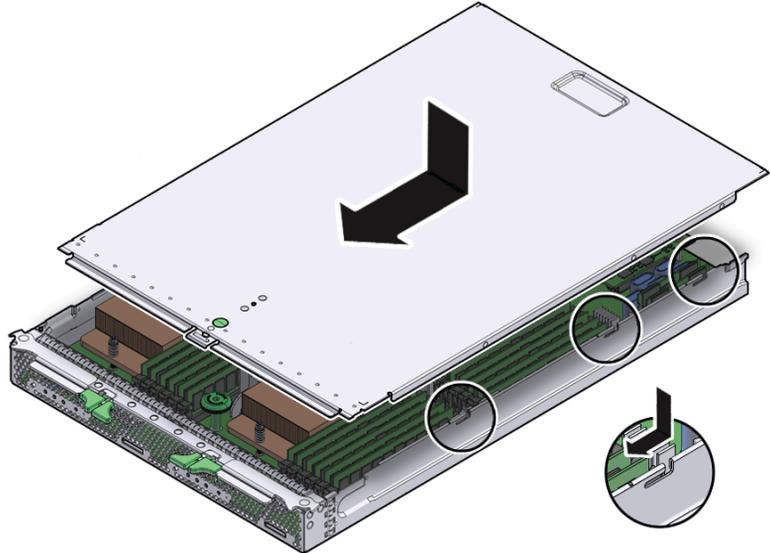
---

- 5 **Install the server module top cover.** See [“How to Install the Server Module Top Cover” on page 34.](#)
- 6 **Install the server module in the chassis.** See [“How to Install the Server Module in the Chassis” on page 35.](#)
- 7 **Power on the server module.** See [“How to Power On the Server Module to Full Power Mode” on page 23.](#)

### ▼ How to Install the Server Module Top Cover

- 1 **Orient the server module cover over the server module with the green release button toward the front.**
- 2 **Set the server module cover on top of the server module allowing approximately 0.5 inch (12 mm) of the cover to overhang the rear of the server module.**

- 3 Slide the main cover toward the front of the server module until the cover locks into place.



**Next Steps** [“How to Install the Server Module in the Chassis” on page 35](#)

## ▼ How to Install the Server Module in the Chassis

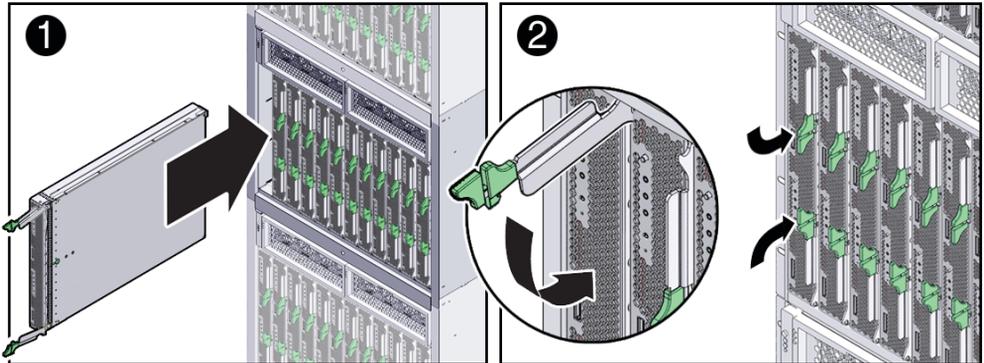
- 1 Locate the slot in the chassis.
- 2 If necessary, remove the server module filler panel. See [“How to Remove a Server Module Filler Panel” on page 127](#).  
Do not discard the server module filler panel.



**Caution** – Do not operate the chassis with empty slots. Always insert a server module filler panel into an empty slot within 60 seconds to reduce the possibility of server module shutdown due to overheating.

- 3 Position the server module vertically so that the ejectors are on the right.

- 4 Push the server module into the slot until the server module stops.



- 5 Ensure that the pawls on the end of the ejector levers are aligned with the slots in the chassis sidewalls
- 6 Rotate the ejector levers inward toward the center of the server module until they lock into place.

If the chassis is powered on, the server module comes up to standby power. The green OK LED on the front panel blinks.

# Component Removal and Installation Procedures

---

This section contains information about how to safely and efficiently remove and install components in the Sun Blade X6275 M2 Server Module.

---

**Note** – Some of the procedures in this section are for customer-replaceable units (CRUs) and some are for field-replaceable units (FRUs), as noted in the procedures. FRU components should be replaced *only* by an Oracle Service technician. Contact your Oracle Service representative for assistance with FRU replacements.

---

- “Replacing the System Battery” on page 37
- “Removing and Installing DIMMs” on page 39
- “Removing and Installing Flash Modules” on page 46
- “Removing and Installing the Energy Storage Modules” on page 50
- “Removing and Installing the Service Processor Board” on page 53
- “Removing and Installing USB Flash Drives” on page 55
- “Removing and Installing a CPU and Heatsink Assembly” on page 58
- “How to Replace the Motherboard Assembly” on page 65

## Replacing the System Battery

The system battery maintains the BIOS settings and the real-time clock. Each node has its own system battery.

---

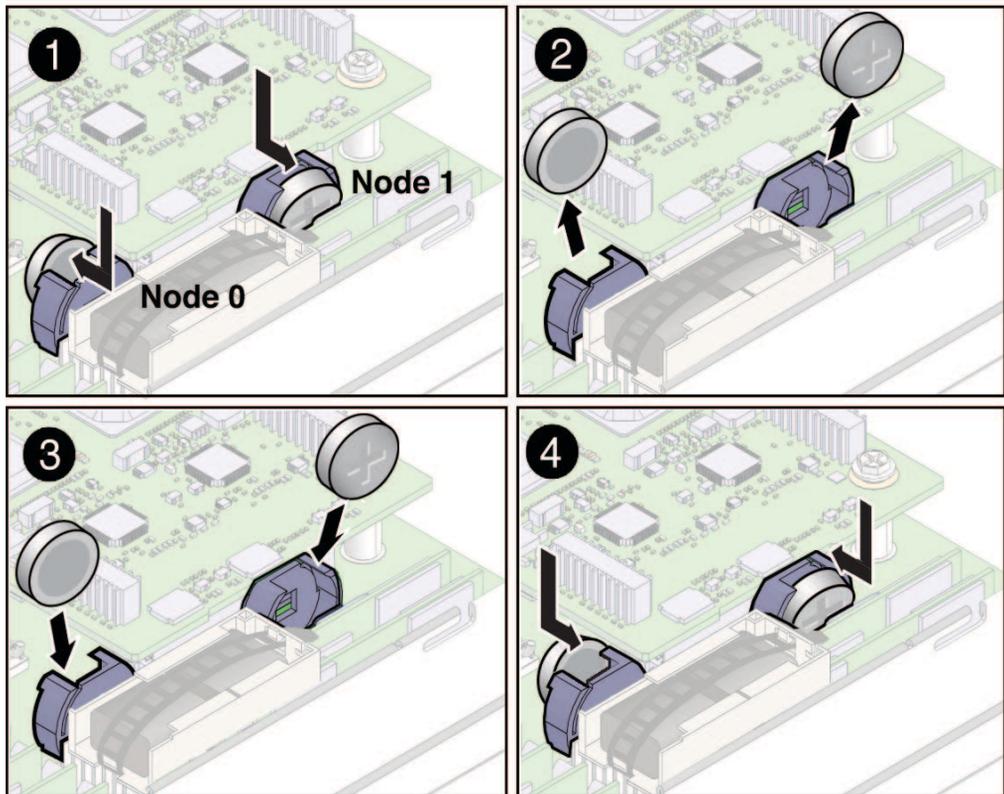
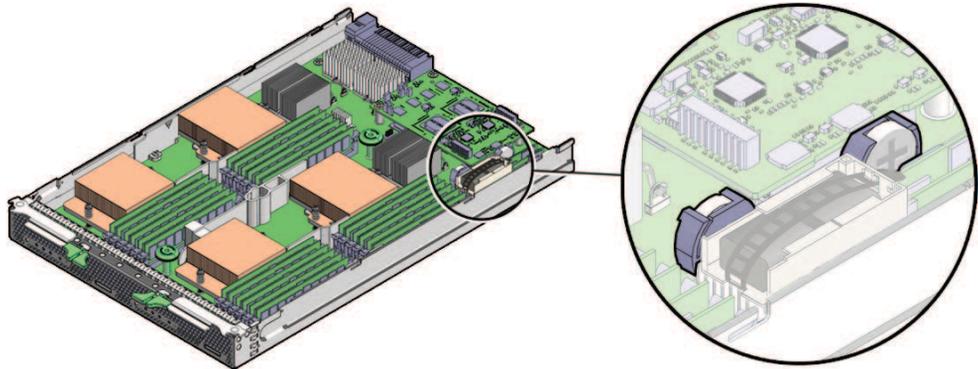
**Note** – This component is a customer-replaceable unit (CRU).

---

Use the following when replacing the system battery:

- “Battery Replacement Illustration” on page 37
- “How to Replace the System Battery” on page 38

## Battery Replacement Illustration



## ▼ How to Replace the System Battery

Two real-time clock (RTC) system batteries (type CR2032), one per compute node, are located on the motherboard.

---

**Note** – The Sun Blade X6275 M2 Server module is a dual-node server. If necessary, use this procedure for *both* nodes.

---

- 1 **Prepare the server module for service.** See [“How to Prepare the Server Module for Service” on page 25.](#)
- 2 **Remove the service processor (SP) board.** See [“How to Remove the Service Processor Board” on page 53.](#)
- 3 **To dislodge the battery from its holder, gently push the top edge of the battery away from the battery holder.**  
See frame [1] in [“Battery Replacement Illustration” on page 37.](#)
- 4 **Remove the battery.**  
See frame [2] in [“Battery Replacement Illustration” on page 37.](#)
- 5 **Orient the new battery so that the '+' symbol faces away from the battery holder.**
- 6 **To install the battery, insert it into the holder and press it into position.**  
See frames [3] and [4] in [“Battery Replacement Illustration” on page 37.](#)
- 7 **Install the SP board.** See [“How to Install the Service Processor Board” on page 54.](#)
- 8 **Clear the CMOS NVRAM.** See [“Clearing CMOS NVRAM and Resetting Passwords” on page 79.](#)  
The BIOS settings revert to the default settings.  
See [“Clearing CMOS NVRAM and Resetting Passwords” on page 79.](#)
- 9 **To customize the BIOS settings, access the BIOS Setup Utility and make the necessary changes.** See [“How to Configure the BIOS Using the BIOS Setup Utility” on page 95.](#)
- 10 **Prepare the server module for operation.** See [“Preparing the Server for Operation” on page 34.](#)

## Removing and Installing DIMMs

This section describes how to diagnose and replace faulty DDR3 LV DIMMs.

---

**Note** – This component is a customer-replaceable unit (CRU).

---

Use these topics procedures to remove and install DIMMs:

- “How to Identify Faulty DIMMs” on page 40
- “DIMM Slot Designations and Population Order” on page 42
- “DIMM Population Rules and Guidelines for the Sun Blade X6275 M2 Server module” on page 43
- “How to Remove DIMMs” on page 44
- “How to Install DIMMs” on page 45

## ▼ How to Identify Faulty DIMMs

---

**Note** – The Sun Blade X6275 M2 Server module is a dual-node server. If necessary, use this procedure for *both* nodes.

---

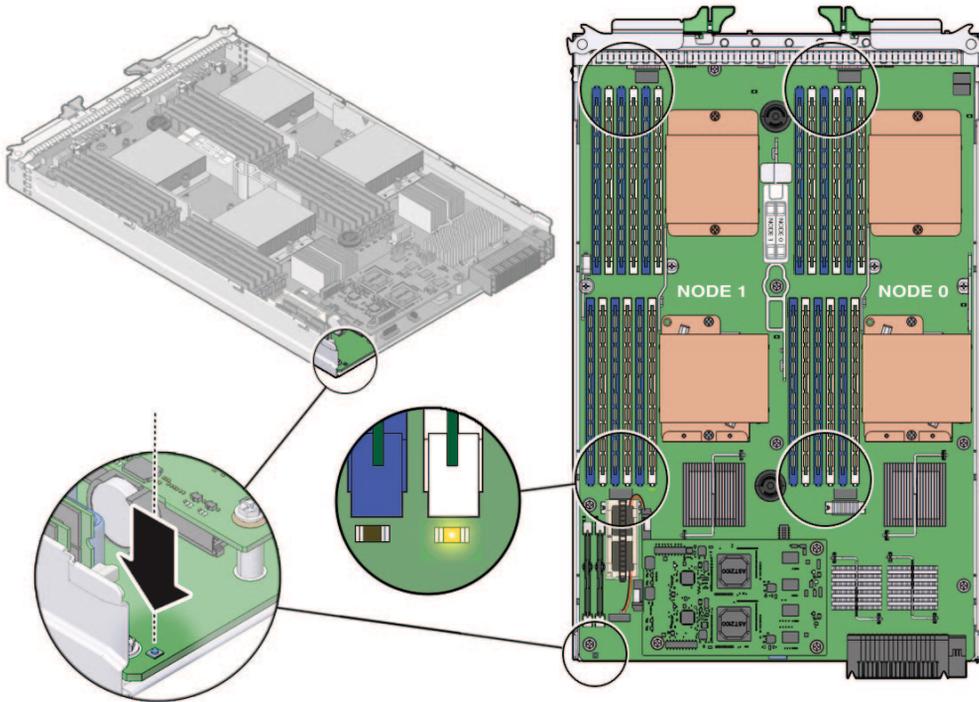
**Before You Begin** For information about using the DIMM test circuit, see “Using the DIMM and CPU On-Board Test Circuitry” on page 77.

- 1 **Prepare the server module for service.** See “Preparing the Server for Service” on page 25.
- 2 **Press and hold the Fault Remind button on the motherboard to identify a faulty DIMM.**

---

**Note** – Do not hold the Fault Remind button down longer than necessary. Release the button when the Fault LED lights.

---



**3 Note the location of the faulty DIMMs on the motherboard.**

A lit LED next to a DIMM slot indicates a faulty DIMM.

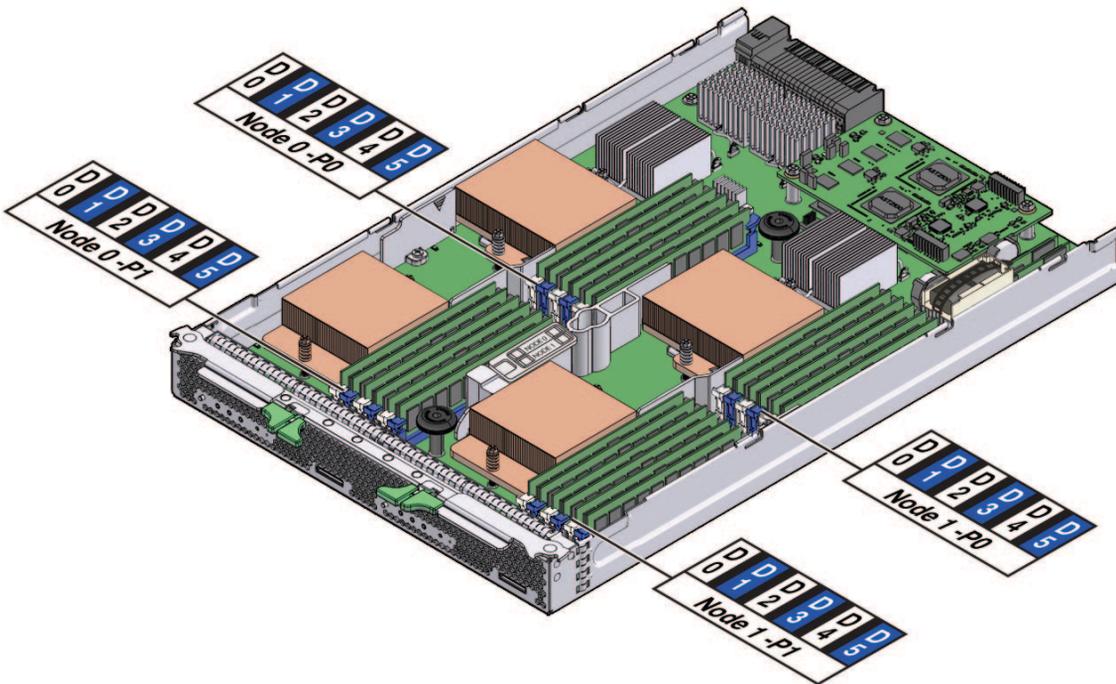
LED	DIMM Status
Off	Operating properly.
On (amber)	Faulty and should be replaced.

**Next Steps** [“How to Remove DIMMs” on page 44](#)

- See Also**
- [“DIMM Slot Designations and Population Order” on page 42](#)
  - [“DIMM Population Rules and Guidelines for the Sun Blade X6275 M2 Server module” on page 43](#)

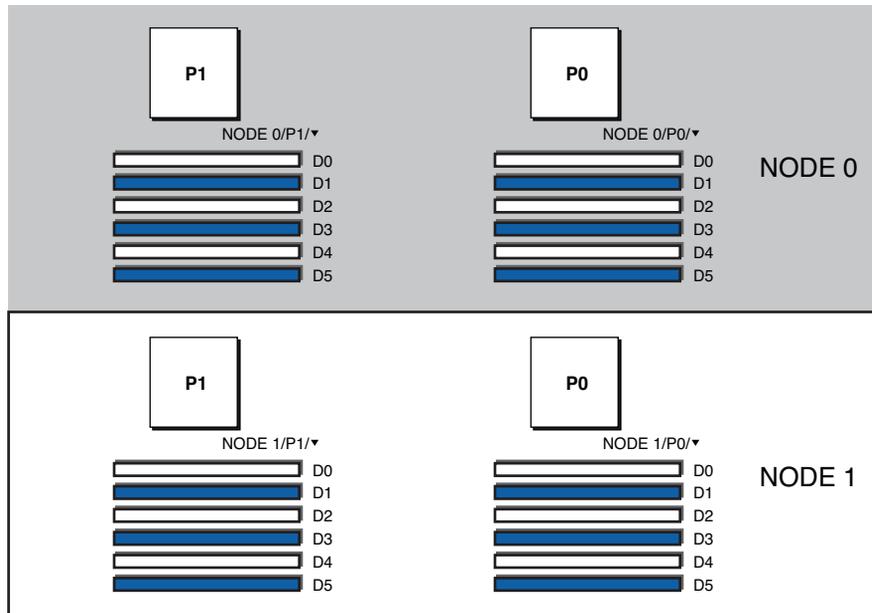
## DIMM Slot Designations and Population Order

The illustrations in this section show the DIMM slots and the slot population order. The following illustration shows the motherboard, the nodes, and the DIMM slot numbering and locations within the server module enclosure.



The following illustration shows the DIMM slot designations and population order. Populate the blue set of slots first and then populate the white set of slots. When populating DIMM slots, follow the population rules and guidelines (see “[DIMM Population Rules and Guidelines for the Sun Blade X6275 M2 Server module](#)” on page 43).

- D5/D3/D1 first set to be populated
- D4/D2/D0 2nd set



## DIMM Population Rules and Guidelines for the Sun Blade X6275 M2 Server module

- Only symmetric memory configurations resulting in 12 DIMMs per blade or 24 DIMMs per blade are supported. Supported configurations:
  - Three DIMMs per CPU
  - Six DIMMs per CPU

---

**Note** – Memory bandwidth (speed) drops to 1066 MHz when the DIMM slots are fully populated (even when using 1333 MHz DIMMs).

---

- Both CPUs on each node must be populated identically and must have exactly the same memory configuration.
- DIMM slot population order:
  - First set to populate: D5/D3/D1
  - Second set to populate: D4/D2/D0
- Do not populate any DIMM socket next to an empty processor socket.

## ▼ How to Remove DIMMs

---

**Note** – This component is a customer-replaceable unit (CRU).

---

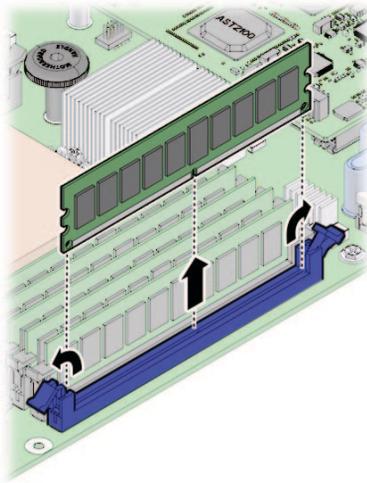
---

**Note** – The Sun Blade X6275 M2 Server module is a dual-node server. If necessary, use this procedure for *both* nodes.

---

**Before You Begin** See “How to Identify Faulty DIMMs” on page 40.

- 1 **Prepare the server module for service.** See “Preparing the Server for Service” on page 25.
- 2 **Rotate both DIMM slot ejectors outward as far as they will go.**  
This action partially ejects the DIMM from the slot.
- 3 **Carefully lift the DIMM straight up to remove it from the slot.**



- 4 **Prepare the server module for operation.** See “How to Prepare the Server Module for Operation” on page 34.

**See Also** “How to Install DIMMs” on page 45

## ▼ How to Install DIMMs

---

**Note** – This component is a customer-replaceable unit (CRU).

---

Always replace a DIMM with the same Oracle part number as the failed DIMM.

---

**Note** – The Sun Blade X6275 M2 Server module is a dual-node server. If necessary, use this procedure for *both* nodes.

---

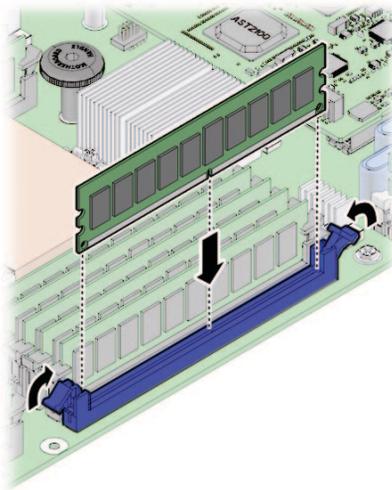
- Before You Begin**
- “How to Remove DIMMs” on page 44.
  - “DIMM Slot Designations and Population Order” on page 42
  - “DIMM Population Rules and Guidelines for the Sun Blade X6275 M2 Server module” on page 43

- 1 Prepare the server module for service. See “How to Prepare the Server Module for Service” on page 25.

- 2 Ensure that the ejector tabs are in the open position.

- 3 Line up the replacement DIMM with the connector.

Align the DIMM notch with the key in the connector. This ensures that the DIMM is oriented correctly.



- 4 Push the DIMM into the slot until the ejector tabs lift and lock the DIMM in place.



---

**Caution** – If the DIMM does not easily seat into the connector, verify correct orientation. If the orientation is reversed, damage to the DIMM or DIMM slot might occur.

---

- 5 Repeat Step 2 through Step 4 until all replacement DIMMs are installed.
- 6 Prepare the server module for operation. See [“Preparing the Server for Operation” on page 34](#).
- 7 Verify DIMM component information.  
Use the ILOM web interface or CLI. Refer to the corresponding ILOM documentation.

## Removing and Installing Flash Modules

---

**Note** – This component is a customer-replaceable unit (CRU).

---

Two Flash Module (FMod) slots are located on the server module motherboard. FMod power is supplied by the charge stored on the energy storage modules (ESMs). When the server is removed from the power source (the chassis), the ESMs slowly lose their charge.

A Charge Status LED on the motherboard indicates the status of the charge. When the LED is off, the ESMs are not charged. When the LED is on, the ESMs are charged. It is not safe to remove or install the FMods when the ESMs have a charge. Wait until the Charge Status LED is off.



---

**Caution** – Component damage can occur if the FMods are removed or installed when the Charge Status LED is lit. Wait for the LED to turn off before removing or installing FMods.

---

Use these procedures to remove and install FMods:

- [“How to Remove Flash Modules” on page 46](#)
- [“How to Install Flash Modules” on page 48](#)

### ▼ How to Remove Flash Modules

---

**Note** – This component is a customer-replaceable unit (CRU).

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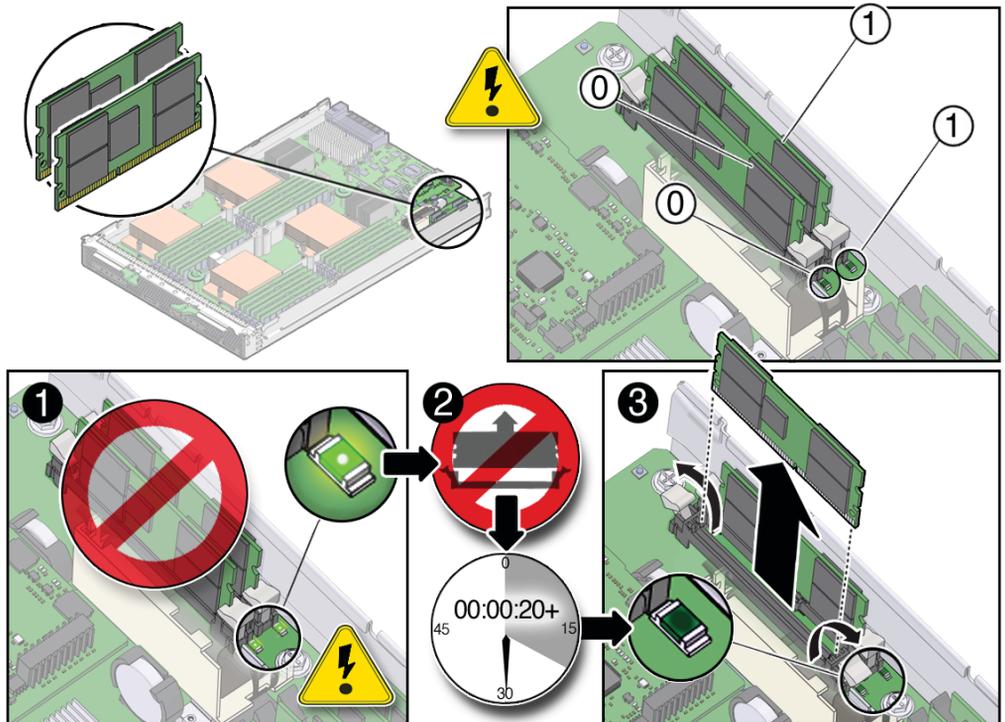
**Caution** – Component damage can occur if the FMods are removed or installed when the Charge Status LED is lit. Wait for the LED to turn off before removing or installing FMods.

**Note** – The Sun Blade X6275 M2 Server module is a dual-node server. If necessary, use this procedure for *both* nodes.

**Before You Begin** See “[Illustrated Parts Breakdown](#)” on page 15 for the location of the flash modules.

- 1 If necessary, back up any data that is contained on the Flash Module (FMod).
- 2 Prepare the server module for service. See “[Preparing the Server for Service](#)” on page 25.
- 3 Locate the FMod slot on the motherboard.

A lit green LED next to an FMod slot indicates that the FMod slot is powered on by the energy storage module (ESM). It does *not* indicate a faulty FMod. The ESM must drain before you can remove the FMod. Wait until the green FMod LED is off *before* removing or installing an FMod.



- 4 **Wait for the green FMod LED to turn off (about 20 seconds).**
- 5 **Rotate both FMod slot ejectors outward as far as they will go.**  
This action partially ejects the FMod from the slot.
- 6 **Carefully lift the FMod straight up to remove it from the slot.**  
See frame [3] of the illustration in [Step 3](#).
- 7 **Prepare the server module for operation. See “How to Prepare the Server Module for Operation” on page 34.**

**Next Steps** [“How to Install Flash Modules” on page 48](#)

## ▼ How to Install Flash Modules

---

**Note** – This component is a customer-replaceable unit (CRU).

---

Two Flash Module (FMod) slots are located on the server module motherboard. FMod power is supplied by the charge stored on the energy storage modules (ESMs). When the server is removed from the power source (the chassis), the ESMs slowly lose their charge.

A Charge Status LED on the motherboard indicates the status of the charge. When the LED is off, the ESMs are not charged. When the LED is on, the ESMs are charged. It is not safe to remove or install the FMods when the ESMs have a charge. Wait until the Charge Status LED is off.



---

**Caution** – Component damage can occur if the FMods are removed or installed when the Charge Status LED is lit. Wait for the LED to turn off before removing or installing FMods.

---

---

**Note** – The Sun Blade X6275 M2 Server module is a dual-node server. If necessary, use this procedure for *both* nodes.

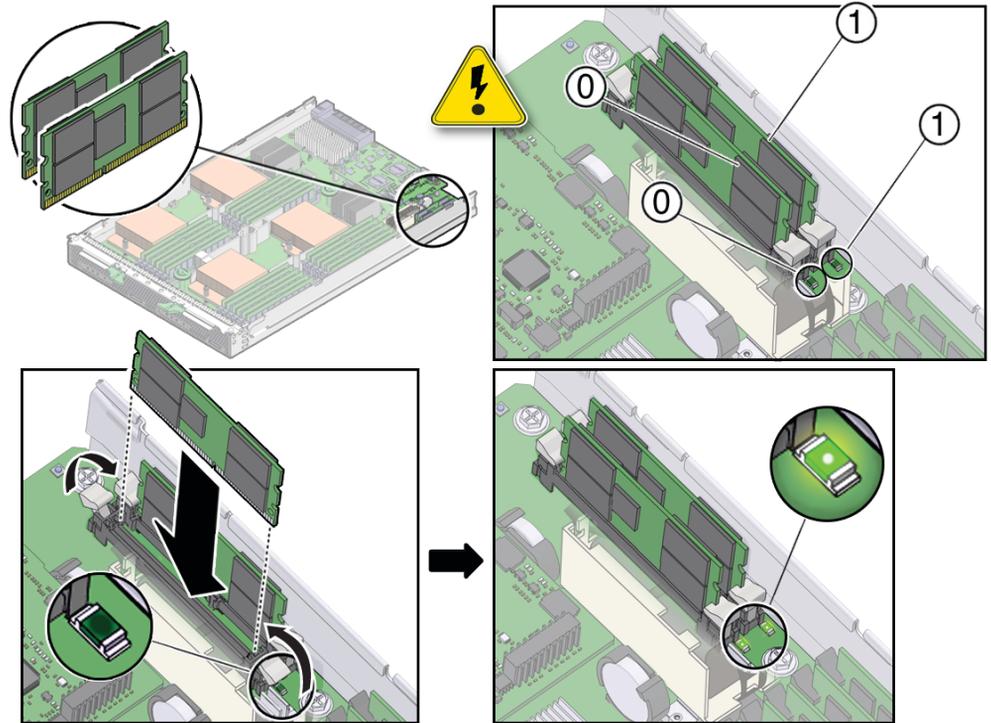
---

**Before You Begin** See [“How to Remove Flash Modules” on page 46](#).

- 1 **Unpack the replacement flash modules and place them on an antistatic mat.**
- 2 **Prepare the server module for service. See “How to Prepare the Server Module for Service” on page 25.**

### 3 Wait for the Power Status LED to turn off.

A lit green LED next to an FMod slot indicates that the FMod slot is powered on by the energy storage module (ESM). It does *not* indicate a faulty FMod. The ESM must drain before you can remove the FMod. Wait until the green FMod LED is off *before* removing or installing FMods.



### 4 Ensure that the ejector tabs are in the open position.

### 5 Line up the flash module with the slot.

Align the FMod notch with the key in the connector. This ensures that the FMod is oriented correctly.

### 6 Push the flash module into the slot until the ejector tabs lock the FMod in place.

If the FMod does not easily seat into the connector, verify that the orientation of the FMod is correct.

### 7 Prepare the server module for operation. See [“Preparing the Server for Operation” on page 34](#).

### 8 Verify flash module component information.

Use the ILOM web interface or CLI. Refer to the corresponding ILOM documentation.

## Removing and Installing the Energy Storage Modules

The energy storage modules (ESMs) supply power to the flash modules (FMods). When power is applied to the server, the voltage causes the ESMs to charge to capacity. The ESMs maintain this charge until the server is removed from the chassis (power source). When the server is removed, the ESMs slowly lose their charge.

A Charge Status LED on the motherboard indicates the status of the charge. When the LED is on, the ESM is charged. When the LED is off, the ESMs are not charged. If the LED is on, it is not safe to remove or install the FMods or the ESMs.

---

**Note** – This component is a customer-replaceable unit (FRU).

---

Use these procedures when removing or installing an energy storage module (ESM):

- “How to Remove the Energy Storage Modules” on page 50
- “How to Install the Energy Storage Modules” on page 51

### ▼ How to Remove the Energy Storage Modules

---

**Note** – This component is a customer-replaceable unit (FRU).

---

---

**Note** – The Sun Blade X6275 M2 Server module is a dual-node server. If necessary, use this procedure for *both* nodes.

---

- Before You Begin**
- See “[Illustrated Parts Breakdown](#)” on page 15 for the location of the ESM modules.
  - See “[Removing and Installing Flash Modules](#)” on page 46.

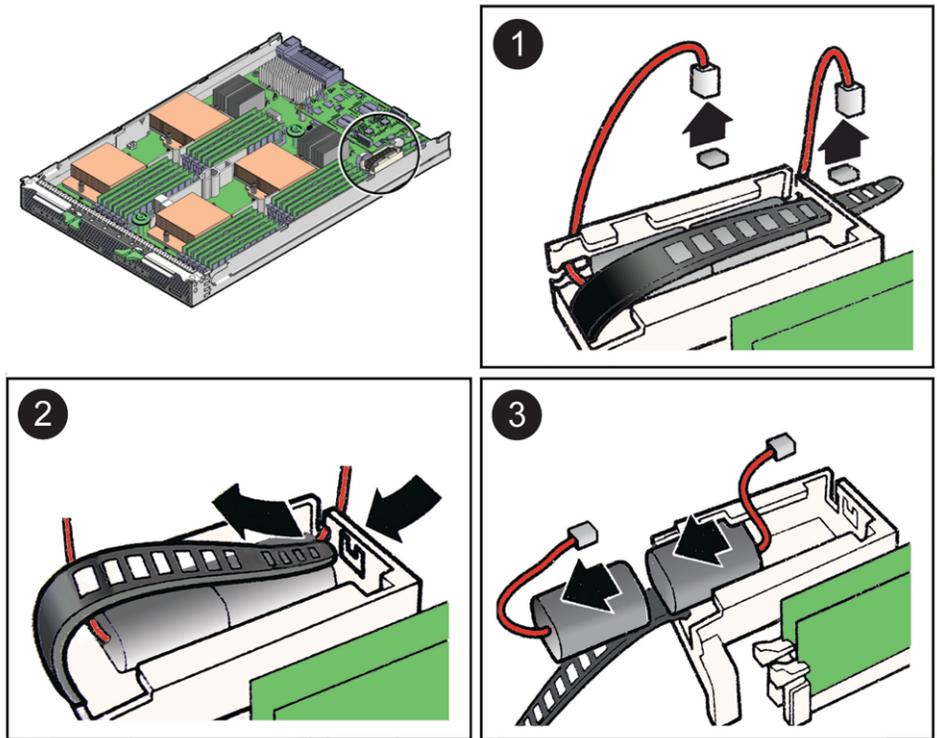
**1 Prepare the server module for service.** See “[Preparing the Server for Service](#)” on page 25.

**2 Remove the SP board.** See “[How to Remove the Service Processor Board](#)” on page 53.

**3 When the green charge status LED is off, disconnect the ESM connectors from the motherboard.**

A lit green LED next to an FMod slot indicates that the FMod slot is powered on by the energy storage module (ESM). It does *not* indicate a faulty FMod. The ESM must drain before you can remove the FMod. Wait about 20 seconds or until the green FMod LED is off *before* removing or installing FMod.

- 4 Unbuckle the ESM retaining strap by pushing the strap back through the buckle.



- 5 Slide out the ESM that is nearest the front of the server module by pulling it through the opening in the holder.  
The holder has an opening on the front-facing side.
- 6 Slide out the rear ESM by pulling it through the opening in the holder.
- 7 Prepare the server module for operation. See [“How to Prepare the Server Module for Operation” on page 34](#).

**Next Steps** [“How to Install the Energy Storage Modules” on page 51](#)

## ▼ How to Install the Energy Storage Modules

---

**Note** – This component is a customer-replaceable unit (FRU).

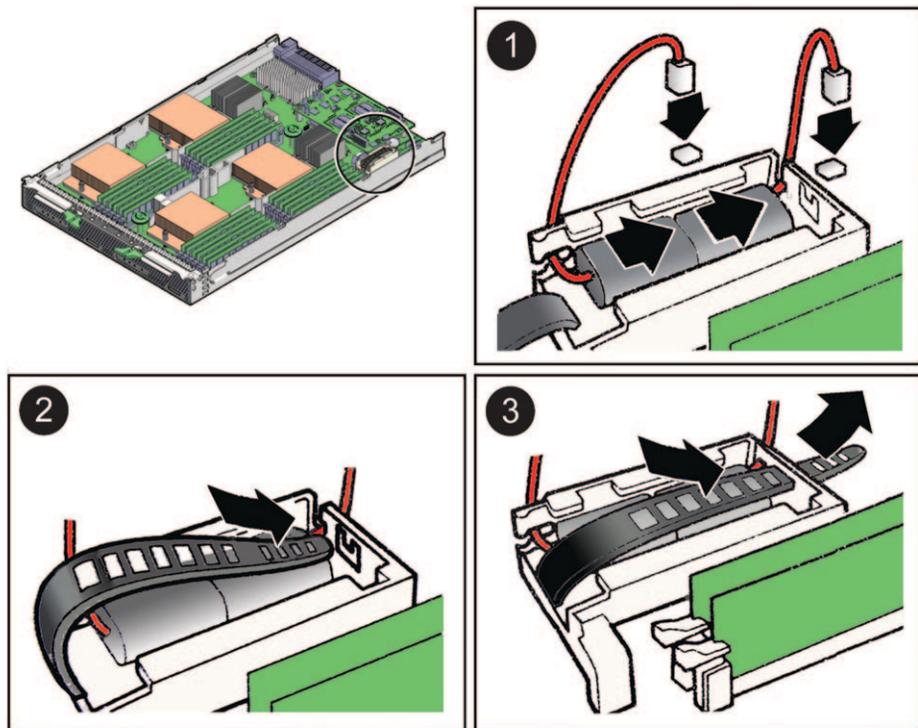
---

**Note** – The Sun Blade X6275 M2 Server module is a dual-node server. If necessary, use this procedure for *both* nodes.

**Before You Begin**

- See “How to Remove the Energy Storage Modules” on page 50.
- See “Removing and Installing Flash Modules” on page 46.

- 1 Prepare the server module for service. See “Preparing the Server for Service” on page 25.
- 2 Position the rear ESM in the empty holder with the cable facing up and toward the rear of the server.



- 3 Slide the ESM into the holder and guide the cable into the cable slot on the back side of the holder.
- 4 Position the front ESM in the empty holder with the cable facing up and toward the front of the server.
- 5 Slide the ESM into the holder and guide the cable into the cable slot on the front of the holder.

- 6 Connect the two cables to the connectors on the motherboard.
- 7 Buckle the retaining strap by guiding the strap through the buckle and pulling it until tight.
- 8 Install the SP board. See [“How to Install the Service Processor Board” on page 54.](#)
- 9 Prepare the server module for operation. See [“How to Prepare the Server Module for Operation” on page 34.](#)

**See Also** [“Removing and Installing Flash Modules” on page 46](#)

## Removing and Installing the Service Processor Board

---

**Note** – This component is a field-replaceable unit (FRU).

---

The service processor (SP) board is mounted on the motherboard and located at the rear of the server.

Use these procedures to remove and install the SP board:

- [“How to Remove the Service Processor Board” on page 53](#)
- [“How to Install the Service Processor Board” on page 54](#)

### ▼ How to Remove the Service Processor Board

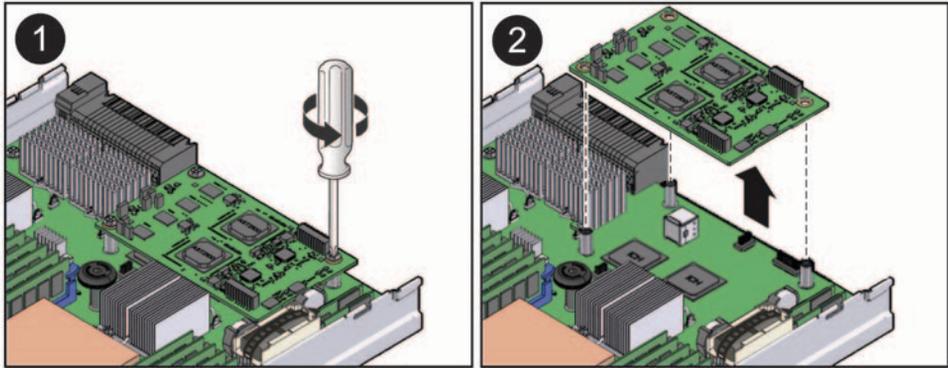
---

**Note** – This component is a customer-replaceable unit (CRU).

---

- Before You Begin**
- If you are replacing an SP board that is not dead, obtain the ILOM version and download the system software release package (combined BIOS/ILOM) that incorporates that version. A system software release package can be downloaded from: <http://support.oracle.com>.
  - If you are replacing a dead SP board, obtain the BIOS version and download the system software release package (combined BIOS/ILOM) that incorporates that version. A system software release package can be downloaded from: <http://support.oracle.com>.
  - For the location of components, see [“Illustrated Parts Breakdown” on page 15.](#)
- 1 Prepare the server module for service. See [“Preparing the Server for Service” on page 25.](#)

- 2 Use a number 2 Phillips screwdriver to remove and retain the three screws securing the SP board to the standoffs on the motherboard.



- 3 Pull the SP board upward to disengage the underside connector.
- 4 Remove the SP board.
- 5 Prepare the server module for operation. See [“How to Prepare the Server Module for Operation” on page 34.](#)

**Next Steps** [“How to Install the Service Processor Board” on page 54](#)

## ▼ How to Install the Service Processor Board

---

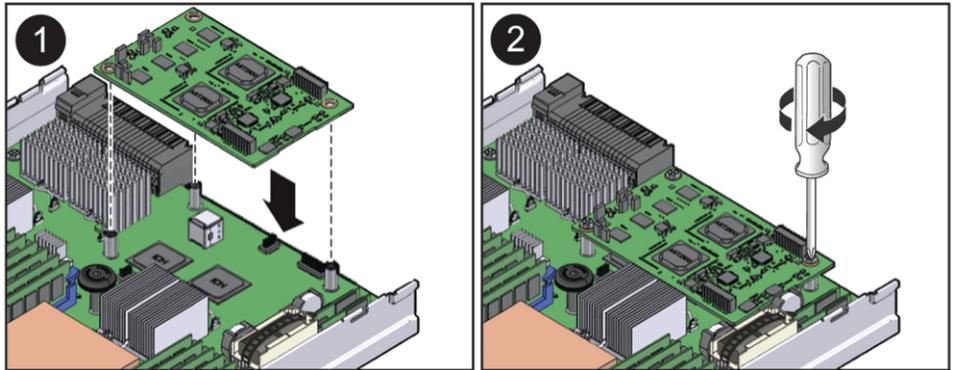
**Note** – This component is a customer-replaceable unit (CRU).

---

- Before You Begin**
- If you are replacing a SP board and have not yet removed the old one, see [“How to Remove the Service Processor Board” on page 53.](#)
  - If you are installing a new SP board, be sure you have the appropriate system software release package as described in the “Before You Begin” section of [“How to Remove the Service Processor Board” on page 53.](#)

- 1 Prepare the server module for service. See [“Preparing the Server for Service” on page 25.](#)

- 2 Position the SP board with the connector facing downward.



- 3 Align the underside connector on the SP board with the connector on the motherboard.  
The three screw holes on the SP board line up with the standoffs on the motherboard when the connectors are aligned.
- 4 Lower the SP board until the two connectors touch and carefully push down on the SP board until the connectors engage one another.
- 5 Use a number 2 Phillips screwdriver to secure the SP board to the standoffs on the motherboard using the three screws.
- 6 Prepare the server module for operation. See [“How to Prepare the Server Module for Operation” on page 34.](#)
- 7 Update the system with the BIOS/ILOM firmware package you downloaded earlier (see the “Before You Begin” information in [“How to Remove the Service Processor Board” on page 53.](#)  
This will ensure that both the BIOS and ILOM firmware (which are packaged and tested together) are at a supported level.

For information about updating firmware, see [Oracle Integrated Lights Out Manager \(ILOM\) 3.0 Supplement for the Sun Blade X6275 M2 Server Module.](#)

## Removing and Installing USB Flash Drives

---

**Note** – This component is a customer-replaceable unit (CRU).

---

Two USB flash drive ports are located on the motherboard at the rear of the server module underneath the SP board. The top USB port is for compute node 0. The bottom USB port is for compute node 1. It is not necessary to remove the SP board to access the USB ports.

Use these procedures to remove and install USB flash drives:

- [“How to Remove USB Flash Drives” on page 56](#)
- [“How to Install USB Flash Drives” on page 57](#)

## ▼ How to Remove USB Flash Drives

---

**Note** – This component is a customer-replaceable unit (CRU).

---

Use this procedure to remove a USB flash drive from the motherboard-mounted USB ports.

---

**Note** – The Sun Blade X6275 M2 Server module is a dual-node server. If necessary, use this procedure for *both* nodes.

---

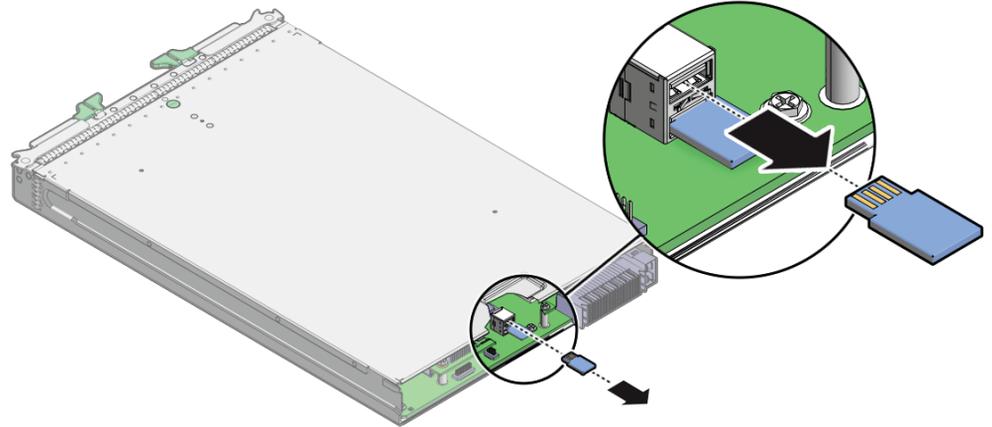
### **Before You Begin**

- See [“Illustrated Parts Breakdown” on page 15](#) for the location of the USB flash drive ports.
- See [“USB Flash Drive Specifications” on page 130](#).

- 1 If necessary, back up any data that is contained on the USB flash drives.**
  - 2 Prepare the server module for service. See [“Preparing the Server for Service” on page 25](#).**  
It is not necessary to remove the server module cover to access the USB ports.
  - 3 Locate the USB port on the back of the motherboard.**
- 

**Tip** – The top port is for node 0 and the bottom port is for node 1.

---



- 4 Grasp the USB flash drive, and pull the it out.
- 5 Prepare the server module for operation. See [“How to Prepare the Server Module for Operation” on page 34.](#)

**Next Steps** [“How to Install USB Flash Drives” on page 57](#)

## ▼ How to Install USB Flash Drives

---

**Note** – This component is a customer-replaceable unit (CRU).

---

Use this procedure to install a USB flash drive in the motherboard-mounted USB ports.

---

**Note** – The Sun Blade X6275 M2 Server module is a dual-node server. If necessary, use this procedure for *both* nodes.

---

**Before You Begin** See [“How to Remove USB Flash Drives” on page 56.](#)

- 1 **Prepare the server module for service.** See [“Preparing the Server for Service” on page 25.](#)  
It is not necessary to remove the server module cover to access the USB ports.
- 2 **Locate the correct USB port.**

---

**Tip** – The top port is for node 0 and the bottom port is for node 1.

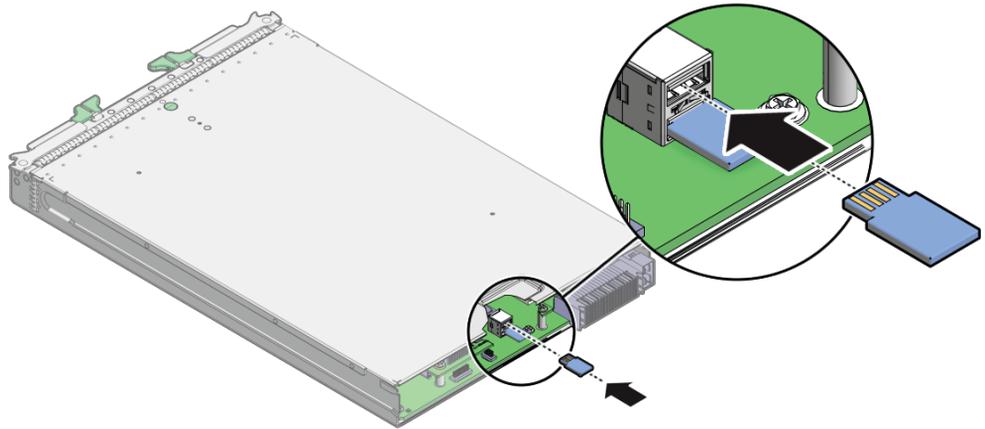
---

**3 Push the USB flash drive into the port.**

---

**Note** – If any resistance is encountered, the USB flash drive might be upside down. Rotate the drive and try again. The label is normally on top.

---



**4 Prepare the server module for operation. See “[How to Prepare the Server Module for Operation](#)” on page 34.**

**5 Verify component information.**

Use the ILOM web interface or CLI. Refer to the corresponding ILOM documentation.

## Removing and Installing a CPU and Heatsink Assembly

---

**Note** – This component is a field-replaceable unit (FRU).

---

When replacing processors, you must install processors of the same speeds on the same motherboard. Position P0 and P1 *must* contain a processor.

Use these procedures to remove and install CPU and heatsink assemblies:

- “[How to Identify a Faulty CPU](#)” on page 59

- [“How to Remove a CPU and Heatsink Assembly” on page 60](#)
- [“How to Install a CPU and Heatsink Assembly” on page 62](#)

## ▼ **How to Identify a Faulty CPU**

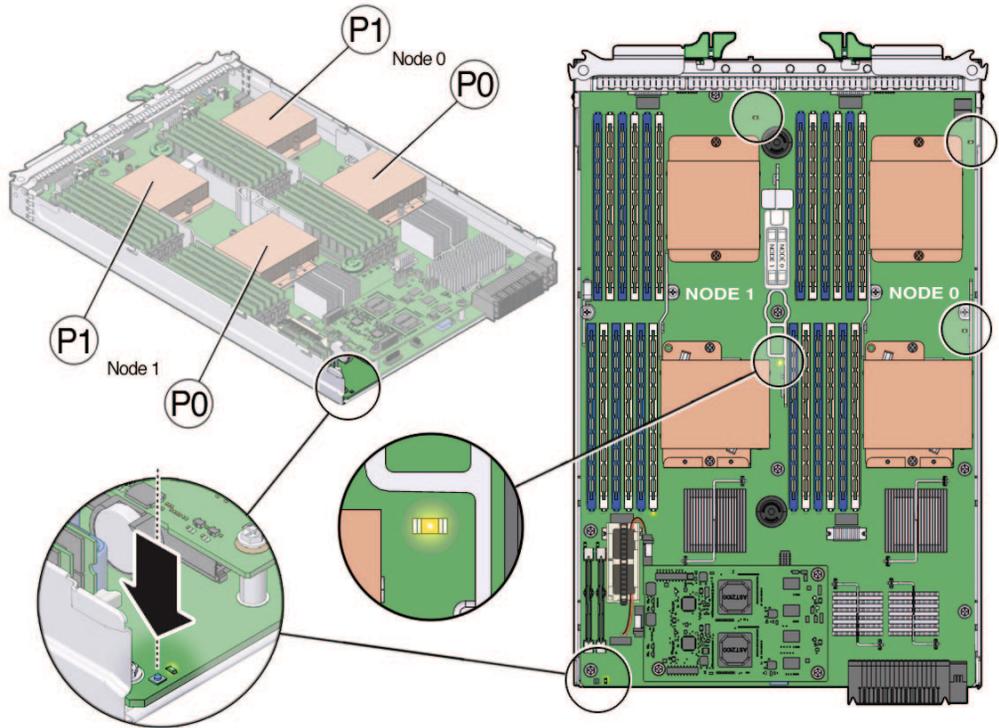
Use this procedure to identify a faulty CPU.

- Before You Begin**
- For the location of the CPU and heatsink assemblies, see [“Illustrated Parts Breakdown” on page 15](#).
  - For information about using the CPU test circuit, see [“Using the DIMM and CPU On-Board Test Circuitry” on page 77](#).
- 1 Prepare the server module for service. See [“Preparing the Server for Service” on page 25](#).**
  - 2 Press the Remind button on the motherboard.**

---

**Note** – Do not hold the Fault Remind button down longer than necessary.

---



As indicated in the following table, a failed processor is identified by a lit Processor Fault LED.

LED State	CPU Status
Off	Operating properly.
On (amber)	Faulty and should be replaced.

**Next Steps** [“How to Remove a CPU and Heatsink Assembly” on page 60](#)

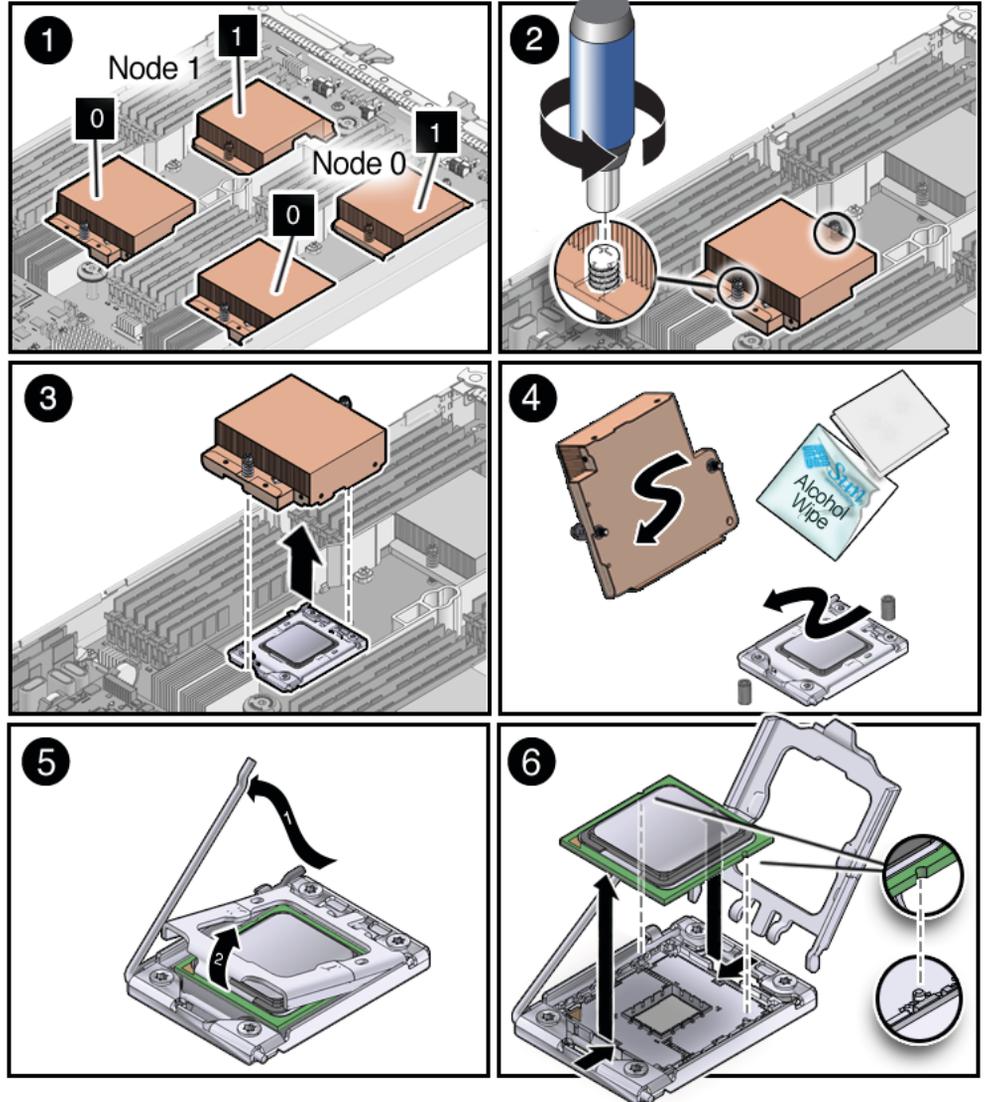
## ▼ How to Remove a CPU and Heatsink Assembly

**Note** – This component is a field-replaceable unit (FRU).

**Before You Begin** See [“How to Identify a Faulty CPU” on page 59.](#)

- 1 **Prepare the server module for service.** See [“Preparing the Server for Service” on page 25.](#)

- 2 Identify the faulty CPU. See “How to Identify a Faulty CPU” on page 59.



- 3 Gently press down on the top of the heatsink to counteract the pressure of the captive spring-loaded screws that secure the heatsink to the motherboard.
- 4 Use a number two Phillips screwdriver to *alternately* loosen each of the two spring-loaded mounting screws that secure the heatsink to the motherboard.

---

**Note** – Alternately turn each screw 180 degrees at a time until the both screws are completely loosened.

---

- 5 To separate the heatsink from the top of the CPU, gently wiggle the heatsink left and right, while pulling upward.**

See frame [3] of the illustration in [Step 2](#).

A thin layer of thermal compound separates the heatsink and the CPU. This compound also acts as an adhesive.

---

**Note** – Do not allow the thermal compound to contaminate the work space or other components.

---

- 6 Use an alcohol pad to completely remove the thermal compound from the underside of the heatsink.**
- 7 Remove any dust from the heatsink fins.**
- 8 Before you remove the CPU, use an alcohol pad to remove the thermal compound from the top of the component.**

See frame [4] of the illustration in [Step 2](#).
- 9 To release the processor cover retaining lever, push down on the end of the lever and move it slightly away from the CPU.**

See frame [5] of the illustration in [Step 2](#).
- 10 Lift the CPU cover to the fully open position and remove the CPU.**

See frame [6] of the illustration in [Step 2](#).

**Next Steps** [“How to Install a CPU and Heatsink Assembly” on page 62](#)

## ▼ **How to Install a CPU and Heatsink Assembly**

---

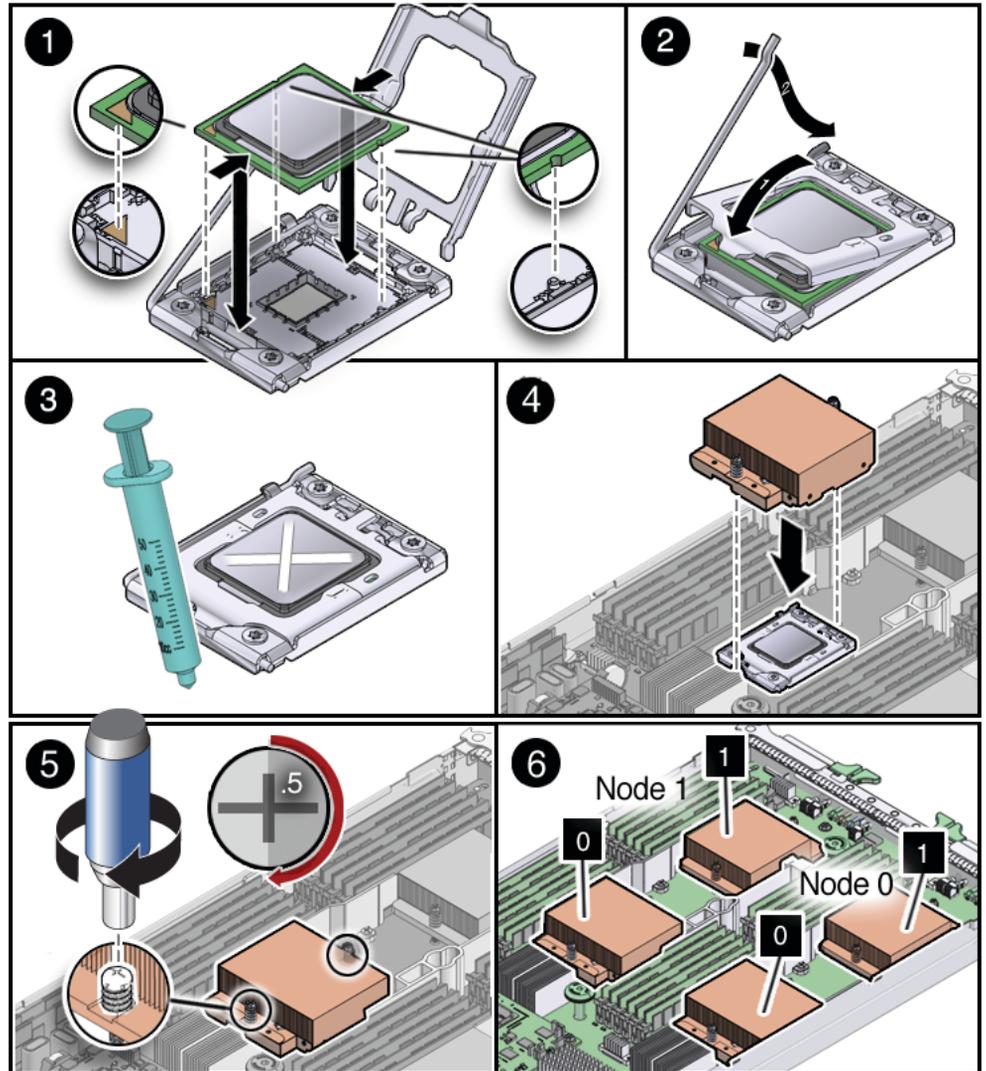
**Note** – This component is a field-replaceable unit (FRU).

---

**Before You Begin** See [“How to Remove a CPU and Heatsink Assembly” on page 60](#).

- 1 Prepare the server module for service. See [“How to Prepare the Server Module for Service” on page 25](#).**

- 2 To remove a CPU and heatsink assembly, see [“How to Remove a CPU and Heatsink Assembly” on page 60.](#)
- 3 Ensure that the CPU socket release lever is in the fully open position.  
See frame [1] in the following illustration.



- 4 Align the CPU over the socket so the notches on the sides of the CPU align with the keys on the socket.**

See frame [1] of the illustration in [Step 3](#).



---

**Caution** – Do *not* press down on the CPU. Irreparable damage to the CPU or motherboard might occur from excessive downward pressure. Do not forcibly seat the CPU into the socket. Excessive downward pressure might damage the socket pins.

---

- 5 Gently set the CPU on the socket.**

See frame [1] of the illustration in [Step 3](#).

When properly aligned, the CPU sits flat in the CPU socket and has minimal side-to-side movement.

- 6 Close the CPU cover and lower the retaining lever securing it under the retaining clip.**

See frame [2] of the illustration in [Step 3](#).

This action secures the CPU in the socket.

- 7 Using one syringe of thermal compound (500 mg [0.2 ml]), carefully apply the compound to the top of the CPU in an X pattern, stopping short of the corners.**

See frame [3] of the illustration in [Step 3](#).

- 8 Carefully position heatsink over the CPU, and align the heatsink screws with the screw holes in the motherboard.**

See frame [4] of the illustration in [Step 3](#).

- 9 Lower the heatsink onto the CPU.**



---

**Caution** – Possible thermal damage. Avoid moving the heatsink after it has contacted the top of the CPU. Too much movement could disturb the layer of thermal compound, causing voids, and leading to ineffective heat dissipation and component damage.

---

- 10 Gently press down on the top of the heatsink to counteract the pressure of the captive spring-loaded screws, and use a number 2 Phillips screwdriver to alternately tighten each screw, 180 degrees at a time, until tight.**

See frame [5] of the illustration in [Step 3](#).

- 11 Prepare the server module for operation. See [“Preparing the Server for Operation” on page 34](#).**

- 12 Update the BIOS and firmware.**

Refer to the [Oracle Integrated Lights Out Manager \(ILOM\) 3.0 Supplement for the Sun Blade X6275 M2 Server Module](#).

## ▼ How to Replace the Motherboard Assembly

---

**Note** – This component is a field-replaceable unit (FRU).

---

The motherboard is shipped installed in a server module enclosure assembly. Do *not* remove the motherboard from the server module enclosure. Remove components from the old server module enclosure, and install these components into the new enclosure and motherboard assembly.

- Before You Begin**
- If you are replacing a motherboard that is not dead, obtain the BIOS and ILOM versions and download the system software release package (combined BIOS/ILOM) that incorporates those versions. A system software release package can be downloaded from: <http://support.oracle.com>.
  - If you are replacing a dead motherboard, obtain the ILOM version and download the system software release package (combined BIOS/ILOM) that incorporates that version. A system software release package can be downloaded from: <http://support.oracle.com>.
  - Backup the FRUID information before removing the motherboard. See “How to Back Up FRU Information” on page 127.
  - For the location of components, see “Illustrated Parts Breakdown” on page 15.
- 1 **Prepare the server module for service.** See “How to Prepare the Server Module for Service” on page 25.
  - 2 **Remove reusable components from the server module motherboard.**  
See the following procedures:
    - “How to Remove the Service Processor Board” on page 53
    - “How to Remove DIMMs” on page 44
    - “How to Remove Flash Modules” on page 46
    - “How to Remove the Energy Storage Modules” on page 50
    - “How to Remove USB Flash Drives” on page 56
  - 3 **Install the components on the *new* server module motherboard assembly.**  
See the following procedures.
    - “How to Install the Service Processor Board” on page 54
    - “How to Install DIMMs” on page 45
    - “How to Install Flash Modules” on page 48
    - “How to Install the Energy Storage Modules” on page 51
    - “How to Install USB Flash Drives” on page 57
  - 4 **Prepare the server module for operation.** See “How to Prepare the Server Module for Operation” on page 34.

---

**Note** – Do *not* power on the server.

---

- 5 Place the server in standby power mode. See “How to Power the Server Module to Standby Power Mode” on page 22.**

- 6 To restore FRUID information you collected earlier, log in to Service Mode.**

The Service Mode command-line prompt appears.

```
#
```

- 7 At the prompt, type the following command:**

```
# copypsnc BACKUP1 PRIMARY
```

This command copies the contents of the BACKUP1 container to the PRIMARY container.

- 8 To display the contents of the PRIMARY container, enter the following command:**

```
# showpsnc
```

The contents of the PRIMARY container appears.

---

**Note** – The motherboard MAC address (MACADDR element in the Primary column) that appears in the output is the MAC address of the motherboard that was removed from the system.

---

You need to update the FRU MAC address, so the information is correct in the PRIMARY container.

- 9 To update the FRUID MAC address for the new motherboard, enter the following command:**

```
# setpsnc -m NEW_MAC_ADDRESS
```

where *NEW\_MAC\_ADDRESS* is the MAC address of the new motherboard.

- 10 To backup the updated FRUID information, enter the following command:**

```
# copypsnc BACKUP1 PRIMARY
```

- 11 Power on the server module. See “How to Power On the Server Module to Full Power Mode” on page 23.**

- 12 Update the system with the BIOS/ILOM firmware package you downloaded earlier.**

This will ensure that both the BIOS and ILOM firmware (which are packaged and tested together) are at a supported level.

For information about updating firmware, see *Oracle Integrated Lights Out Manager (ILOM) 3.0 Supplement for the Sun Blade X6275 M2 Server Module*.

# Diagnostic and Maintenance Information and Procedures

---

This section contains the following diagnostic and maintenance information and procedures:

- [“Diagnosing Server Module Hardware Faults” on page 67](#)
- [“Clearing CMOS NVRAM and Resetting Passwords” on page 79](#)
- [“About the BIOS Setup Utility” on page 93](#)
- [“How to Display FRUID Information” on page 126](#)
- [“How to Back Up FRU Information” on page 127](#)
- [“Removing and Installing a Server Module Filler Panel” on page 127](#)

## Diagnosing Server Module Hardware Faults

This section contains information and procedures that you can use to diagnose server module hardware issues. The following task table lists diagnostic-related procedures and topics.

Task	Link
How to use the x86 diagnostic software that is available for your server.	Refer to the <i>x86 Server Diagnostics Guide</i> included with the server's online documentation collection.
How to view sensor information and set up traps.	Refer to the <i>Oracle Integrated Lights Out Manager (ILOM) 3.0 Supplement for the Sun Blade X6275 M2 Server Module</i>
How to use ILOM to view the system event log (SEL).	Refer to the ILOM documentation included with the Sun Blade X6275 M2 Server Module documentation collection.
Understanding the functions of the front panel LEDs.	See <a href="#">“LED Functions” on page 68</a> .
Using the DIMM and CPU on board test circuitry.	See <a href="#">“Using the DIMM and CPU On-Board Test Circuitry” on page 77</a> .
Identifying faulty DIMMs.	See <a href="#">“How to Identify Faulty DIMMs” on page 40</a> .
Identifying faulty CPUs.	See <a href="#">“How to Identify a Faulty CPU” on page 59</a> .
Connecting the multi-port cable to the server.	See <a href="#">“Using the Multi-Port Cable” on page 77</a> .

Task	Link
Clearing CMOS NVRAM and Resetting Passwords.	See <a href="#">“Clearing CMOS NVRAM and Resetting Passwords” on page 79.</a>

---

## LED Functions

You can use the server module's LEDs to discern the status of the server and diagnose server issues. This section contains the following topics:

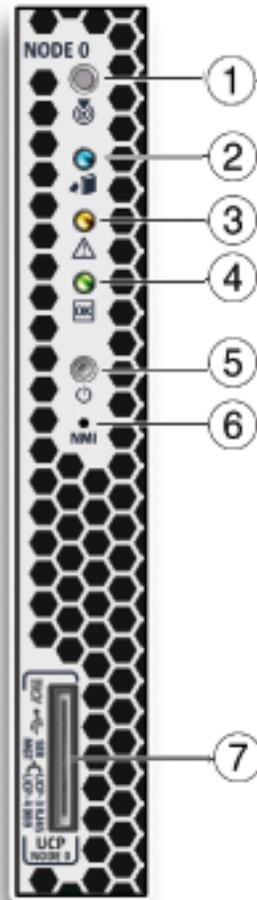
- [“Front Panel LEDs” on page 68](#)
- [“DIMM Fault LEDs” on page 72](#)
- [“CPU Fault LEDs” on page 74](#)
- [“FMod Power Status LEDs” on page 76](#)

### Front Panel LEDs

The front panel has the following LEDs:

- Locate LED helps you find the server. You can activate the Locate LED using ILOM. For more information, see [“Using the Locate LED to Find the Server Module \(Optional\)” on page 29.](#)
- Ready to Remove LED indicates when it is safe to remove the server module.
- The Power OK LED allows you to discern the power state of the server. For more information, see [“Power Button and Power OK LED” on page 20.](#)
- The Service Action Required LED indicates if the server has a fault.

The following illustration and table show the location and function of the front panel LEDs.



---

**Note** – After server module insertion into a powered-on chassis, all front panel LEDs blink three times.

---

Legend	Name	Color	Activity
1	Locate LED	White	Blinks when activated in ILOM by user.
2	Ready to Remove LED	Blue	On solid when it is OK to remove.
3	Service Action Required (Fault) LED	Amber	On solid when the system has a fault status.
4	Power/OK LED	Green	<ul style="list-style-type: none"> <li>■ SP booting: Fast blink when SP is booting</li> <li>■ Standby power mode: Slow blink</li> <li>■ Full power mode: on solid (does not blink)</li> </ul>
5	Power button	None	Used to power the server module.
6	NMI button	None	For Service use only.
7	Universal Connector Port (UCP)	None	Connection for the multi-port cable.

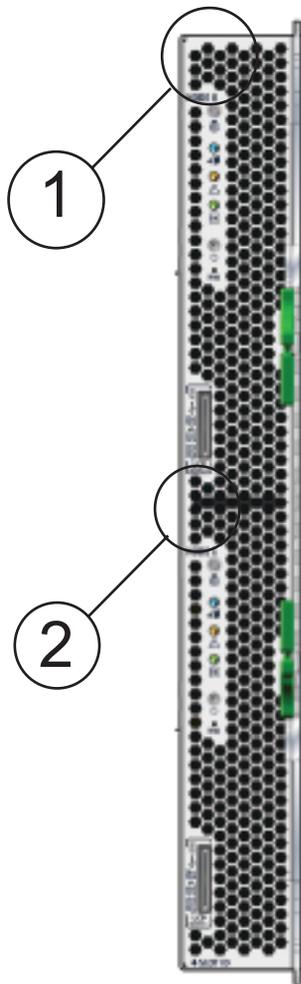
*See Also:*

- [“POST Code LEDs” on page 70](#)
- [“DIMM Fault LEDs” on page 72](#)
- [“CPU Fault LEDs” on page 74](#)
- [“FMod Power Status LEDs” on page 76](#)

## POST Code LEDs

Two pairs of LEDs inside the front panel of your server (one pair for each node) display a set of two-digit hexadecimal POST codes. You can use these LEDs to discern the status of the server and diagnose server- and node-related issues. To view the LEDs, you need to look through the front panel and into the server module at the locations shown in the following illustration.

The illustration and table below show the location and describe the function of the Post Code LEDs.



Legend	Name	Color	Activity
1	Node 0 Code LED	Red	For a list of POST codes, see <a href="#">Table 1</a>
2	Node 1 Code LED	Red	

**TABLE 1** POST Codes For the Front Panel POST Code LEDs

Code	Meaning
4F	Initializing IPMI BT interface.
D4	Testing base memory; system might hang if test fails.

TABLE 1 POST Codes For the Front Panel POST Code LEDs (Continued)

Code	Meaning
D5	Copying Boot Block to RAM and transferring control to RAM.
38	Initializing different devices through DIM (Device Initialization Manager). For example, USB controllers are initialized at this point.
75	Initializing Int-13 and preparing for IPL detection.
78	Initializing IPL devices controlled by BIOS and option ROMs.
85	Displaying errors to the user and getting the user response for error.
87	Executing BIOS setup if needed / requested. Checking boot password if installed.
00	Passing control to OS Loader (typically INT19h).
FF	The flash has been updated successfully. Making flash write disabled. Disabling ATAPI hardware. Restoring CPUID value back into register. Giving control to F000 ROM at F000:FFF0h.

See Also:

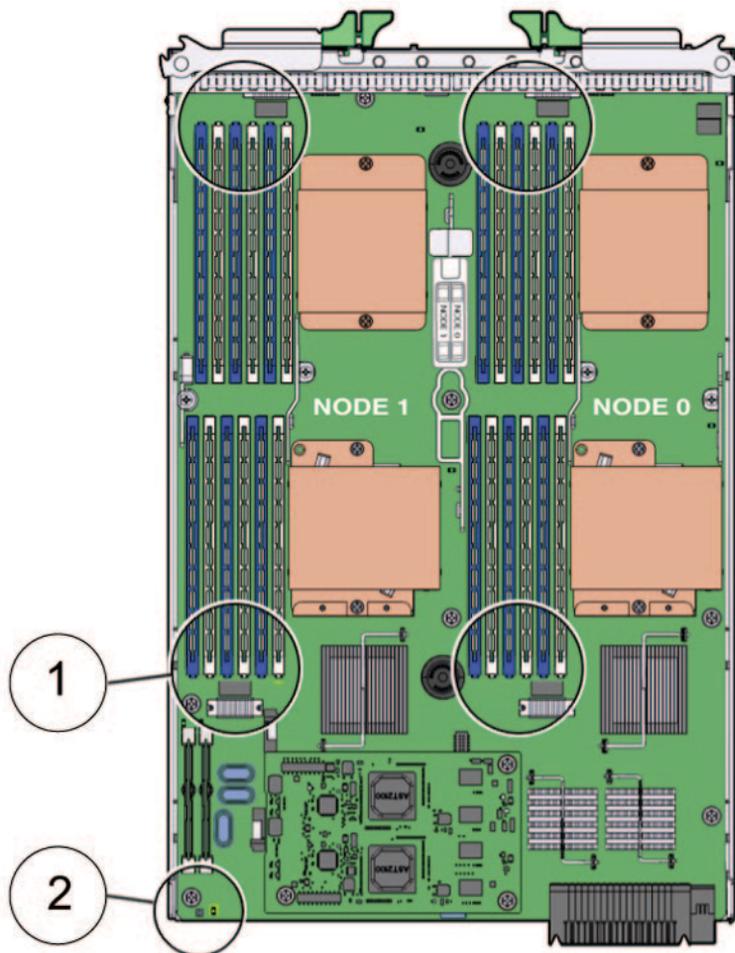
- [“Front Panel LEDs” on page 68](#)
- [“DIMM Fault LEDs” on page 72](#)
- [“CPU Fault LEDs” on page 74](#)
- [“FMod Power Status LEDs” on page 76](#)

## DIMM Fault LEDs

Use the following to diagnose DIMM faults:

- The DIMM Fault LEDs are located on the server module motherboard adjacent to each DIMM slot.
- The Fault Remind button is located on the motherboard next to the Charge Status LED. Pressing the Fault Remind Button lights up the DIMM Fault LEDs for the slots that contain DIMMs that are in a fault state.
- The Charge Status LED indicates the usability of the DIMM test circuit. For more information, see [“Using the DIMM and CPU On-Board Test Circuitry” on page 77](#).

The following illustration and table show the locations and functions of DIMM Fault LED, the Charge Status LED, and the Fault Remind button.



Legend	Name	Color	Activity
1	DIMM Fault LEDs (four locations)	Amber	On solid when the Fault Remind button is pressed and a CPU fault exists.
2	Fault Remind button and Charge Status LED	Green	On solid when circuit is charged and usable. Off when the circuit is not charged (circuit is unusable in a non-charged state).

See Also:

- “Front Panel LEDs” on page 68

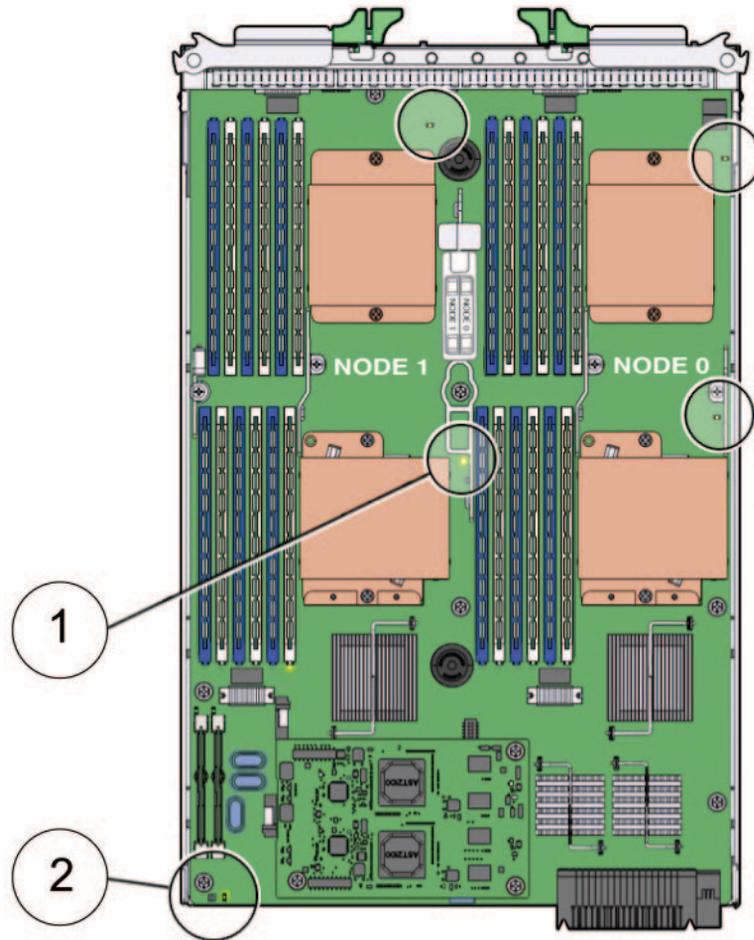
- “POST Code LEDs” on page 70
- “CPU Fault LEDs” on page 74
- “FMod Power Status LEDs” on page 76

## CPU Fault LEDs

Use the following LEDs and button to diagnose CPU faults:

- CPU Fault LEDs are located next to each CPU. The LEDs light up when the Fault Remind button is pressed and one or more of the CPUs are in a fault state.
- The Fault Remind button. Pressing the Fault Remind Button lights up the CPU Fault LEDs for the CPUs that are in a fault state.
- The Charge Status LED indicates the usability of the DIMM test circuit. For more information, see [“Using the DIMM and CPU On-Board Test Circuitry” on page 77](#).

The following illustration and table show the locations and functions of CPU Fault LEDs, the Charge Status LED, and the Fault Remind button.



Legend	Name	Color	Activity
1	CPU Fault LEDs (four locations—circled)	Amber	On solid when the Fault Remind button is pressed and a CPU or DIMM fault exists.
2	Fault Remind button and Charge Status LED	Green	On solid when circuit is charged and usable. Off when the circuit is not charged (circuit is unusable in a non-charged state).

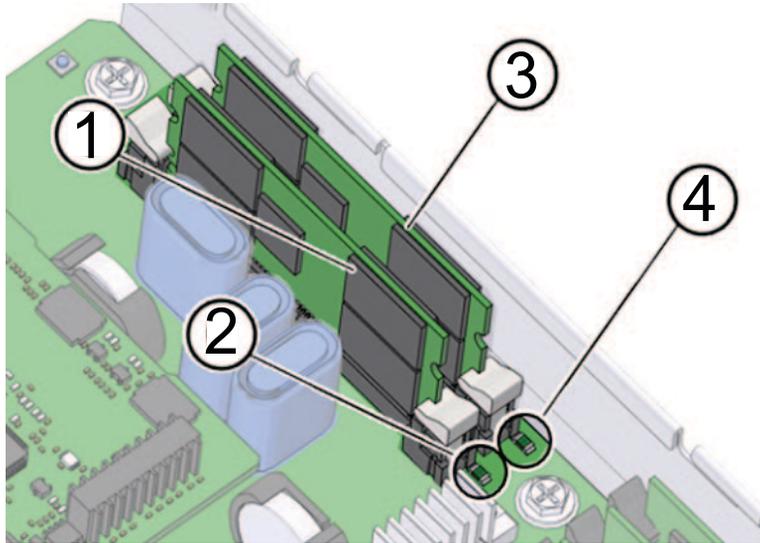
See Also:

- “Front Panel LEDs” on page 68
- “POST Code LEDs” on page 70

- “DIMM Fault LEDs” on page 72
- “FMod Power Status LEDs” on page 76

## FMod Power Status LEDs

The FMod Power Status LEDs indicate the status of the charged FMod test circuit. The following illustration and table shows the location of the FMods and FMod power



Legend	Name	Color	Activity
1	FMod (node 0)	None	None.
2	Node 0 Power Status LED	Green	On solid when ESM is charged and circuit is usable. Off when the ESM is not charged and circuit is in an unusable state.  <b>Note</b> – Do not remove FMod when FMod Power Status LED is lit.
3	FMod (node 1)	None	None.
4	Node 1 Power Status LED	Green	On solid when ESM is charged and circuit is usable. Off when the ESM is not charged and circuit is in an unusable state.  <b>Note</b> – Do not remove FMod when FMod Power Status LED is lit.

See Also:

- [“Front Panel LEDs” on page 68](#)
- [“POST Code LEDs” on page 70](#)
- [“DIMM Fault LEDs” on page 72](#)
- [“CPU Fault LEDs” on page 74](#)

## Using the DIMM and CPU On-Board Test Circuitry

When DIMMs or CPUs have a fault, the system lights the front panel Service Action Required LED. The LED indicates that immediate service action is required. To address the issue, the server must be powered down and removed from the chassis, so you can use the internal on-board test circuitry to identify the failed component.

The test circuitry is a charged circuit that has a time-limited window of usability (30–60 minutes). When the Fault Remind button is pressed, a Charge Status LED lights if the circuit is usable. If too much time has elapsed between removing the server module and using the test circuit, the charge can drain completely. If this happens, the circuit becomes unusable (and the LED turns off). When the test circuit is drained, the error information is lost. For the circuitry to become usable again, the server module must be installed in the chassis, and the error must occur again.

---

**Tip** – When diagnosing DIMM and CPU errors, the best practice is to remove the server module from the server and use the test circuitry as soon as possible.

---

For information about how to identify faulty DIMMs or CPUs using the on-board fault test circuits, see the following procedures:

- [“How to Identify Faulty DIMMs” on page 40](#)
- [“How to Identify a Faulty CPU” on page 59](#)

## Using the Multi-Port Cable

The multi-port cable provides a single multiple-interface access point to the server module. Using the multi-port cable, you can work locally at the server and attach USB, serial, and video devices directly to the server module.



**Caution** – Possible damage to the cable, server module, or chassis. Disconnect the multi-port dongle cable when you are finished using the cable. Otherwise, the cable, server module, or chassis can be damaged when the chassis door is closed or the cable is abruptly pulled.

---

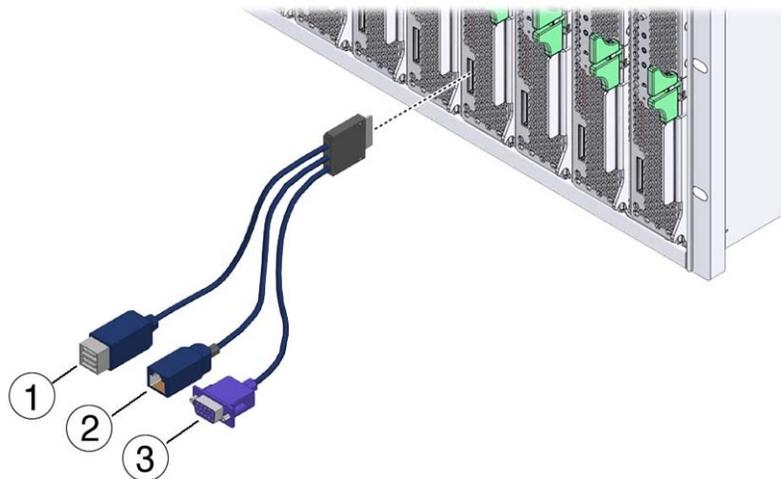
- [“Multi-Port Cable Connection Overview” on page 78](#)

- [“How to Attach a Multi-Port Cable” on page 79](#)

## Multi-Port Cable Connection Overview

You can use the multi-port cable to connect devices directly into the Universal Connector Port (UCP) on the front of the server module for service, maintenance, and OS installation tasks. Your multi-port cable might have three cables, or it might have four cables. The four-port cable has a DB-9 serial connector, while the three-port cable does not.

The following illustration shows the interfaces available through the UCP using the three-connector multi-port cable.



---

### Legend

---

- 1 USB (2 ports)
  - 2 RJ-45 (serial management port)
  - 3 DB-15 (video port)
- 

Your chassis might ship with a DB-9-to-RJ-45 serial cable adapter. The adapter allows you to attach a serial cable with a DB-9 connector to the server module using the RJ-45 port on the multi-port cable.

## ▼ How to Attach a Multi-Port Cable

The multi-port cable attaches to the front of the server module using the universal connector port (UCP). The multi-port cable is designed for temporary attachment. Disconnect the cable when finished.

---

**Note** – The Sun Blade X6275 M2 Server module is a dual-node server. If necessary, use this procedure for *both* nodes.

---

- Before You Begin**
- For an overview of the available interfaces on the multi-port cable, see “[Multi-Port Cable Connection Overview](#)” on page 78.
  - For information about using the multi-port cable to access ILOM, refer to the [Sun Blade X6275 M2 Server Module Installation Guide](#).
- 1 **Position the multi-port cable connector so the flat side of the connector aligns with the flat side of the universal connector port (UCP).**
  - 2 **Gently squeeze the sides of the multi-port cable connector and insert the multi-port cable into the UCP on the server module front panel.**
  - 3 **Connect the devices using the appropriate interfaces.**




---

**Caution** – Possible component damage. The multi-port cable is designed for temporary use. When not in use, do not leave the cable attached to the server module.

---

- 4 **To disconnect the multi-port cable, gently squeeze the sides of the cable connector and pull away from the server module.**

## Clearing CMOS NVRAM and Resetting Passwords

You can clear CMOS NVRAM using the BIOS Setup Utility. You can also clear CMOS NVRAM and reset BIOS passwords using the reset jumpers located on the server module motherboard. This section contains the following procedures:

- “[How to Clear the NVRAM Using the BIOS Setup Utility](#)” on page 79
- “[How to Clear the CMOS and Reset the BIOS Password Using Jumpers](#)” on page 80

## ▼ How to Clear the NVRAM Using the BIOS Setup Utility

Use this procedure to use the BIOS Setup Utility to clear the NVRAM.

---

**Note** – The Sun Blade X6275 M2 Server module is a dual-node server. If necessary, use this procedure for *both* nodes.

---

- 1 To access the BIOS Setup Utility, press F2 during server module boot.**

The BIOS Setup Utility main screen appears.

- 2 Use the arrow keys to highlight the PCI menu.**

The PCI screen appears (see [Figure 19](#)).

- 3 Set Clear NVRAM to Yes.**

- 4 Save and exit the BIOS Setup Utility.**

The systems boots and clears the NVRAM.

## ▼ **How to Clear the CMOS and Reset the BIOS Password Using Jumpers**

You can reset a password and clear both the CMOS NVRAM and BIOS password by changing the J42\_1 (compute node 0) and J42\_2 (compute node 1) jumper positions.

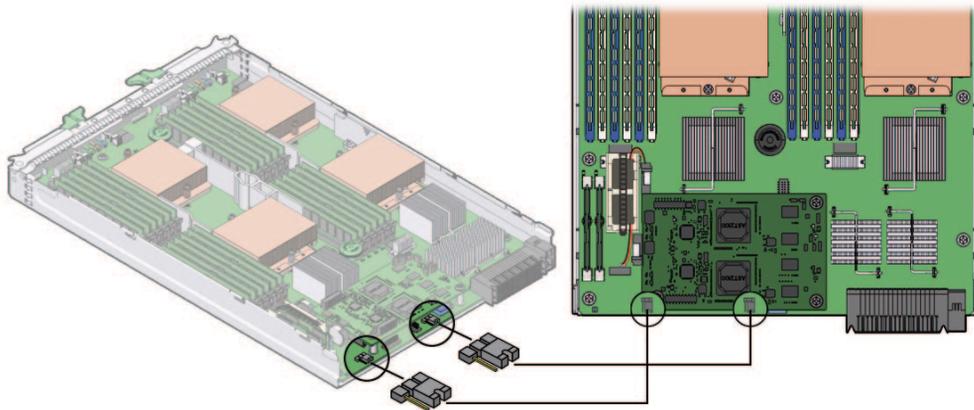
---

**Note** – The Sun Blade X6275 M2 Server module is a dual-node server. If necessary, use this procedure for *both* nodes.

---

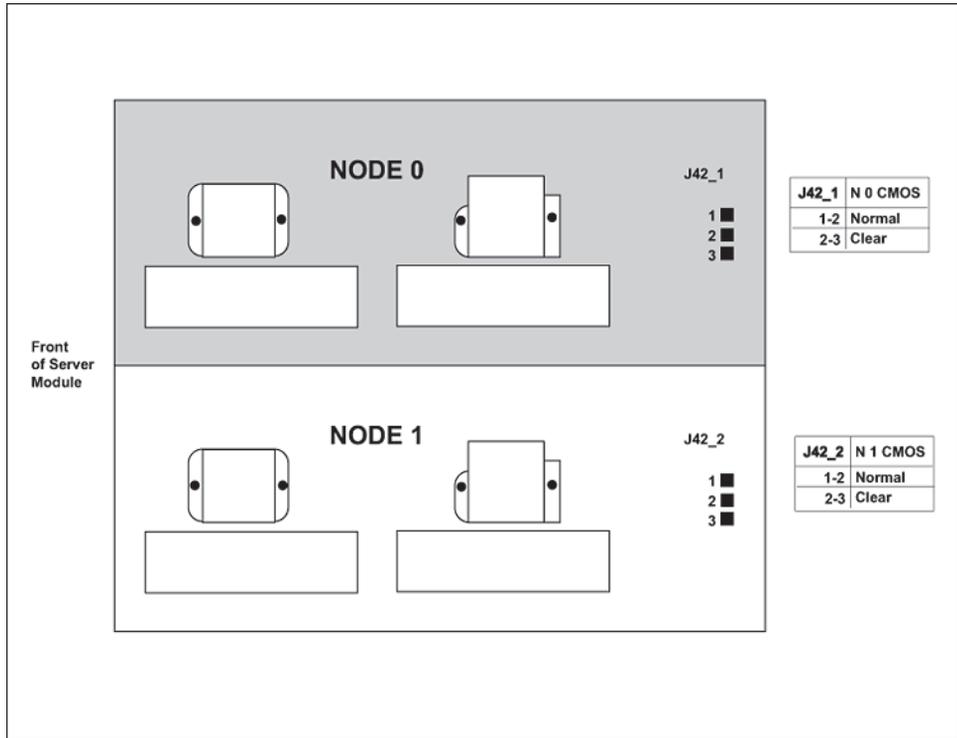
- 1 Prepare the server module for service. See [“Preparing the Server for Service” on page 25](#).**

- 2 Locate the jumpers J42\_1 (compute node 0) and J42\_2 (compute node 1) jumpers on the rear of the motherboard. The jumper default position is 1-2.



**3 Place the jumper on position 2-3 for 10 seconds.**

This action clears the CMOS and resets the BIOS password.



**4 Remove the jumper from position 2-3, and replace it back to its original position 1-2.**

**5 Prepare the server module for operation. See [“Preparing the Server for Operation”](#) on page 34.**

## Recovering from Corrupted Service Processor Firmware

If the service processor (SP) firmware becomes corrupted, you can recover by using the following procedure:

- [“How to Recover the SP Firmware Using the Preboot Menu”](#) on page 83

## ▼ How to Recover the SP Firmware Using the Preboot Menu

The preboot menu provides the ability to recover the ILOM firmware image by updating (flashing) the SP firmware.

---

**Note** – You can also update the SP using the ILOM CLI or the web interface (refer to the Oracle Integrated Lights Out Manager documentation).

---

**Before You Begin** You must have a valid `.flash` firmware image file on a TFTP server. This file is available on the tools and drivers DVD, and on the Oracle download site:

<http://www.sun.com/servers/blades/downloads.jsp>

---

**Note** – Updating the SP firmware using the preboot menu requires a `.flash` file instead of the `.pkg` file used to update the SP from the ILOM.

---

### 1 Restart the SP.

Refer to the corresponding ILOM supplement for detailed preboot menu and ILOM information.

### 2 Interrupt the SP boot process to access the preboot menu. Choose one of the following methods:

- Press the Locate button.
- Type **xyzy** during a pause in the bootstrap process.

The preboot prompt appears.

```
Preboot>
```

### 3 At the preboot prompt, enter the command:

```
net flash IPaddress path/name.flash
```

where *IPaddress* is the IP address of a TFTP server, *path* is the path to the file relative to `/tftpboot`, and *name* is the first part of the `.flash` file filename

For example:

```
Preboot>
net flash 10.8.173.25 images/system-rom.flash
```

After a series of messages, the preboot prompt appears.

```
Preboot>
```

#### 4 To restart the SP, enter the reset command.

```
Preboot> reset
```

The preboot menu exits and the ILOM boots.

## BIOS Power-On Self-Test (POST) Codes

The system BIOS provides a basic power-on self-test (POST), during which the BIOS checks the basic devices required for the server to operate. The progress of the self-test is indicated by a series of POST codes. This section explains the BIOS POST testing, provides an alternate method for viewing the codes, describes how to change POST options, and lists the POST codes.

- “About POST” on page 84
- “How BIOS POST Memory Testing Works” on page 84
- “Viewing POST Codes Using ILOM” on page 85
- “How to Change the POST Options” on page 86
- “POST Codes” on page 87

### About POST

When the server module is powered on or booted, it goes through a series of hardware tests called Power-On Self Tests (POST). As the POST executes, enters, and exits the various hardware tests (memory, ports, etc.) it generates a series of four-digit hexadecimal codes that you can read at the bottom right corner of the system’s VGA screen (the POST needs to advance past the video initialization). In general, the POST codes change so rapidly that it is difficult to use them as a diagnostic tool. However, when the server encounters a problem, it stops the boot process and displays the last code. You can reference the code against the listing at [Table 2](#).

An alternate method of displaying POST codes is to redirect the output of the console to a serial port (see “[Viewing POST Codes Using ILOM](#)” on page 85).

### How BIOS POST Memory Testing Works

The BIOS POST memory testing is performed as follows:

1. The first megabyte of DRAM is tested by the BIOS before the BIOS code is shadowed (that is, copied from ROM to DRAM).
2. Once executing out of DRAM, the BIOS performs a simple memory test (a write/read of every location with the pattern 55aa55aa).

---

**Note** – This memory test is performed only if Quick Boot is *not* enabled from the Boot Settings Configuration screen. Enabling Quick Boot causes the BIOS to skip the memory test. See [“How to Change the POST Options” on page 86](#) for more information.

---

3. The BIOS polls the memory controllers for both correctable and non-correctable memory errors and logs those errors into the SP.
4. The message BMC Responding appears at the end of POST.

## Viewing POST Codes Using ILOM

You can view the BIOS POST codes remotely using the web interface or the CLI.

- [“How to View BIOS POST Codes Using the Web Interface” on page 85](#)
- [“How to View BIOS POST Codes Using the CLI” on page 86](#)

### ▼ How to View BIOS POST Codes Using the Web Interface

- 1 **Open a browser and use the node SP’s IP address as the URL.**

Refer to the *Oracle Integrated Lights Out Manager 3.0 User’s Guide* for information on how to obtain the IP address of the SP.

- 2 **Type a user name and password as follows:**

User name: `root` Password: `changeme`

- 3 **The ILOM SP web interface screen appears.**

- 4 **Click the Remote Control tab.**

- 5 **Click the Redirection tab.**

- 6 **Click the Start Redirection button.**

The JavaRConsole window appears and prompts you for your user name and password again, then the current POST screen appears.

- 7 **To view POST codes, reboot the server.**

**See Also** [“How to View BIOS POST Codes Using the CLI” on page 86](#)

## ▼ How to View BIOS POST Codes Using the CLI

- 1 Log in to the node SP by entering the following command from a terminal window:

```
ssh root@SP_IPaddress
```

where *SP\_IPaddress* is the IP address of the node SP.

- 2 Start the serial console by entering the command:

```
-> start /HOST/console
```

**See Also** [“How to View BIOS POST Codes Using the Web Interface” on page 85](#)

## ▼ How to Change the POST Options

**Before You Begin** See [“About the BIOS Setup Utility” on page 93](#).

- 1 Access the BIOS Setup Utility. See [“How to Configure the BIOS Using the BIOS Setup Utility” on page 95](#).

The BIOS Main Menu screen appears.

- 2 Select the Boot menu. See [“Boot Menu Screens” on page 116](#).

The Boot Settings screen appears.

- 3 Select Boot Settings Configuration. See [Figure 21](#).

The Boot Settings Configuration screen appears.

- 4 On the Boot Settings Configuration screen, configure the following settings by selecting enable or disable:

- **Quick Boot:** This option is enabled by default. The BIOS skips certain tests while booting, such as the extensive memory test. This decreases the time it takes for the system to boot.
- **Quiet Boot:** This option is disabled by default. If you enable this option, the Sun Microsystems logo appears instead of POST codes.
- **Wait for F1 if Error:** This option is enabled by default. The system pauses if an error is found during POST and only resumes when you press the F1 key.
- **Retry Boot List:** Automatically retries the boot list when all devices have failed. This option is enabled by default.
- **IB gPXE Boot First:** Sets the on-board Infiniband gPXE to always boot first. This option is disabled by default.

- 5 Save and exit the BIOS Setup Utility.

## POST Codes

The table below contains descriptions of each of the POST codes, listed in the same order in which they are generated. These POST codes appear at the bottom right of the BIOS screen as a four-digit string that is a combination of two-digit output from primary I/O port 80 and two-digit output from secondary I/O port 81. In the POST codes listed below, the first two digits are from port 81 and the last two digits are from port 80.

You can see some of the POST codes from primary I/O port 80 on LEDs inside the front panel of your server node (see [“POST Code LEDs” on page 70](#)).

The Response column describes the action taken by the system on encountering the corresponding error. The actions are:

- **Warning or Not an Error:** The message appears on the screen. An error record is logged to the system event log (SEL) for a hardware component. The system continues booting with a degraded state. The user might want to replace the component.
- **Pause:** The message appears on the screen, an error is logged to the SEL, and user input is required to continue. The user can take immediate corrective action or choose to continue booting.
- **Halt:** The message appears on the screen, an error is logged to the SEL, and the system cannot boot unless the error is resolved. The user needs to replace the faulty part and restart the system.

**TABLE 2** Error Messages and Responses

Error Code	Error Message	Response
0000	Timer Error	Pause
0003	CMOS Battery Low	Pause
0004	CMOS Settings Wrong	Pause
0005	CMOS Checksum Bad	Pause
000B	CMOS Memory Size Wrong	Pause
000C	RAM R/W Test Failed	Pause
000E	A: Drive Error	Pause
000F	B: Drive Error	Pause
0012	CMOS Date/Time Not Set	Pause
0040	Refresh Timer Test Failed	Halt
0041	Display Memory Test Failed	Pause
0042	CMOS Display Type Wrong	Pause

TABLE 2 Error Messages and Responses (Continued)

Error Code	Error Message	Response
0043	~<INS> Pressed	Pause
0044	DMA Controller Error	Halt
0045	DMA-1 Error	Halt
0046	DMA-2 Error	Halt
0047	Unknown BIOS error. Error code = 0047	Halt
0048	Password Check Failed	Halt
0049	Unknown BIOS error. Error code = 0049	Halt
004A	Unknown BIOS error. Error code = 004A	Pause
004B	Unknown BIOS error. Error code = 004B	Pause
004C	Keyboard/Interface Error	
005D	S.M.A.R.T. Command Failed	
005E	Password Check Failed	Pause
0101	Warning! This system board does not support the power requirements of the installed processor. The processor will be run at a reduced frequency, which will impact system performance.	Pause
0102	Error! The CPU Core to Bus ratio or VID configuration has failed! Please enter BIOS Setup and re-config it.	Pause
0103	ERROR! CPU MTRRs configuration failed! Uncacheable memory hole or PCI space too complicated.	
0120	Thermal Trip Failure	Pause
0121	Thermal Trip Failure	Pause
0122	Thermal Trip Failure	Pause
0123	Thermal Trip Failure	Pause
0124	Thermal Trip Failure	Pause
0125	Thermal Trip Failure	Pause
0126	Thermal Trip Failure	Pause
0127	Thermal Trip Failure	Pause
0128	Thermal Trip Failure	
0129	Thermal Trip Failure	

TABLE 2 Error Messages and Responses (Continued)

Error Code	Error Message	Response
012A	Thermal Trip Failure	
012B	Thermal Trip Failure	
012C	Thermal Trip Failure	
012D	Thermal Trip Failure	
012E	Thermal Trip Failure	
012F	Thermal Trip Failure	
0150	Processor Failed BIST	Pause
0151	Processor Failed BIST	Pause
0152	Processor Failed BIST	Pause
0153	Processor Failed BIST	Pause
0154	Processor Failed BIST	Pause
0155	Processor Failed BIST	Pause
0156	Processor Failed BIST	Pause
0157	Processor Failed BIST	Pause
0158	Processor Failed BIST	
0159	Processor Failed BIST	
015A	Processor Failed BIST	
015B	Processor Failed BIST	
015C	Processor Failed BIST	
015D	Processor Failed BIST	
015E	Processor Failed BIST	
015F	Processor Failed BIST	
0160	Processor missing microcode	Pause
0161	Processor missing microcode	Pause
0162	Processor missing microcode	Pause
0163	Processor missing microcode	Pause
0164	Processor missing microcode	Pause
0165	Processor missing microcode	Pause

TABLE 2 Error Messages and Responses (Continued)

Error Code	Error Message	Response
0166	Processor missing microcode	Pause
0167	Processor missing microcode	Pause
0168	Processor missing microcode	
0169	Processor missing microcode	
016A	Processor missing microcode	
016B	Processor missing microcode	
016C	Processor missing microcode	
016D	Processor missing microcode	
016E	Processor missing microcode	
016F	Processor missing microcode	
0180	BIOS does not support current stepping	Pause
0181	BIOS does not support current stepping	Pause
0182	BIOS does not support current stepping	Pause
0183	BIOS does not support current stepping	Pause
0184	BIOS does not support current stepping	Pause
0185	BIOS does not support current stepping	Pause
0186	BIOS does not support current stepping	Pause
0187	BIOS does not support current stepping	Pause
0188	BIOS does not support current stepping	
0189	BIOS does not support current stepping	
018A	BIOS does not support current stepping	
018B	BIOS does not support current stepping	
018C	BIOS does not support current stepping	
018D	BIOS does not support current stepping	
018E	BIOS does not support current stepping	
018F	BIOS does not support current stepping	
0192	L2 cache size mismatch.	
0193	CPUID, Processor stepping are different.	

TABLE 2 Error Messages and Responses (Continued)

Error Code	Error Message	Response
0194	CPUID, Processor family are different.	Pause
0195	Front side bus mismatch. System halted.	
0196	CPUID, Processor Model are different.	Pause
0197	Processor speeds mismatched.	Pause
5120	CMOS cleared by jumper.	Pause
5121	Password cleared by jumper.	Pause
5125	Not enough conventional memory to copy PCI Option ROM.	
5180	Unsupported Memory Vendor : DIMM_A0	Warning
5181	Unsupported Memory Vendor : DIMM_A1	Warning
5182	Unsupported Memory Vendor : DIMM_A2	Warning
5183	Unsupported Memory Vendor : DIMM_A3	Warning
5184	Unsupported Memory Vendor : DIMM_A4	
5185	Unsupported Memory Vendor : DIMM_B0	Warning
5186	Unsupported Memory Vendor : DIMM_B1	Warning
5187	Unsupported Memory Vendor : DIMM_B2	Warning
5188	Unsupported Memory Vendor : DIMM_B3	Warning
5189	Unsupported Memory Vendor : DIMM_B4	Warning
518A	Unsupported Memory Vendor : DIMM_B5	Warning
518B	Unsupported Memory Vendor : DIMM_C0	Warning
518C	Unsupported Memory Vendor : DIMM_C1	Warning
518D	Unsupported Memory Vendor : DIMM_C2	Warning
518F	Unsupported Memory Vendor : DIMM_C3	Warning
5190	Unsupported Memory Vendor : DIMM_C4	Warning
5191	Unsupported Memory Vendor : DIMM_C5	Warning
5192	Unsupported Memory Vendor : DIMM_D0	Warning
5193	Unsupported Memory Vendor : DIMM_D1	Warning
5194	Unsupported Memory Vendor : DIMM_D2	Warning
5195	Unsupported Memory Vendor : DIMM_D3	Warning

TABLE 2 Error Messages and Responses (Continued)

Error Code	Error Message	Response
5196	Unsupported Memory Vendor : DIMM_D4	Warning
5197	Unsupported Memory Vendor : DIMM_D5	Warning
51A0	Unsupported AMB Vendor : DIMM_A0	Warning
51A1	Unsupported AMB Vendor : DIMM_A1	Warning
51A2	Unsupported AMB Vendor : DIMM_A2	Warning
51A3	Unsupported AMB Vendor : DIMM_A3	Warning
51A4	Unsupported AMB Vendor : DIMM_A4	Warning
51A5	Unsupported AMB Vendor : DIMM_A5	Warning
51A6	Unsupported AMB Vendor : DIMM_B0	Warning
51A7	Unsupported AMB Vendor : DIMM_B1	Warning
51A8	Unsupported AMB Vendor : DIMM_B2	Pause
51A9	Unsupported AMB Vendor : DIMM_B3	Warning
51AA	Unsupported AMB Vendor : DIMM_B4	Warning
51AB	Unsupported AMB Vendor : DIMM_B5	Warning
51AC	Unsupported AMB Vendor : DIMM_C0	Warning
51AD	Unsupported AMB Vendor : DIMM_C1	Pause
51AE	Unsupported AMB Vendor : DIMM_C2	Warning
51AF	Unsupported AMB Vendor : DIMM_C3	Pause
51B0	Unsupported AMB Vendor : DIMM_C4	Pause
51B1	Unsupported AMB Vendor : DIMM_C5	Pause
51B2	Unsupported AMB Vendor : DIMM_D0	
51B3	Unsupported AMB Vendor : DIMM_D1	
51B4	Unsupported AMB Vendor : DIMM_D2	
51B5	Unsupported AMB Vendor : DIMM_D3	
51B6	Unsupported AMB Vendor : DIMM_D4	
51B7	Unsupported AMB Vendor : DIMM_D5	
51C0	Memory Configuration Error.	
8101	Warning! USB Host Controller not found at the specified address!!!	

TABLE 2 Error Messages and Responses (Continued)

Error Code	Error Message	Response
8102	Error! USB device failed to initialize!!!	
8104	Warning! Port 60h/64h emulation is not supported by this USB Host Controller!!!	
8105	Warning! EHCI controller disabled. It requires 64bit data support in the BIOS.	
8301	Not enough space in runtime area. SMBIOS data will not be available.	
8302	Not enough space in runtime area. SMBIOS data will not be available.	
8601	Error: BMC Not Responding	
8701	Insufficient Runtime space for MPS data!. System may operate in PIC or Non-MPS mode.	

## Server Module Maintenance Procedures and Information

This section contains the following maintenance procedures and topics:

- [“About the BIOS Setup Utility” on page 93](#)
- [“How to Display FRUID Information” on page 126](#)
- [“How to Back Up FRU Information” on page 127](#)
- [“Removing and Installing a Server Module Filler Panel” on page 127](#)

## About the BIOS Setup Utility

The Basic Input/Output System (BIOS) has a utility stored in the BIOS flash memory called the BIOS Setup Utility. The BIOS Setup Utility reports system information and allows user customization of the server BIOS settings. The customized BIOS settings are stored in the system’s battery-backed CMOS RAM. If the battery fails, causing the loss of customized settings, the BIOS settings default to the original state specified at the factory.

You can access BIOS Setup Utility locally using the multi-port cable and one of the following configurations:

- USB keyboard and mouse and a VGA monitor.
- A serial terminal emulator connected to the USB port.

---

**Note** – For information about using the multi-port cable, see [“Using the Multi-Port Cable” on page 77](#).

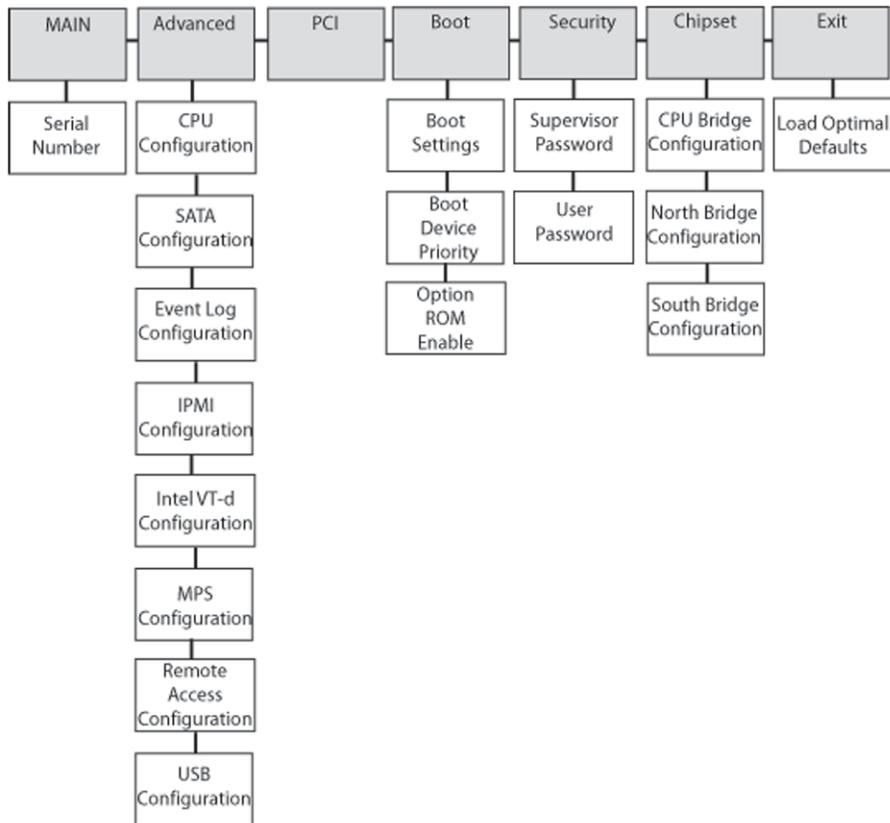
---

This section contains the following topics:

- “BIOS Setup Utility Screens Overview” on page 94
- “How to Configure the BIOS Using the BIOS Setup Utility” on page 95
- “BIOS Setup Menu Screens” on page 96

## BIOS Setup Utility Screens Overview

The following illustration shows the organization of the BIOS Setup Utility screens:



The following table summarizes the top-level BIOS setup screens.

Screen	Description
Main	General product information, including BIOS type, processor, memory, and time/date.
Advanced	Configuration information for the CPU processor, memory, IDE, Super IO, trusted computing, USB, PCI, MPS and other information.
PCI	Clears NVRAM during next server module boot.
Boot	Configure boot settings, boot device priority, and enable or disable option ROM.
Security	Set or change the user and supervisor passwords.
Chipset	Set or change the processor (CPU, North, South) bridge features.
Exit	Save changes and exit, discard changes and exit, discard changes, or load optimal defaults.

*Back to: “About the BIOS Setup Utility” on page 93*

## ▼ How to Configure the BIOS Using the BIOS Setup Utility

The BIOS Setup Utility contains both read-only information and settings that can be customized. Use this procedure to access the BIOS Setup Utility and customize settings.

**Before You Begin** See [“About the BIOS Setup Utility” on page 93](#).

- 1 Enter the BIOS Setup Utility by pressing the F2 key while the system is performing the power-on self-test (POST).**

---

**Tip** – Watch the screen for the prompt to press F2.

---

The main BIOS Setup menu screen appears.

- 2 Use the following keyboard keys to navigate the BIOS Setup Utility:**
  - Use the left and right arrow keys to select the main menu screens.
  - Use the up and down arrows, on the keyboard, to select an item within a screen.
- 3 Navigate to the item to be modified.**

Fields that can be configured or that provide access to a sublevel appear highlighted. All other fields are read only.

**4 Press Enter to select the item.**

A sublevel or a dialog box with the available option fields appears.

**5 Use the up or down arrow keys or the + or – keys to change a field.**

**6 When you are finished customizing BIOS settings, navigate to the Exit screen.**

**7 Select one of the exit options and press Enter.**

For example, to save the changes that you made, highlight the Save Changes and Exit option and press Enter.

When you exit the BIOS Setup Utility, the server boots. If you've made changes to BIOS settings, those changes are valid with the system boot.

**See Also** [“BIOS Setup Menu Screens” on page 96](#)

## BIOS Setup Menu Screens

---

**Note** – The screens shown are examples. The version numbers and the screen items and selections shown are subject to change over the life of the product.

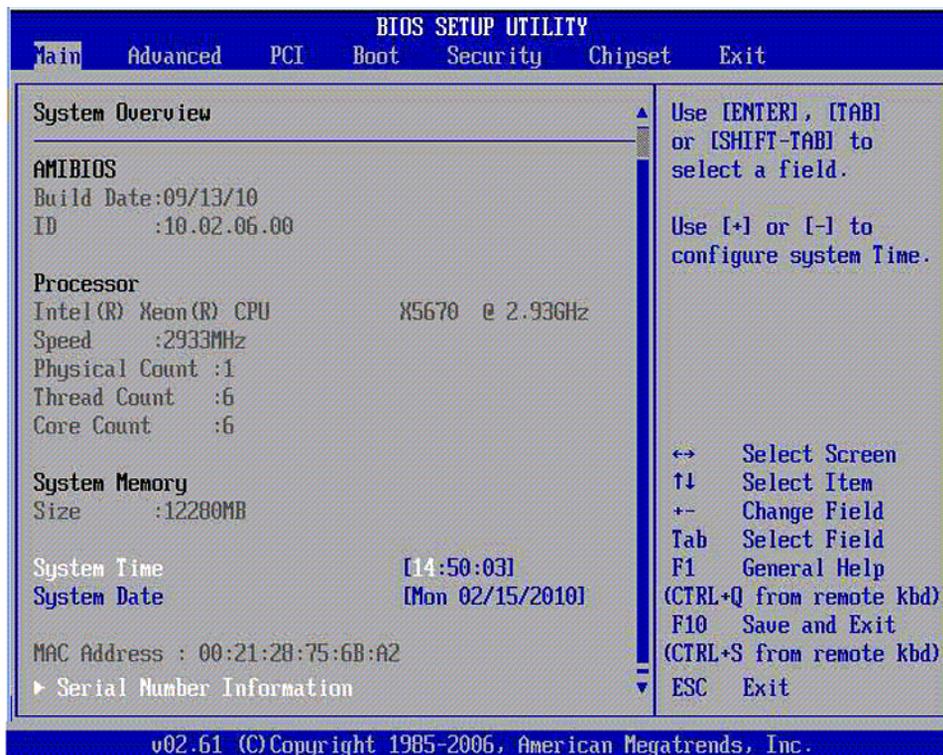
---

The following figures show sample Sun Blade X6275 M2 Server Module BIOS Setup Utility screens:

- [“BIOS Main Screens” on page 96](#)
- [“Advanced Screens” on page 99](#)
- [“PCI Menu Screens” on page 116](#)
- [“Boot Menu Screens” on page 116](#)
- [“Security Menu Screens” on page 120](#)
- [“Chipset Menu Screens” on page 121](#)
- [“Exit Menu Screens” on page 125](#)

## BIOS Main Screens

FIGURE 1 The BIOS Main Screen



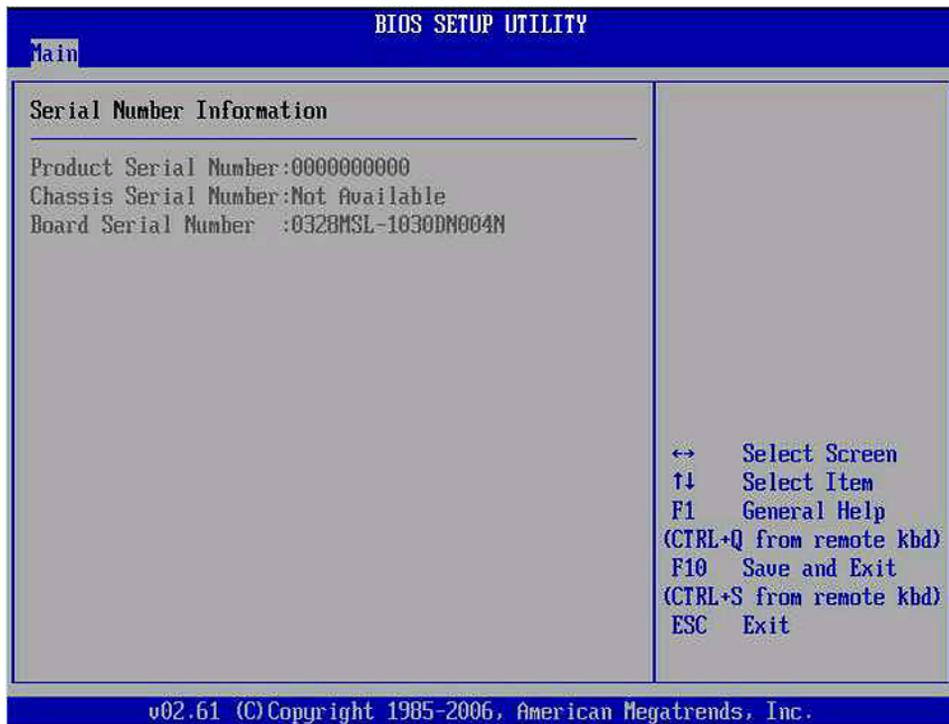
The BIOS Main screen allows you to set the system time and the system date.

In addition, the BIOS Main screen provides the following read-only information:

<b>BIOS Information</b>
Build Date
BIOS ID
<b>Processor Information</b>
CPU model
CPU speed
CPU count
Thread count

Processor Information
Core count
Server Information
Memory size
MAC address

FIGURE 2 The Serial Number Information Screen



Serial Number Information is a Main submenu screen that provides the following read-only information:

Serial Number Information
Product serial number

## Serial Number Information

Chassis serial number

Board serial number

## Advanced Screens

**Note** – The term BMC that might be displayed on some screens refers to the SP (service processor).

FIGURE 3 The Advanced Menu Screen

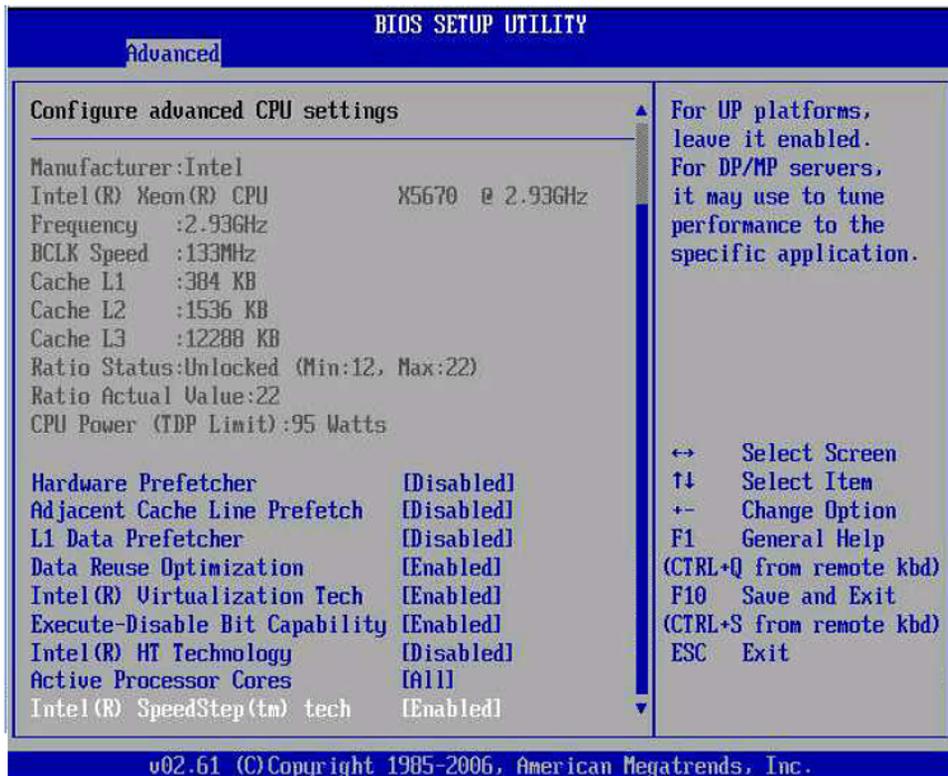


The Advanced screen provides access to the following configuration submenu screens:

- CPU Configuration (see [Figure 4](#).)
- On-board SATA configuration (see [Figure 5](#).)
- Event Log Configuration (see [Figure 8](#).)
- I/O Virtualization (see [Figure 9](#).)

- IPMI Configuration (see Figure 10.)
- Intel VT-d Configuration (see Figure 14.)
- MPS Configuration (see Figure 15.)
- Remote Access Configuration (see Figure 16.)
- Trusted Computing (see Figure 17.)
- USB Configuration (see Figure 18.)

FIGURE 4 The Advanced CPU Configuration Screen



The Configure advanced CPU settings is an Advanced submenu screen. The following table shows the read-only CPU-related information in the CPU Configuration screen.

---

CPU Configuration Read-Only Information

---

CPU manufacturer

CPU model and speed

---

---

**CPU Configuration Read-Only Information**

---

CPU operating frequency

PCLK speed

Cache L1, L2, L3 sizes

Ratio States Unblocked

Ratio Actual Value

CPU Power

---

The following table shows the configurable fields in the CPU Configuration screen.

---

**Note** – Hardware prefetchers work well in workloads that traverse array and other regular data structures. The hardware prefetcher options (Hardware Prefetcher, Adjacent Cache Line Prefetch, and L1 Data Prefetcher) are disabled by default and should be disabled when running applications that perform aggressive software prefetching or for workloads with limited cache. For example, memory-intensive applications with high bus utilization could see a performance degradation if hardware prefetching is enabled.

---

---

**CPU Configuration Configurable Fields**

---

Hardware Prefetcher

Adjacent Cache Line Prefetch

L1 Data Prefetcher

Data Reuse Optimization

Intel Virtualization Tech

Execute-Disable Bit Capability

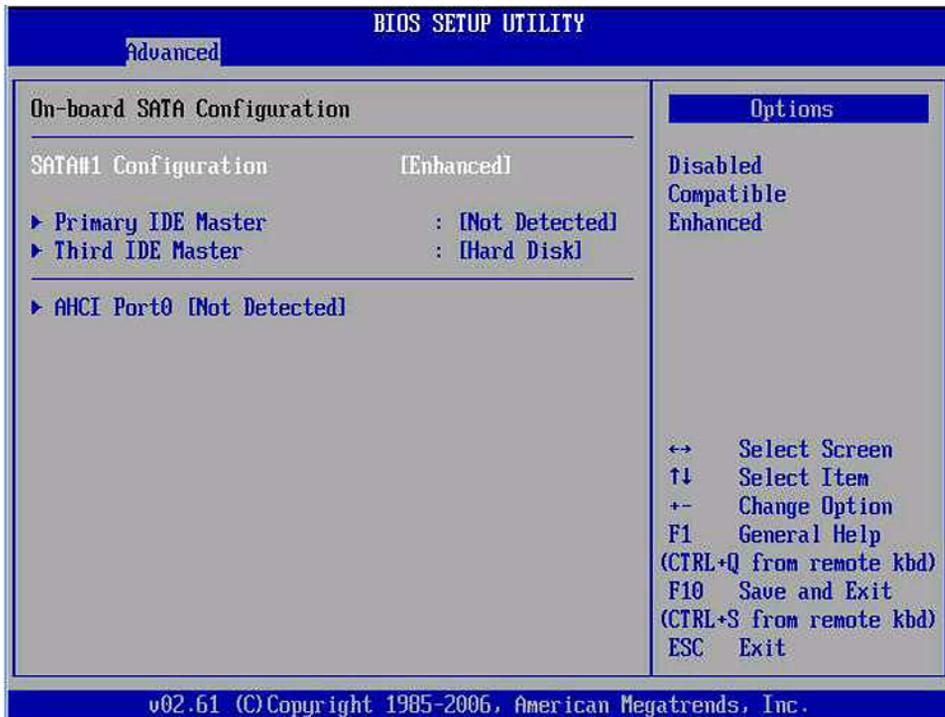
Intel HT Technology

Active Processor Cores

Intel SpeedStep tech

---

FIGURE 5 The Advanced On-Board SATA Configuration Screen



The On-Board SATA Configuration is an Advanced submenu screen. The following table lists the configurable fields in the On-Board SATA Configuration screen.

On-Board SATA Screen Configurable Fields
SATA
IDE Masters
ACHI port

The following table lists the read—only information in the On-Board SATA Configuration screen.

On-Board SATA Screen Read-Only Information
The IDE device
Device vendor

## On-Board SATA Screen Read-Only Information

Device size  
 LBA mode  
 Block mode  
 PIO mode  
 Async DMA  
 Ultra DMA  
 S.M.A.R.T. support

FIGURE 6 The Advanced IDE Master Configuration Screen

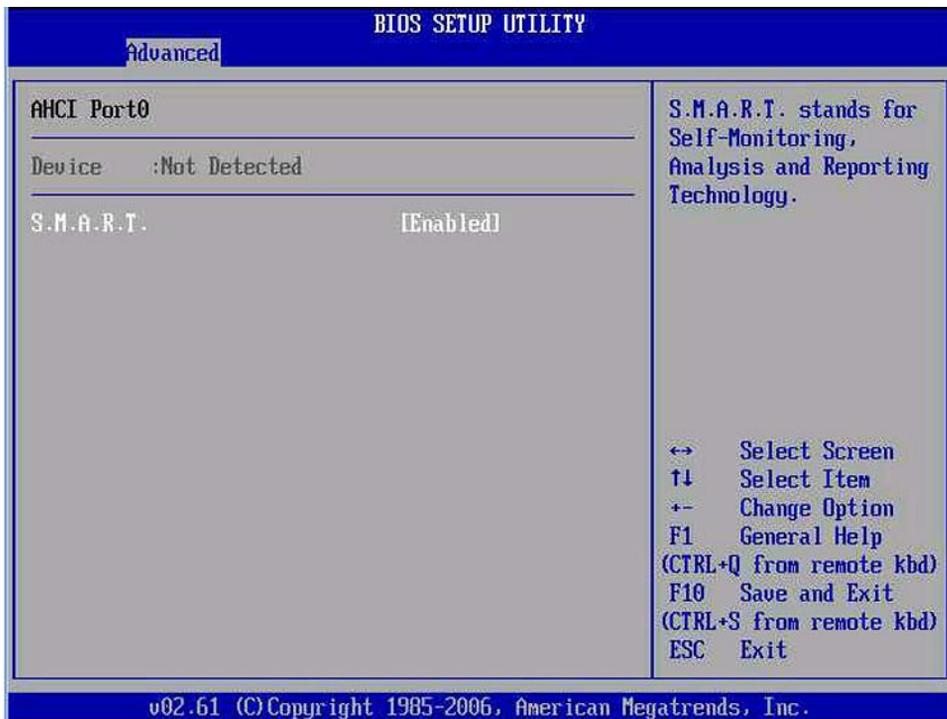


The IDE Master is an Advanced submenu screen. The following table lists the configurable fields of the IDE Master screen.

The IDE Master Configurable Fields

- LBA/Large mode
- Block (multi-sector transfer)
- PIO mode
- DMA mode
- S.M.A.R.T.
- 32-bit data transfer

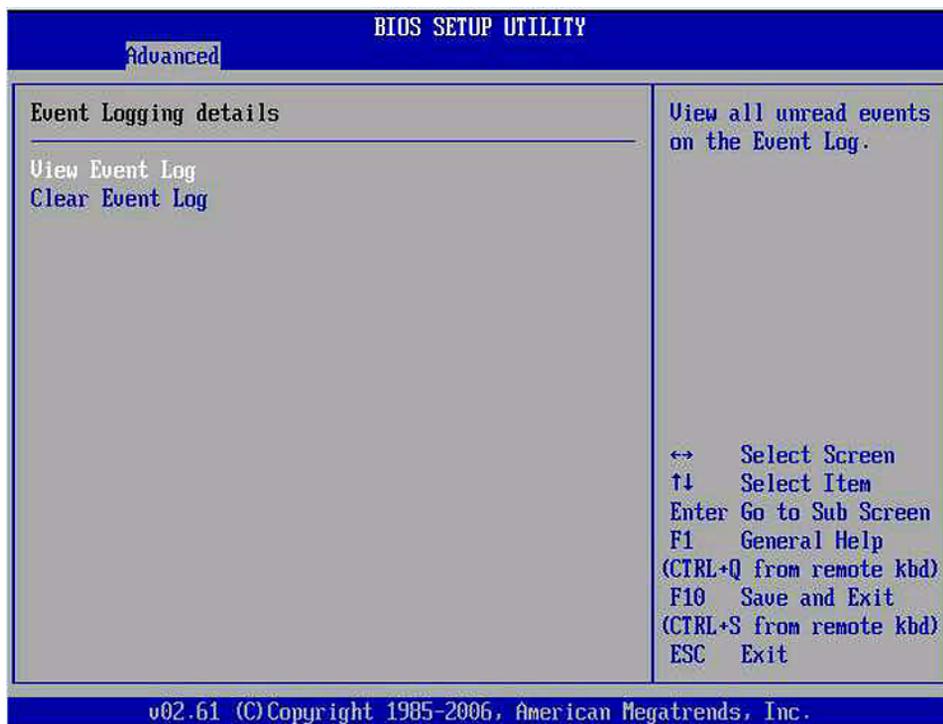
FIGURE 7 The Advanced AHCI Port Configuration Screen



AHCI Port screen is an Advanced submenu screen that allows you to:

- View the device type
- Configure S.M.A.R.T.

FIGURE 8 The Advanced Event Log Configuration Screen



The Event Logging details is an Advanced submenu screen that allows you to:

- View the event log
- Clear the event log

FIGURE 9 The Advanced I/O Virtualization Screen



The Configure I/O Virtualization is an Advanced submenu screen that allows you to enable or disable SR-IOV support.

FIGURE 10 The Advanced IPMI Configuration Screen



The IPMI Configuration is an Advanced submenu screen. The screen allows you to:

- View BMC System Event Log
- Clear BMC System Event Log
- Set LAN Configuration

FIGURE 11 The Advanced View BMC System Event Log Screen



The View BMC System Event Log is a IPMI Configuration submenu screen. The following table lists the read-only information of the View BMC System Event Log screen.

---

View BMC System Event Log Read-Only Information

---

System Event Log (SEL) entry number

SEL record ID

SEL record type

Event timestamp

Generator ID

Event message format version

Event sensor type

Event sensor number

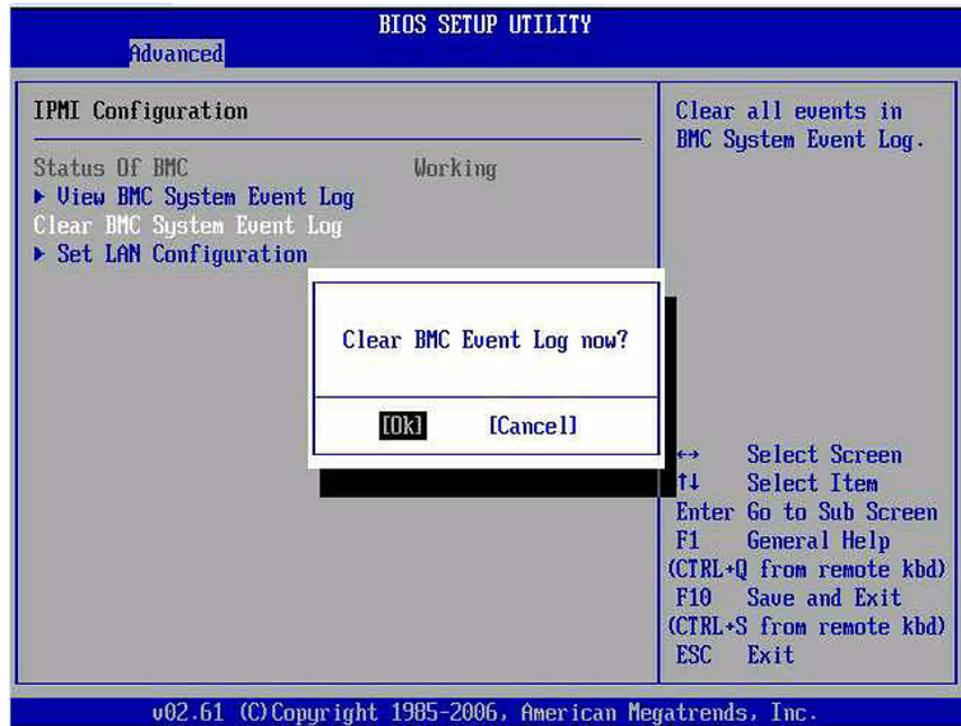
Event directory type

---

View BMC System Event Log Read-Only Information

Event data

FIGURE 12 The Clear BMC System Event Log Screen



The Clear BMC System Event Log is an IPMI Configuration screen allows you to clear the system event log.

FIGURE 13 The Set LAN Configuration Screen

BIOS SETUP UTILITY	
Advanced	
<b>LAN Configuration.</b>	
IP Assignment	DHCP
Current IP address in BMC:	010.006.072.245
Current MAC address in BMC:	00.21.28.75.6B.A3
Current Subnet Mask in BMC:	255.255.252.000
Current Gateway in BMC:	010.006.072.001
<b>Refresh</b>	
IP Address	010.006.072.245
Subnet Mask	255.255.252.000
Default Gateway	010.006.072.001
<b>Commit</b>	
<p>On first time into Setup Menu, if BMC Capable of DHCP, then DHCP will be shown as first option. Otherwise Static option will be shown.</p> <p>↔ Select Screen  ↑↓ Select Item  +- Change Option  F1 General Help  (CTRL+Q from remote kbd)  F10 Save and Exit  (CTRL+S from remote kbd)  ESC Exit</p>	
v02.61 (C) Copyright 1985-2006, American Megatrends, Inc.	

The LAN Configuration is an IPMI Configuration screen allows you to:

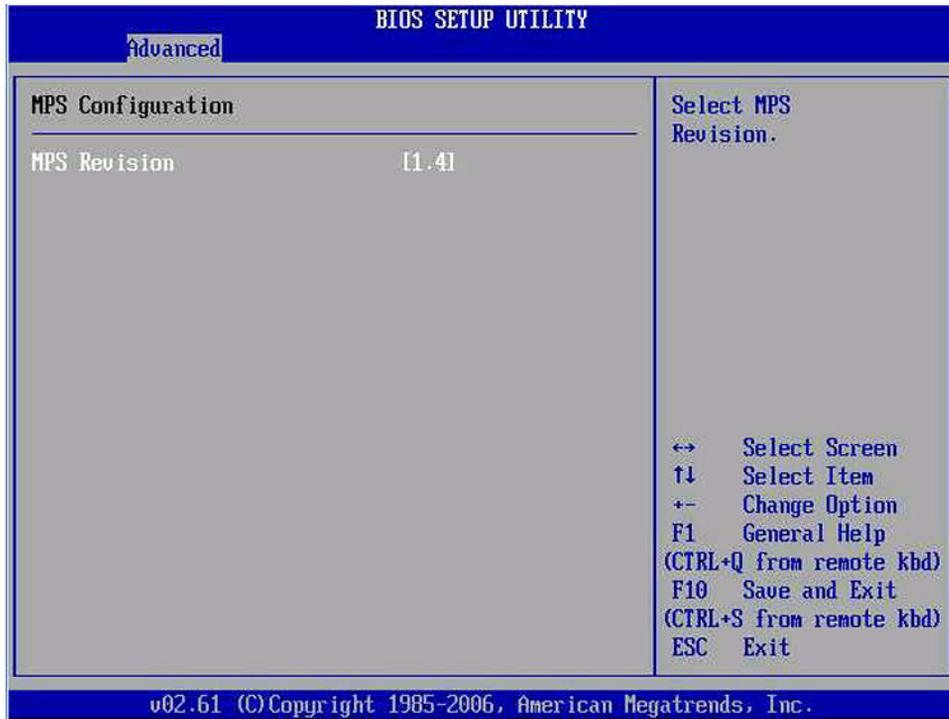
- Configure IP assignment (DHCP or Static)
- View the following BMC network information:
  - IP address
  - MAC address
  - Subnet mask
  - Gateway
- Refresh the network settings for the following BMC network information:
  - IP address
  - Subnet mask
  - Default gateway
- Commit changes

FIGURE 14 The Advanced VT-d Configuration Screen



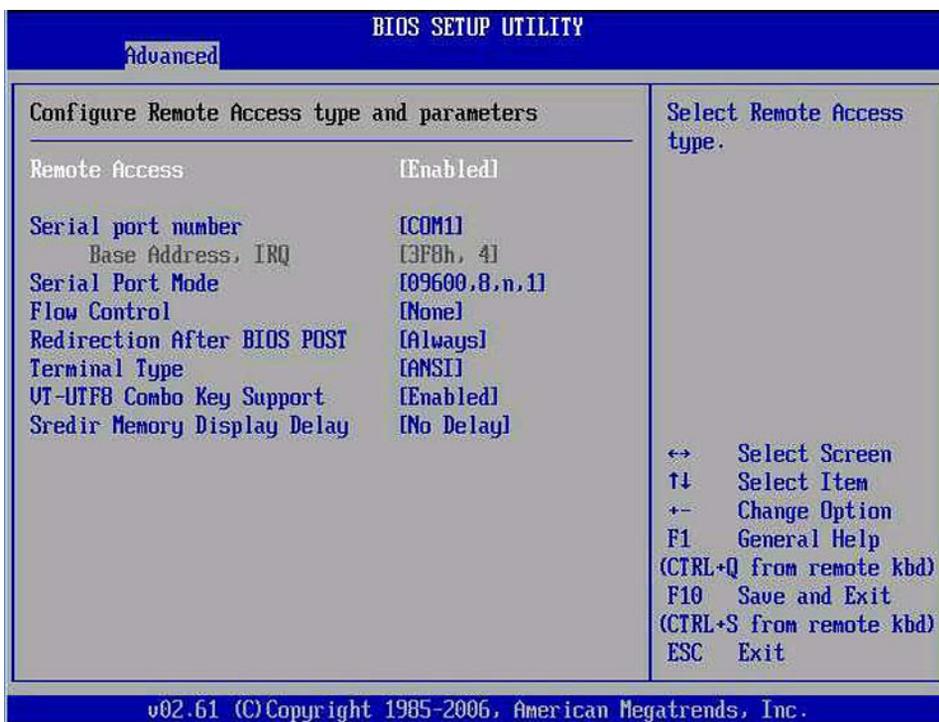
The Intel VT-d configuration is an Advanced submenu screen allows you to enable or disable Intel VT-d.

FIGURE 15 The Advanced MPS Configuration Screen



The MPS Configuration is an Advanced submenu screen allows you to select the MPS revision.

FIGURE 16 The Configure Remote Access Screen



The Configure Remote Access is an Advanced submenu screen. The following table lists the configurable fields in the Configure Remote Access screen.

---

Configure Remote Access Configurable Fields

---

Remote access

Serial port number

Serial port mode

Flow control

Redirection after BIOS POST

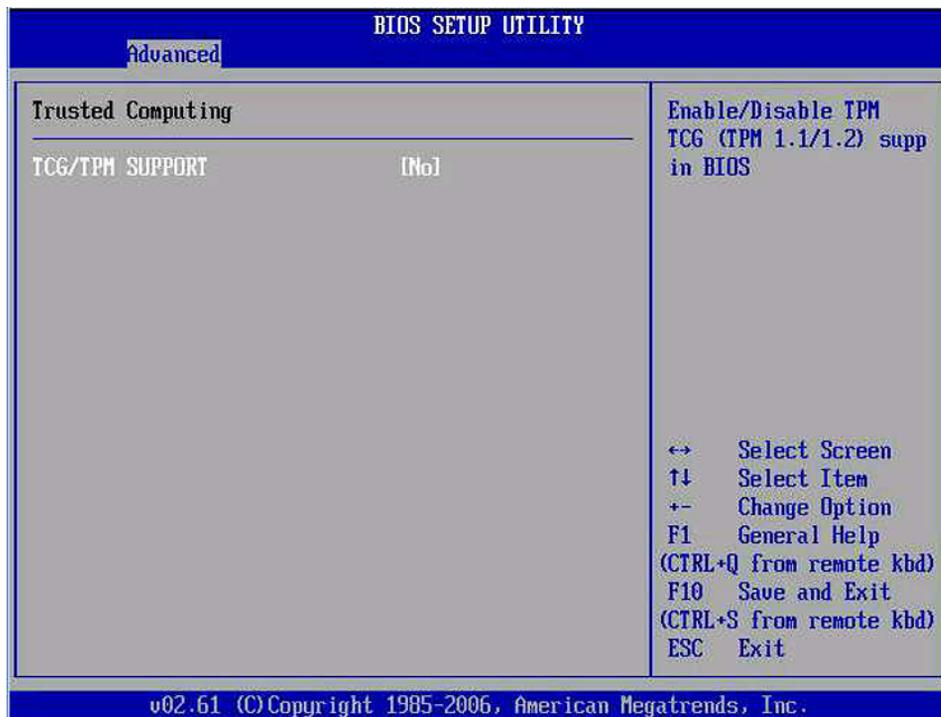
UT-UTF8 combo key support

Terminal type

Sredir memory display delay

---

FIGURE 17 The Trusted Computing Screen



Trusted Computing is an Advanced submenu screen that allows you to enable ICG/TPM support.

FIGURE 18 The USB Configuration Screen



The USB Configuration is an Advanced submenu screen. The following table lists the configurable fields of the USB Configuration screen.

---

**USB Configuration Fields**


---

EHCI controller 1 function

Dongle (multi-port cable) ports in full speed

Legacy USB 1.1 HC support

Internal USB port

USB dongle port A

USB dongle port B

Virtual USB 1.1 port

Virtual USB 2.0 port

Hotplug USB FDD support

---

## PCI Menu Screens

FIGURE 19 The Advanced PCI Settings



The PCI screen allows you to clear the NVRAM.

## Boot Menu Screens

FIGURE 20 The Boot Settings Screen



The following table lists the configurable fields of the Boot screen.

---

**Boot Screen Configurable Fields**


---

Configure boot settings
Set the boot device priority list
Enable Option ROM

---

FIGURE 21 The Boot Settings Configuration Screen



The Boot Settings Configuration is a Boot submenu screen. The following table lists the configurable fields of the Boot Settings Configuration screen.

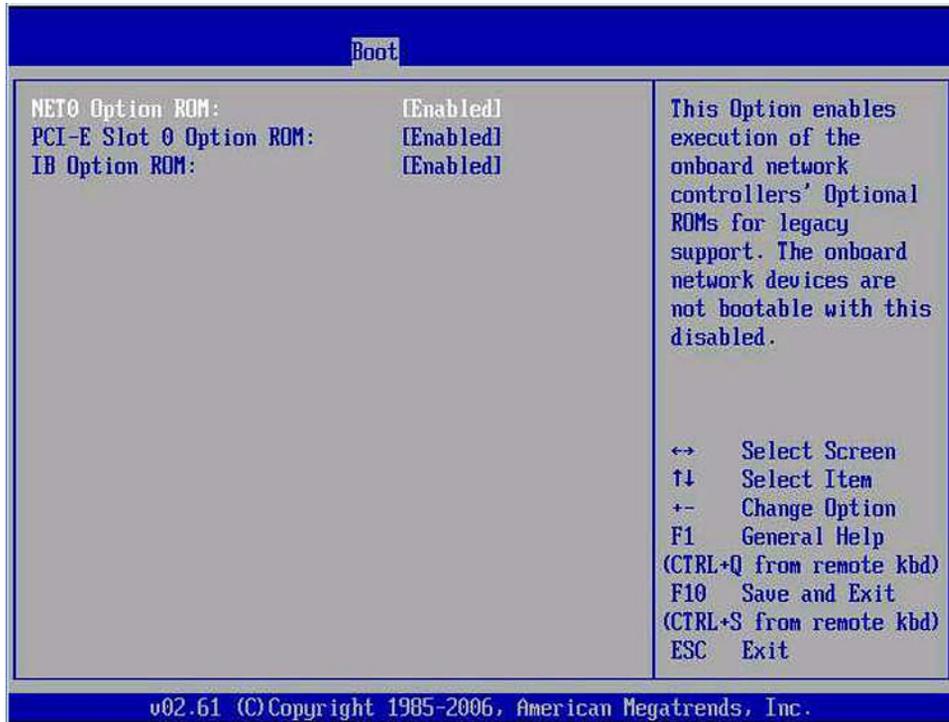
Boot Settings Configurable Fields
Quick boot
Quiet boot
Wait for F1 if error occurs
Retry boot list
IB gPXE boot first

FIGURE 22 The Boot Device Priority Screen



The Boot Device Priority is a Boot submenu screen that allows you to prioritize the server's boot-capable devices by arranging them in a hierarchical boot order list.

FIGURE 23 The Option ROM Enable Screen



The Option ROM Enable is a Boot submenu screen. The following table lists the configurable fields of the Option ROM Enable screen.

---

Option ROM Enable Configurable Fields

---

NET0 option ROM

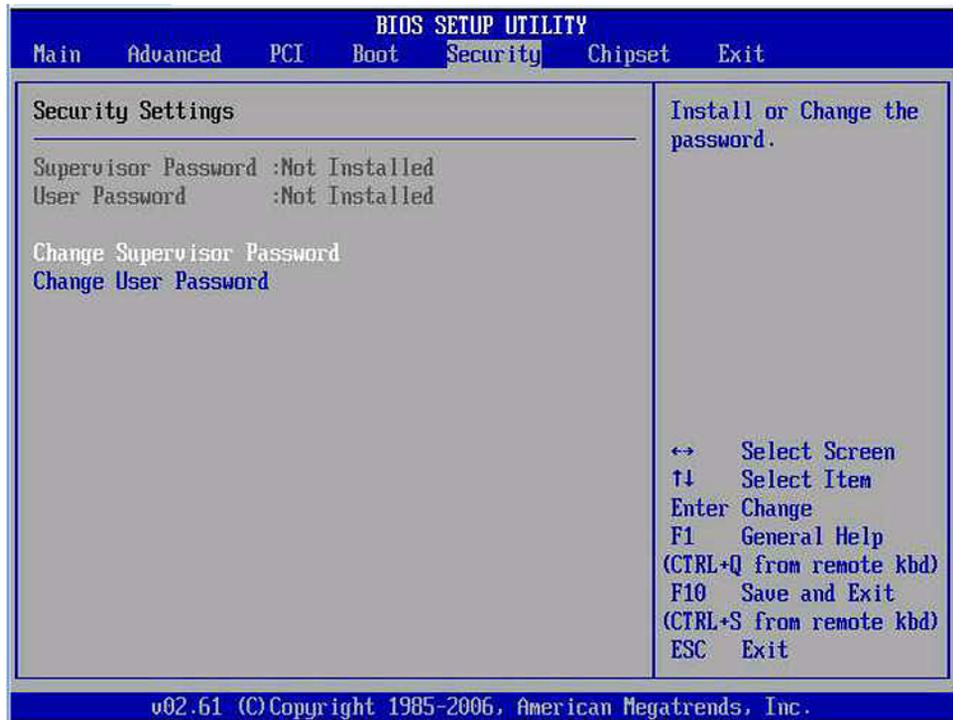
PCI-E slot 0 option ROM

IB option ROM

---

## Security Menu Screens

FIGURE 24 The Security Settings Screen



The Security Settings screen allows you to view and change the supervisor (administrator or root) and user passwords.

## Chipset Menu Screens

FIGURE 25 The Advanced Chipset Settings Screen



The following table lists the configurable options of the Advanced Chipset Settings screen.

Advanced Chipset Settings Configurable Fields
CPU bridge
North bridge
South bridge

FIGURE 26 The CPU Bridge Chipset Configuration Screen



The CPU Bridge Chipset Configuration is a Chipset submenu screen. The following table lists the read-only information of the CPU Bridge Chipset Configuration screen.

---

**CPU Bridge Chipset Configuration Read-Only Information**

---

CPU revision  
 Current QPI frequency  
 Current memory frequency

---

The following table lists the configurable fields of the CPU Bridge Chipset Configuration screen.

---

**CPU Bridge Chipset Configuration Fields**

---

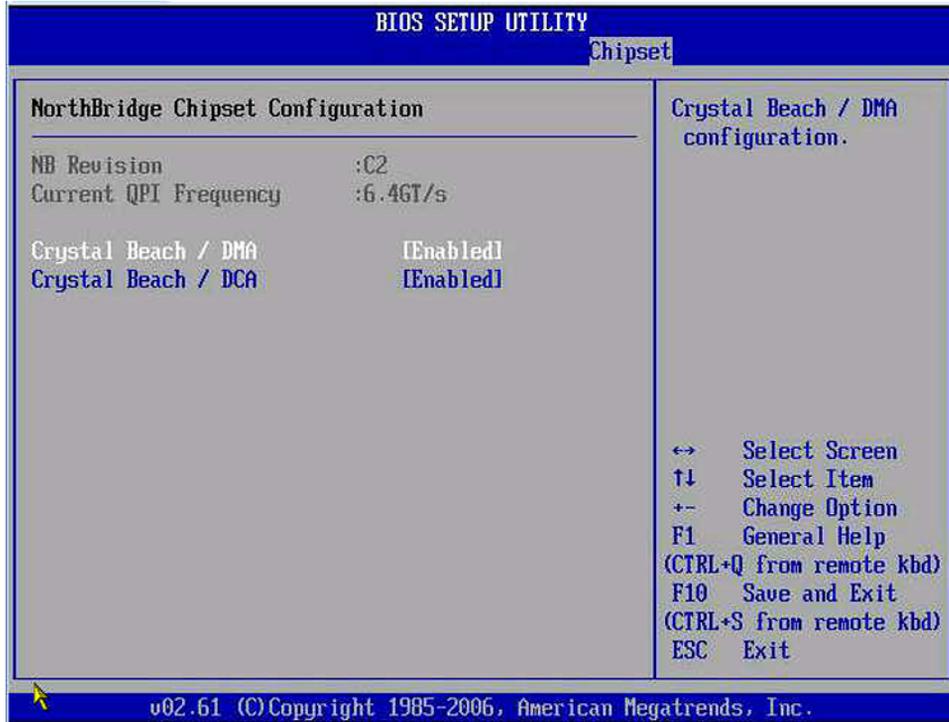
QPI L0s  
 QPI L1

---

## CPU Bridge Chipset Configuration Fields

Speed spectrum mode

FIGURE 27 The Northbridge Chipset Configuration Screen



The Northbridge Chipset Configuration is a Chipset submenu screen that allows you to view:

- Northbridge revision
- Current QPI frequency

In addition, Northbridge Chipset Configuration contains the following configurable fields:

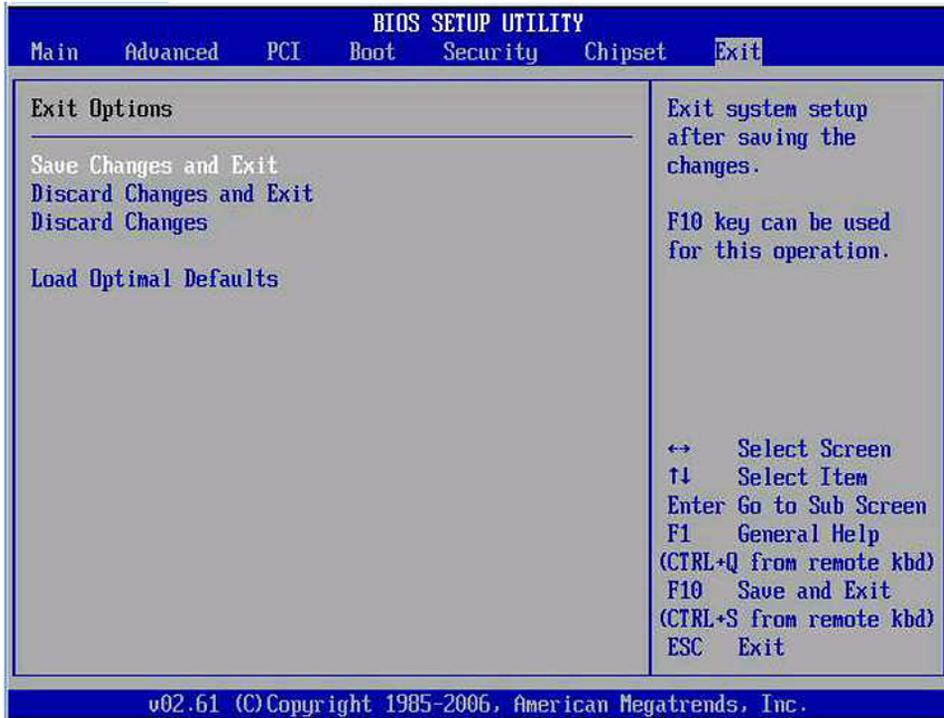
- Crystal Beach/DMA
- Crystal Beach/EMA

FIGURE 28 The South Bridge Chipset Configuration Screen



The Southbridge Chipset Configuration is a Chipset submenu screen that allows you to set the Power Restore policy.

## Exit Menu Screens



The Exit screen allows you to:

- Save changes and exit
- Discard changes and exit
- Discard changes
- Load optimal defaults

## ▼ How to Display FRUID Information

**Note** – This task is for Oracle Service personnel only.

### 1 Enter Service Mode.

The Service Mode prompt appears.

```
#
```

### 2 At the Service Mode command line, enter the following command:

```
# showpsnc
```

A list of FRU appears.

- See Also**
- [“How to Replace the Motherboard Assembly” on page 65](#)
  - [“How to Back Up FRU Information” on page 127](#)

## ▼ How to Back Up FRU Information

---

**Note** – This task is for Oracle Service personnel only.

---

### 1 Enter Service Mode.

The Service Mode prompt appears.

```
#
```

### 2 At the Service Mode command line, enter the following command:

```
# copypsnc PRIMARY BACKUP1
```

This command performs a backup of current TLI (Top Level Identifier) and ILOM records.

- See Also**
- [“How to Replace the Motherboard Assembly” on page 65](#)
  - [“How to Display FRUID Information” on page 126](#)

## Removing and Installing a Server Module Filler Panel

- [“How to Remove a Server Module Filler Panel” on page 127](#)
- [“How to Install the Server Module Filler Panel” on page 128](#)

## ▼ How to Remove a Server Module Filler Panel

- 1 Squeeze together the green release latch on the ejector lever.
- 2 Rotate the ejector lever outward away from the front of the filler panel until it is fully extended.
- 3 To partially remove the filler panel, pull it out of the chassis approximately 5–6 inches.
- 4 To remove, use your hands to pull the filler panel out of the chassis.

- See Also** [“How to Install the Server Module Filler Panel” on page 128](#)

## ▼ How to Install the Server Module Filler Panel

**1 Extend the filler panel ejector lever to its fully open position.**

To release the lever, squeeze the green latch and rotate the lever outwardly away from the front of the server module.

**2 Slide the filler panel into the slot until it stops.**

The filler panel is not yet flush with the front of the chassis.

**3 Ensure that the pawl on the end of the lever is aligned with the slot in the chassis sidewall.**

**4 Rotate the lever toward the front of the filler panel and push it flat against the filler panel until it locks into place.**

This action draws the filler module into that chassis setting it flush with the front of the chassis.

**See Also** [“How to Remove a Server Module Filler Panel” on page 127](#)

# Specifications

---

This section contains Sun Blade X6275 M2 Server Module server module specifications:

- [“Dimensions” on page 129](#)
- [“Environmental Specifications” on page 129](#)

## Dimensions

The Sun Blade X6275 M2 Server module form factor dimensions are listed below.

Specification	Value
Height	12.9 inches/327.2 mm
Width	1.8 inches/44.5 mm
Depth	20.1 inches/511.7 mm
Weight	Maximum: 20.6 lbs (9.4 kg), with twenty-four 4 GB low voltage DIMMs and four Intel Xeon EP processors installed

## Environmental Specifications

Specification	Value
Temperature (operating)	41 – 95°F 5 - 35° C
Temperature (storage)	-40 – 158°F -40 - 70° C
Humidity (operating)	10% – 90% non-condensing
Operating altitude (operating)	0 – 10,000 feet (0 – 3048 m)

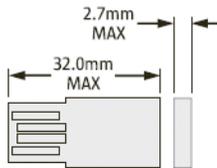
**Note** – System cooling might be affected by dust and contaminant buildup. It is recommended that systems be opened and checked approximately every six months, or more often in dirty operating environments. Check system heatsinks, fans, and air openings. If necessary, clean systems by brushing or blowing contaminants or carefully vacuuming contaminants from the system.

---

## USB Flash Drive Specifications

The following shows the length and thickness specification for the USB flash drive.

- Length: 32.0 mm Max.
- Thickness: 2.7 mm Max.



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---

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