

## **Sun Server X2-4 (formerly Sun Fire X4470 M2) Product Notes**

**ORACLE**

**Part No: E20790-28**  
September 2018



**Part No: E20790-28**

Copyright © 2017, 2018, Oracle and/or its affiliates. All rights reserved.

This software and related documentation are provided under a license agreement containing restrictions on use and disclosure and are protected by intellectual property laws. Except as expressly permitted in your license agreement or allowed by law, you may not use, copy, reproduce, translate, broadcast, modify, license, transmit, distribute, exhibit, perform, publish, or display any part, in any form, or by any means. Reverse engineering, disassembly, or decompilation of this software, unless required by law for interoperability, is prohibited.

The information contained herein is subject to change without notice and is not warranted to be error-free. If you find any errors, please report them to us in writing.

If this is software or related documentation that is delivered to the U.S. Government or anyone licensing it on behalf of the U.S. Government, then the following notice is applicable:

U.S. GOVERNMENT END USERS: Oracle programs, including any operating system, integrated software, any programs installed on the hardware, and/or documentation, delivered to U.S. Government end users are "commercial computer software" pursuant to the applicable Federal Acquisition Regulation and agency-specific supplemental regulations. As such, use, duplication, disclosure, modification, and adaptation of the programs, including any operating system, integrated software, any programs installed on the hardware, and/or documentation, shall be subject to license terms and license restrictions applicable to the programs. No other rights are granted to the U.S. Government.

This software or hardware is developed for general use in a variety of information management applications. It is not developed or intended for use in any inherently dangerous applications, including applications that may create a risk of personal injury. If you use this software or hardware in dangerous applications, then you shall be responsible to take all appropriate fail-safe, backup, redundancy, and other measures to ensure its safe use. Oracle Corporation and its affiliates disclaim any liability for any damages caused by use of this software or hardware in dangerous applications.

Oracle and Java are registered trademarks of Oracle and/or its affiliates. Other names may be trademarks of their respective owners.

Intel and Intel Xeon are trademarks or registered trademarks of Intel Corporation. All SPARC trademarks are used under license and are trademarks or registered trademarks of SPARC International, Inc. AMD, Opteron, the AMD logo, and the AMD Opteron logo are trademarks or registered trademarks of Advanced Micro Devices. UNIX is a registered trademark of The Open Group.

This software or hardware and documentation may provide access to or information about content, products, and services from third parties. Oracle Corporation and its affiliates are not responsible for and expressly disclaim all warranties of any kind with respect to third-party content, products, and services unless otherwise set forth in an applicable agreement between you and Oracle. Oracle Corporation and its affiliates will not be responsible for any loss, costs, or damages incurred due to your access to or use of third-party content, products, or services, except as set forth in an applicable agreement between you and Oracle.

**Access to Oracle Support**

Oracle customers that have purchased support have access to electronic support through My Oracle Support. For information, visit <http://www.oracle.com/pls/topic/lookup?ctx=acc&id=info> or visit <http://www.oracle.com/pls/topic/lookup?ctx=acc&id=trs> if you are hearing impaired.

**Référence: E20790-28**

Copyright © 2017, 2018, Oracle et/ou ses affiliés. Tous droits réservés.

Ce logiciel et la documentation qui l'accompagne sont protégés par les lois sur la propriété intellectuelle. Ils sont concédés sous licence et soumis à des restrictions d'utilisation et de divulgation. Sauf stipulation expresse de votre contrat de licence ou de la loi, vous ne pouvez pas copier, reproduire, traduire, diffuser, modifier, accorder de licence, transmettre, distribuer, exposer, exécuter, publier ou afficher le logiciel, même partiellement, sous quelque forme et par quelque procédé que ce soit. Par ailleurs, il est interdit de procéder à toute ingénierie inverse du logiciel, de le désassembler ou de le décompiler, excepté à des fins d'interopérabilité avec des logiciels tiers ou tel que prescrit par la loi.

Les informations fournies dans ce document sont susceptibles de modification sans préavis. Par ailleurs, Oracle Corporation ne garantit pas qu'elles soient exemptes d'erreurs et vous invite, le cas échéant, à lui en faire part par écrit.

Si ce logiciel, ou la documentation qui l'accompagne, est livré sous licence au Gouvernement des Etats-Unis, ou à quiconque qui aurait souscrit la licence de ce logiciel pour le compte du Gouvernement des Etats-Unis, la notice suivante s'applique :

U.S. GOVERNMENT END USERS: Oracle programs, including any operating system, integrated software, any programs installed on the hardware, and/or documentation, delivered to U.S. Government end users are "commercial computer software" pursuant to the applicable Federal Acquisition Regulation and agency-specific supplemental regulations. As such, use, duplication, disclosure, modification, and adaptation of the programs, including any operating system, integrated software, any programs installed on the hardware, and/or documentation, shall be subject to license terms and license restrictions applicable to the programs. No other rights are granted to the U.S. Government.

Ce logiciel ou matériel a été développé pour un usage général dans le cadre d'applications de gestion des informations. Ce logiciel ou matériel n'est pas conçu ni n'est destiné à être utilisé dans des applications à risque, notamment dans des applications pouvant causer un risque de dommages corporels. Si vous utilisez ce logiciel ou ce matériel dans le cadre d'applications dangereuses, il est de votre responsabilité de prendre toutes les mesures de secours, de sauvegarde, de redondance et autres mesures nécessaires à son utilisation dans des conditions optimales de sécurité. Oracle Corporation et ses affiliés déclinent toute responsabilité quant aux dommages causés par l'utilisation de ce logiciel ou matériel pour des applications dangereuses.

Oracle et Java sont des marques déposées d'Oracle Corporation et/ou de ses affiliés. Tout autre nom mentionné peut correspondre à des marques appartenant à d'autres propriétaires qu'Oracle.

Intel et Intel Xeon sont des marques ou des marques déposées d'Intel Corporation. Toutes les marques SPARC sont utilisées sous licence et sont des marques ou des marques déposées de SPARC International, Inc. AMD, Opteron, le logo AMD et le logo AMD Opteron sont des marques ou des marques déposées d'Advanced Micro Devices. UNIX est une marque déposée de The Open Group.

Ce logiciel ou matériel et la documentation qui l'accompagne peuvent fournir des informations ou des liens donnant accès à des contenus, des produits et des services émanant de tiers. Oracle Corporation et ses affiliés déclinent toute responsabilité ou garantie expresse quant aux contenus, produits ou services émanant de tiers, sauf mention contraire stipulée dans un contrat entre vous et Oracle. En aucun cas, Oracle Corporation et ses affiliés ne sauraient être tenus pour responsables des pertes subies, des coûts occasionnés ou des dommages causés par l'accès à des contenus, produits ou services tiers, ou à leur utilisation, sauf mention contraire stipulée dans un contrat entre vous et Oracle.

**Accès aux services de support Oracle**

Les clients Oracle qui ont souscrit un contrat de support ont accès au support électronique via My Oracle Support. Pour plus d'informations, visitez le site <http://www.oracle.com/pls/topic/lookup?ctx=acc&id=info> ou le site <http://www.oracle.com/pls/topic/lookup?ctx=acc&id=trs> si vous êtes malentendant.

# Contents

---

<b>Using This Documentation</b> .....	9
<b>1 Sun Server X2-4 Product Notes</b> .....	11
Important Operating Notes .....	11
Server Security, Software Releases, and Critical Patch Updates .....	12
▼ IMPORTANT - Install Latest OS Updates, Patches, and Firmware .....	13
Changes to TLSv1.1 Configuration Property as of ILOM 4.0.3.x .....	14
Oracle ILOM File Transfer Using URI Fails if Target Password Contains Certain Special Characters (25917655) .....	14
Diagnosing SAS Data Path Failures on Servers Using MegaRAID Disk Controllers .....	15
Deprecation Notice for Oracle ILOM IPMI 2.0 Management Service .....	16
Resolving Warning Messages for Custom CA and Self-Signed SSL Certificates .....	17
Oracle ILOM License Information .....	18
Oracle ILOM Enhancement Allows Enabling IPv4 only, IPv6 only, or Dual Stack .....	18
Downloading an OS or Software Applications .....	19
Physical Media Requests Are No Longer Supported .....	20
Sun Server X2-4 Name Change .....	20
Supported Operating Systems .....	20
Oracle Unbreakable Enterprise Kernel for Linux .....	22
Supported Firmware and Software .....	23
Supported Firmware in Software Releases .....	23
Firmware Updates .....	24
Supported Diagnostics .....	25
Supported Software .....	25
Supported Memory Configurations .....	25
Supported PCIe Cards .....	26

Quantity and Slot Restrictions .....	26
Minimum Firmware Revisions for PCIe Cards .....	27
Sun Flash Accelerator F20 PCIe Card Requirements .....	28
Card Placement and Cooling .....	28
ESM Replacement Interval .....	29
Internal Sun Storage 6Gb SAS PCIe RAID HBA Requirements .....	30
Sun Storage 10GbE FCoE PCIe Low Profile Dual Port CNA and OS Support .....	30
Oracle x86 Products Accessibility .....	30
Hardware Accessibility .....	30
Oracle ILOM Accessibility .....	31
Oracle Hardware Management Pack Accessibility .....	32
BIOS Accessibility .....	33
Documentation Accessibility .....	33
Resolved Issues .....	34
Known Open Issues .....	38
Hardware Known Issue .....	38
BIOS Known Issues .....	39
Oracle Solaris Known Issues .....	40
Oracle Linux, SUSE Linux Enterprise Server (SLES), and Red Hat Enterprise Linux (RHEL) Known Issues .....	41
Oracle VM Known Issue .....	46
Windows Known Issues .....	46
Oracle Integrated Lights Out Manager (ILOM) Known Issues .....	48
Oracle Hardware Installation Assistant Known Issues .....	49
Documentation Known Issues .....	51
Broken Links in Sun Server X2-4 Documentation Library .....	51
Oracle ILOM Documentation .....	53
Antistatic Wrist Straps Are Not Included With All CRUs and FRUs .....	53
<b>2 Getting Server Firmware and Software .....</b>	<b>55</b>
Firmware and Software Updates .....	55
Options for Accessing Firmware and Software Updates .....	56
Software Releases .....	56
Getting Updates From Oracle Hardware Installation Assistant or My Oracle Support .....	57
▼ Download Firmware and Software Using My Oracle Support .....	57

Installing Updates Using Other Methods .....	58
Oracle Support .....	59





## Using This Documentation

---

- **Overview** –Provides important operating information and resolved and known issues for Oracle's Sun Server X2-4.
- **Audience** – Technicians, system administrators, and authorized service providers.
- **Required knowledge** – Advanced experience troubleshooting and replacing hardware.

## Product Documentation Library

Documentation and resources for this product and related products are available at [http://docs.oracle.com/cd/E20781\\_01/index.html](http://docs.oracle.com/cd/E20781_01/index.html).

## Feedback

Provide feedback about this documentation at <https://www.oracle.com/goto/docfeedback>.



# ◆◆◆ CHAPTER 1

## Sun Server X2-4 Product Notes

---

This document lists resolved and known issues related to the Sun Server X2-4 from Oracle. Each issue is associated with a Bug ID number that is provided as a reference for Oracle Service personnel. When necessary, Service personnel can refer to the Bug ID number to obtain further information.

These product notes include the following information.

- [“Important Operating Notes” on page 11](#)
- [“Supported Operating Systems” on page 20](#)
- [“Supported Firmware and Software” on page 23](#)
- [“Supported Memory Configurations” on page 25](#)
- [“Supported PCIe Cards” on page 26](#)
- [“Oracle x86 Products Accessibility” on page 30](#)
- [“Resolved Issues” on page 34](#)
- [“Known Open Issues” on page 38](#)
- [“Documentation Known Issues” on page 51](#)
- [Chapter 2, “Getting Server Firmware and Software”](#)

### Important Operating Notes

This section provides important information related to the operation of the server.

- [“Server Security, Software Releases, and Critical Patch Updates” on page 12](#)
- [“IMPORTANT - Install Latest OS Updates, Patches, and Firmware” on page 13](#)
- [“Changes to TLSv1.1 Configuration Property as of ILOM 4.0.3.x” on page 14](#)
- [“Oracle ILOM File Transfer Using URI Fails if Target Password Contains Certain Special Characters \(25917655\)” on page 14](#)
- [“Diagnosing SAS Data Path Failures on Servers Using MegaRAID Disk Controllers” on page 15](#)

- [“Deprecation Notice for Oracle ILOM IPMI 2.0 Management Service”](#) on page 16
- [“Resolving Warning Messages for Custom CA and Self-Signed SSL Certificates”](#) on page 17
- [“Oracle ILOM License Information”](#) on page 18
- [“Oracle ILOM Enhancement Allows Enabling IPv4 only, IPv6 only, or Dual Stack”](#) on page 18
- [“Downloading an OS or Software Applications”](#) on page 19
- [“Physical Media Requests Are No Longer Supported”](#) on page 20
- [“Sun Server X2-4 Name Change”](#) on page 20

## Server Security, Software Releases, and Critical Patch Updates

To ensure continued security of your system, Oracle strongly recommends that you apply the latest Software Releases. Server Software Releases include Oracle ILOM, BIOS, and other firmware updates, often referred to as “patches.” Oracle publishes these patches regularly on the My Oracle Support site. Applying these patches helps ensure optimal system performance, security, and stability. You can identify the latest Software Release for your system at: <http://www.oracle.com/technetwork/systems/patches/firmware/release-history-jsp-138416.html>

To download a Software Release, go to My Oracle Support at: <https://support.oracle.com>

Oracle notifies customers about security vulnerability fixes for all its products four times a year through the Critical Patch Update (CPU) program. Customers should review the CPU advisories to ensure that the latest software release updates are applied to their Oracle products. Note that updates for Engineered Systems are specifically published for a specific Engineered Systems product (that is, you need not look at specific updates for individual software components included in your Engineered System). For more information about the Oracle CPU program, go to: <http://www.oracle.com/technetwork/topics/security/alerts-086861.html>

Oracle also recommends that you update to the latest operating system release when it becomes available. Although a minimum operating system release is supported, updating to the latest OS release ensures that you have the most up-to-date software and security patches. To confirm that you have the latest OS release, refer to the Oracle Hardware Compatibility Lists. See [“Supported Operating Systems”](#) on page 20.

For details about the current system software update, see: [“IMPORTANT - Install Latest OS Updates, Patches, and Firmware”](#) on page 13

## ▼ IMPORTANT - Install Latest OS Updates, Patches, and Firmware

Some product features are enabled only when the latest versions of operating systems, patches, and firmware are installed. To retain optimal performance, security, and stability, you must install the latest available operating systems, patches, and firmware.

System Software Release 2.2.0 is associated with system firmware version 4.0.4.20. Newer versions have either a higher number or have a letter added to the number. For example, a future Software Release might be associated with system firmware 4.0.4.20.a.

To verify that the server firmware version is a minimum of 4.0.4.20 or higher:

1. **Use Oracle ILOM to check your system firmware version.**
  - **From the web interface, click System Information > Summary, then view the System Firmware Version in the General Information table.**
  - **From the CLI, type: `show /System/Firmware Of version`.**

For more details, refer to information about viewing system information and inventory in the *Oracle ILOM Administrators Guide for Configuration and Maintenance*, which is available at <https://www.oracle.com/goto/ilom/docs>.
2. **Ensure that the server firmware version is at the minimum required version, shown above, or a subsequent release, if available.**
3. **If the required firmware (or newer) is not installed:**
  - a. **Download the firmware from My Oracle Support at: <https://support.oracle.com>**

For more information, see: “[Supported Firmware and Software](#)” on page 23
  - b. **Install the downloaded firmware.**

Refer to the information about performing firmware updates in the *Oracle ILOM Administrators Guide for Configuration and Maintenance*, which is available at <https://www.oracle.com/goto/ilom/docs>. Ensure that you perform the preparatory steps described in that document before updating the firmware.

---

**Note** - Occasionally after installing the firmware, the Oracle ILOM web interface cannot display the power state correctly on the power control page. To correct this problem, clear your browser cache before logging in to the Oracle ILOM web interface.

---

## Changes to TLSv1.1 Configuration Property as of ILOM 4.0.3.x

### Important Operating Note

**Present Behavior:** The Oracle ILOM TLSv1.1 configuration property is Enabled by default.

**Future Behavior:** The following changes will occur to the TLSv1.1 configuration property sometime after the Oracle ILOM 4.0.3 firmware release:

- First Change: The TLSv1.1 configuration property will default to Disabled in the next minor release of Oracle ILOM.
- Second Change: The TLSv1.1 configuration property will no longer be supported and will be removed from all Oracle ILOM user interfaces in the next major release of Oracle ILOM.

For future updates regarding TLSv1.1 support in Oracle ILOM, refer to latest release information in the Oracle ILOM Feature Updates and Release Notes for Firmware 4.0.x at [https://docs.oracle.com/cd/E81115\\_01/index.html](https://docs.oracle.com/cd/E81115_01/index.html).

## Oracle ILOM File Transfer Using URI Fails if Target Password Contains Certain Special Characters (25917655)

**This problem is fixed in System Software Release 1.10.0.**

When using Oracle ILOM to transfer files using a Uniform Resource Identifier (URI), the transfer fails if the target host's password contains any of the following special characters:

# ; ?

Examples of these transfers include using host storage redirection, and backing up and restoring BIOS and SP configurations.

### Workaround

Use a target host password that does not include any of the indicated special characters.

## Diagnosing SAS Data Path Failures on Servers Using MegaRAID Disk Controllers

### Important Operating Note

On Oracle x86 servers using MegaRAID disk controllers, Serial Attached SCSI (SAS) data path errors can occur. To triage and isolate a data path problem on the SAS disk controller, disk backplane (DBP), SAS cable, SAS expander, or hard disk drive (HDD), gather and review the events in the disk controller event log. Classify and analyze all failure events reported by the disk controller based on the server SAS topology.

To classify a MegaRAID disk controller event, gather and parse the MegaRAID disk controller event logs either by running the StorCLI command.

For example, manually gather and parse the controller event log by using the StorCLI command. At the root prompt, type:

```
root# ./storcli64/c0 show events file=event.log
Controller=0
Status=Success
```

---

**Note** - Use the existing name of the event log as the name for the disk controller event log. This produces a MegaRAID controller event log with the given file name event.log.

---

To show drive and slot errors separately, at the root prompt, type:

```
root# /opt/MegaRAID/storcli/storcli64 /c0 /eall /sall show errorcounters
Controller=0
Status=Success
Description=Show Drive/Cable Error Counters Succeeded.
```

### Error Counters:

Drive	Error Counter for Drive Error	Error Counter for Slot
/c0/e8/s0	0	0
/c0/e8/s1	0	0

Drive	Error Counter for Drive Error	Error Counter for Slot
/c0/e8/s2	0	0
/c0/e8/s3	0	0
/c0/e8/s4	0	0
/c0/e8/s5	0	0
/c0/e8/s12	0	0
/c0/e8/s13	0	0

These error counters reflect drive or slot errors separately.

The following SCSI sense key errors found in the event log in SAS data path failures indicate a SAS data path fault:

```
B/4B/05 :SERIOUS: DATA OFFSET ERROR
B/4B/03 :SERIOUS: ACK/NAK TIMEOUT
B/47/01 :SERIOUS: DATA PHASE CRC ERROR DETECTED
B/4B/00 :SERIOUS: DATA PHASE ERROR
```

A communication fault between the disk and the host bus adapter causes these errors. The presence of these errors, even on a single disk, means there is a data path issue. The RAID controller, SAS cables, SAS expander, or disk backplane might be causing the interruption to the communication in the path between the RAID controller and the disks.

Oracle Service personnel can find more information about the diagnosis and triage of hard disk and SAS data path failures on x86 servers at the My Oracle Support web site: <https://support.oracle.com>. Refer to the Knowledge Article Doc ID 2161195.1. If there are multiple, simultaneous disk problems on an Exadata server, Oracle Service personnel can refer to Knowledge Article Doc ID 1370640.1.

## Deprecation Notice for Oracle ILOM IPMI 2.0 Management Service

**Present Behavior:** IPMI 2.0 Management Sessions - Enabled (default setting).

**Future Behavior:** The following IPMI Management Service changes will occur in a future Oracle ILOM firmware release after firmware version 4.0.2.

**First IPMI Service Support Change:** The default configuration property for IPMI 2.0 Sessions will change from Enabled to Disabled. Clients relying on Oracle ILOM IPMI 2.0 session support by default will no longer be able to communicate with Oracle ILOM.



To enable IPMI communication with Oracle ILOM, perform one of the following:

- Use the Oracle IPMI TLS service and interface. For more information, refer to *IPMI TLS Service and Interface* in the *Oracle ILOM Protocol Management Reference SNMP and IPMI Firmware Release 4.0.x*.

- or -

- Manually enable the configuration property for IPMI 2.0 Session. For details, refer to *IPMI Service Configuration Properties* in the *Oracle ILOM Administrator's Guide for Configuration and Maintenance Firmware Release 4.0.x*.

**Second IPMI Service Support Change:** Removal of IPMI 2.0 client support.

IPMI 2.0 clients *will no longer be able* to communicate with Oracle ILOM. Clients relying on IPMI communication will need to use the IPMI TLS service and interface. For more information, refer to *IPMI TLS Service and Interface* in the *Oracle ILOM Protocol Management Reference SNMP and IPMI Firmware Release 4.0.x*.

For future updates about IPMI Management Service support in Oracle ILOM, refer to the latest firmware release information published in the *Oracle ILOM Feature Updates and Release Notes Firmware Release 4.0.x*.

## Resolving Warning Messages for Custom CA and Self-Signed SSL Certificates

The following information applies to the users of the Oracle ILOM Remote System Console and the Oracle ILOM Remote System Console Plus.

A warning message occurs when the Java client is not properly configured to validate the Secure Sockets Layer (SSL) certificate that is currently being used by Oracle ILOM. This validation behavior applies to Oracle ILOM firmware version 3.2.8 or later for systems using the default self-signed SSL certificate and to Oracle ILOM firmware version 3.2.10 and later for systems using a Custom Certification Authority (CA) SSL certificate.

To resolve the SSL warning message, refer to the applicable sections noted below in the Oracle ILOM Administrator's Guide for Configuration and Maintenance Firmware Release 4.0.x, which is available at: <https://www.oracle.com/goto/ilom/docs>

- *Warning Messages for Self-Signed SSL Certificate*
- *Resolving Warning Messages for Custom Certification Authority (CA) SSL Certificate*

## Oracle ILOM License Information

For Oracle ILOM 4.0.x license information, refer to the *Licensing Information User Manual Oracle ILOM Firmware Release 4.0.x* at: [http://docs.oracle.com/cd/E81115\\_01/index.html](http://docs.oracle.com/cd/E81115_01/index.html)

The Sun Server X2-4 with Oracle ILOM 4.0.x uses the Debian software that is also used in Oracle ILOM 3.2.x. For license information, refer to the *Licensing Information User Manual Oracle ILOM Firmware Release 3.2.x* at: [https://docs.oracle.com/cd/E37444\\_01/index.html](https://docs.oracle.com/cd/E37444_01/index.html)

## Oracle ILOM Enhancement Allows Enabling IPv4 only, IPv6 only, or Dual Stack

Newer versions of Oracle ILOM support the ability to configure an IPv4 network connection or a dual-stack (IPv4 and IPv6) network connection. Oracle ILOM's enhanced network connectivity properties support the ability to configure a static IPv6 gateway address and any of the following type of network connections: *IPv4 only*, *IPv6 only*, or *dual-stack (IPv4 and IPv6 enabled)*.

The following web and command-line interface (CLI) instructions provide details for viewing and modifying the network settings that are assigned to the SP.

### To modify the SP network settings from the Oracle ILOM web interface, do the following:

1. Log in to Oracle ILOM as an Administrator.
2. Click ILOM Administration > Connectivity > Network.
3. Modify the settings on the Network Settings page as required.  
For further details about how to configure the properties on the Network Settings page, click the *More Details* link.
4. Click Save to save your network property changes in Oracle ILOM.

---

**Note** - All user sessions on the SP are terminated upon modifying and saving IP network property changes. To log back in to Oracle ILOM, use the newly assigned service processor IP address.

---

### To modify the SP network settings from the Oracle ILOM CLI, do the following:

1. Log in to Oracle ILOM as an Administrator.

2. To view the assigned IPv4 and IPv6 network settings on the SP, perform the following:

For IPv4, type: `show /SP/network`

For IPv6, type: `show /SP/network/ipv6`

3. To view the descriptions about each IPv4 and IPv6 network property, perform the following:

For IPv4, type: `help /SP/network`

For IPv6, type: `help /SP/network/ipv6`

4. To modify the IPv4 and IPv6 network properties on the SP, issue the set command.

IPv4 Example:

```
set /SP/network state=enabled|ipv4-only|ipv6-only|disabled pendingipdiscovery=static|
dhcp pendingipaddress=value pendingipgateway=value pendingipnetmask=value
```

IPv6 Example:

```
set /SP/network/ipv6 state=enabled|disabled
pending_static_ipaddress=value/subnet_mask_value pending_static_ipgatewayaddress=value
```

---

**Note** - A dual-stack network connection is enabled when both the IPv4 and IPv6 State properties are set to enabled. By default, Oracle ILOM arrives out-of-the-box with network settings enabled for a dual stack (IPv4 and IPv6) network connection. If the IPv4 State property is enabled (`/SP/network state=enabled`) and the IPv6 State property is disabled (`/SP/network/ipv6 state=disabled`), Oracle ILOM will support an IPv4-only network connection.

---

5. To commit the pending network changes (IPv4 or IPv6) in Oracle ILOM, type:

```
set /SP/network commitpending=true
```

---

**Note** - All user sessions on the SP are terminated upon modifying and saving IP network property changes. To log back in to Oracle ILOM, use the newly assigned service processor IP address.

---

## Downloading an OS or Software Applications

You can download an operating system (OS) or software applications for all licensed Oracle products from Oracle Software Delivery Cloud (formerly called Oracle eDelivery). Software is available in zip and ISO formats, which you can unzip or burn to DVDs, respectively. All of the download links on the Oracle Technology Network (OTN) point to the Software Delivery Cloud, making this site the authoritative source for all Oracle operating systems and

software applications downloads. To access Oracle Software Delivery Cloud, go to: <https://edelivery.oracle.com>

## Physical Media Requests Are No Longer Supported

Previously you could submit a physical media request (PMR) to receive the latest software release packages. However, Oracle no longer provides physical media for firmware and software updates or for software applications or operating systems. The instructions for submitting a PMR in the your server documentation are no longer applicable.

- For firmware and software updates, go to: <https://support.oracle.com>
- For application and OS downloads, go to: <https://edelivery.oracle.com>

## Sun Server X2-4 Name Change

The server was formerly named Sun Fire X4470 M2. The Sun Server X2-4 name identifies the following:

- X identifies an x86 product.
- The first number, 2, identifies the generation of the server.
- The second number, 4, identifies the number of processors.

## Supported Operating Systems

The latest supported version of Oracle Solaris for your server is Oracle Solaris 11.3.

For other operating systems, the following list provides links to Hardware Compatibility Lists (HCLs). To find the latest supported operating system versions, go to the corresponding HCL.

- Oracle Linux – <http://linux.oracle.com/pls/apex/f?p=117:1:3991604960223967>
- Oracle VM – <http://linux.oracle.com/pls/apex/f?p=117:1:3991604960223967>
- Windows – <https://www.windowsservercatalog.com/>
- VMware ESXi – <http://www.vmware.com/resources/compatibility/search.php>
- Red Hat Enterprise Linux – <https://access.redhat.com/certifications>
- SUSE Linux Enterprise Server – <https://www.suse.com/yessearch/Search.jsp>

The following table lists the supported operating systems and virtual machine software for the Sun Server X2-4. Supported operating systems and software are cumulative with each release; that is, later software releases contain all components of earlier software releases.

Software Release	Supported Operating Systems
2.2.0	No new operating systems supported.
2.1.0	No new operating systems supported.
2.0.1	No new operating systems supported.
2.0.0	<ul style="list-style-type: none"> <li>■ No new operating systems supported.</li> </ul>
1.10.1	<ul style="list-style-type: none"> <li>■ No new operating systems supported.</li> </ul>
1.10.0	<ul style="list-style-type: none"> <li>■ No new operating systems supported.</li> </ul>
1.9.0	<ul style="list-style-type: none"> <li>■ No new operating systems supported.</li> </ul>
1.8.0	<ul style="list-style-type: none"> <li>■ No new operating systems supported.</li> </ul>
1.7.0	<ul style="list-style-type: none"> <li>■ No new operating systems supported.</li> </ul>
1.6.0 and 1.6.1	<ul style="list-style-type: none"> <li>■ Oracle Linux 6.7 and 7.2 (64-bit)</li> <li>■ Red Hat Enterprise Linux (RHEL) 6.7 and 7.2 (64-bit)</li> <li>■ Oracle VM 3.3.3</li> <li>■ Oracle Solaris 11.3 (available preinstalled)</li> </ul>
1.5.1	<ul style="list-style-type: none"> <li>■ No new operating systems supported.</li> </ul>
1.5	<ul style="list-style-type: none"> <li>■ Oracle Linux 6.6 and 7.1 (64-bit)</li> <li>■ Red Hat Enterprise Linux (RHEL) 6.6 and 7.1 (64-bit)</li> <li>■ Oracle VM 3.3.2</li> <li>■ Oracle Solaris 11.2 (available preinstalled)</li> </ul>
1.4.2	<ul style="list-style-type: none"> <li>■ Oracle Linux 6.5 and 5.10 (64-bit)</li> <li>■ Red Hat Enterprise Linux (RHEL) 6.5 and 5.10 (64-bit)</li> </ul>
1.4.1	<ul style="list-style-type: none"> <li>■ Oracle Linux 6.4 (64-bit) (available preinstalled)</li> <li>■ Red Hat Enterprise Linux (RHEL) 5.9 and 6.4 (64-bit)</li> </ul>
1.4	<ul style="list-style-type: none"> <li>■ Oracle Solaris 11.1 (available preinstalled)</li> <li>■ VMware ESXi 5.1</li> <li>■ Oracle Linux 5.9 (64-bit)</li> <li>■ Oracle VM 3.2.1 (available preinstalled)</li> </ul>
1.3.1	<ul style="list-style-type: none"> <li>■ Oracle Solaris 11 11/11 SRU9.5</li> <li>■ Red Hat Enterprise Linux (RHEL) 6.3 (64-bit)</li> <li>■ Oracle VM 3.1.1</li> <li>■ VMware ESXi 5.0 U1</li> </ul>
1.3	<ul style="list-style-type: none"> <li>■ Oracle Solaris 11 11/11</li> <li>■ Oracle VM 3.0.3</li> <li>■ Oracle VM 3.0.2</li> </ul>

Software Release	Supported Operating Systems
	<ul style="list-style-type: none"> <li>■ Oracle Linux 5.8 (64-bit)</li> <li>■ Oracle Linux 6.2 (64-bit)</li> <li>■ Red Hat Enterprise Linux (RHEL) 5.8 (64-bit)</li> <li>■ SUSE Linux Enterprise Server (SLES) 11 SP2</li> </ul>
1.2	<ul style="list-style-type: none"> <li>■ Oracle Solaris 10 8/11, 10 9/10</li> <li>■ Oracle Solaris 11</li> <li>■ Oracle VM 3.0.1</li> <li>■ Oracle Linux 5.7 (64-bit)</li> <li>■ Red Hat Enterprise Linux (RHEL) 5.7 (64-bit)</li> <li>■ VMware ESX/ESXi 4.1 U2</li> <li>■ VMware ESXi 5.0</li> </ul>
1.1	<ul style="list-style-type: none"> <li>■ Oracle Solaris 11 Express</li> <li>■ Oracle Linux 5.6, 6.0 and 6.1 (64-bit)</li> <li>■ Oracle VM 2.2.2 (64-bit)</li> <li>■ Red Hat Enterprise Linux (RHEL) 5.6 and 6.1 (64-bit)</li> <li>■ Windows Server 2008 R2 SP1 (64-bit)</li> <li>■ SUSE Linux Enterprise Server (SLES) 10 SP4 (64-bit)</li> <li>■ VMware ESX/ESXi 4.1 U1</li> </ul>
1.0	<ul style="list-style-type: none"> <li>■ Oracle Solaris 10 8/11</li> <li>■ Oracle Linux 5.5 (64-bit)</li> <li>■ Oracle VM 2.2.1 (64-bit)</li> <li>■ Red Hat Enterprise Linux (RHEL) 5.5 and 6.0 (64-bit)</li> <li>■ Windows Server 2008 R2 (64-bit)</li> <li>■ Windows Server 2008 SP2 (64-bit)</li> <li>■ SUSE Linux Enterprise Server (SLES) 11 SP1</li> </ul>

## Oracle Unbreakable Enterprise Kernel for Linux

Release 2 and Release 3 of the Oracle Unbreakable Enterprise Kernel for Linux are supported in this release of the Sun Server X2-4 software.

- **Oracle Unbreakable Enterprise Kernel Release 2 for Linux:** Release 2 is installed by default on Oracle Linux 5.9, 5.10, 6.3, and 6.4 and can be installed on Red Hat Enterprise Linux 5.9, 5.10, and 6.4. Release 2 is based on the 3.0.16 mainline Linux kernel and contains improvements and new features that have been incorporated into mainline Linux since the first version of the kernel.

For the latest information about operating system compatibility and pointers to installation information, see the *Oracle Unbreakable Enterprise Kernel Release 2 Release Notes* at:

<https://oss.oracle.com/ol6/docs/RELEASE-NOTES-UEK2-QU2-en.html>

- **Oracle Unbreakable Enterprise Kernel Release 3 for Linux:** Release 3 is installed by default on Oracle Linux 6.5 and can be installed on Oracle Linux 6.4 and Red Hat 6.4 and 6.5. Release 3 is based on the 3.0.x mainline Linux kernel and contains improvements and new features that have been incorporated into mainline Linux since Release 2 of the kernel. For the latest information about operating system compatibility and pointers to installation information, see the *Oracle Unbreakable Enterprise Kernel Release 3 Release Notes* at: <https://oss.oracle.com/ol6/docs/RELEASE-NOTES-UEK3-en.html>

## Supported Firmware and Software

The latest Oracle Integrated Lights Out Manager (ILOM) and BIOS firmware are shipped on your Sun Server X2-4. This section identifies the supported Oracle ILOM and BIOS firmware versions. It includes the following sections:

- [“Supported Firmware in Software Releases” on page 23](#)
- [“Firmware Updates” on page 24](#)
- [“Supported Diagnostics” on page 25](#)
- [“Supported Software” on page 25](#)

## Supported Firmware in Software Releases

Supported firmware versions are updated as needed to release new features and to correct any known issues; therefore, the supported firmware versions will change over time.

The following table identifies the Oracle ILOM and BIOS firmware versions.

Software Release	Oracle ILOM SP Firmware	BIOS Firmware
2.2.0	4.0.4.20	16.05.02.00
2.1.0	4.0.3.23	16.05.02.00 (bundled in Oracle ILOM)
2.0.1	4.0.2.25.b	16.05.01.00 (bundled in Oracle ILOM)
2.0.0	4.0.2.25	16.04.05.00 (bundled in Oracle ILOM)
1.10.1	3.2.10.21.a	16.04.05.00 (bundled in Oracle ILOM)

Software Release	Oracle ILOM SP Firmware	BIOS Firmware
1.10.0	3.2.10.21	16.04.05.00 (bundled in Oracle ILOM)
1.9.0	3.2.9.25	16.04.05.00 (bundled in Oracle ILOM)
1.8.0	3.2.8.21	16.04.05.00 (bundled in Oracle ILOM)
1.7.0	3.2.7.20.a	16.04.05.00 (bundled in Oracle ILOM)
1.6.1	3.2.6.20.a	16.04.03.00 (bundled in Oracle ILOM)
1.6.0	3.2.6.20	16.04.03.00 (bundled in Oracle ILOM)
1.5.1	3.1.2.50.b	16.04.03.00 (bundled in Oracle ILOM)
1.5	3.1.2.50	16.04.02.00 (bundled in Oracle ILOM)
1.4.2	3.1.2.24.d	16.04.02.00 (bundled in Oracle ILOM)
1.4.1	3.1.2.24.c r81341	16.04.02.00 (bundled in Oracle ILOM)
1.4	3.1.2.24.b r79266	16.04.02.00 (bundled in Oracle ILOM)
1.3.1	3.1.2.24.a r75561	16.04.01.05 (bundled in Oracle ILOM)
1.3	3.1.2.24 r73820	16.04.01.02
1.2	3.0.6.12.a r70287	16.03.01.03
1.1	3.0.16.12 r65661	16.02.01.01
1.0	3.0.14.20 r63740	16.01.01.18

## Firmware Updates

If you need to reinstall the Oracle ILOM or BIOS firmware, or obtain updates to the firmware, go to the My Oracle Support web site at:

<https://support.oracle.com>

For information about how to download the latest firmware and software, see [Chapter 2, “Getting Server Firmware and Software”](#).

Due to Java security changes, with older versions of the Oracle ILOM firmware, if you used Java 7 update 51 or newer, you can not launch Oracle ILOM Remote Console. With newer



Oracle ILOM firmware (ILOM 3.1.2.24.d and later), if you use Java 7 update 51 or newer, you can launch Oracle ILOM Remote Console.

## Supported Diagnostics

The following table identifies diagnostic software that is supported for this release of the server.

CPLD Version	Pc-Check Version	Oracle VTS
17 (bundled in Oracle ILOM)	6.30s (bundled in Oracle ILOM)	7.0 ps14

## Supported Software

Supported software for the Sun Server X2-4 is available from Oracle. This software includes device drivers, RAID management software, and other utilities for use with your server. You can obtain the required software or software updates by going to the My Oracle Support web site at:

<https://support.oracle.com>

For information about how to download the latest firmware and software, see [Chapter 2, “Getting Server Firmware and Software”](#).

## Supported Memory Configurations

The Sun Server X2-4 supports dual-rank 4-GB and 8-GB RDIMMs and quad-rank 16-GB RDIMMs. A two-processor system using four riser modules populated with 16-GB RDIMMs supports a maximum of 512 GB of system memory. A four-processor system using eight riser modules populated with 16-GB RDIMMs supports a maximum of 1 TB of system memory.

- Dual-rank DIMMs (marked 2Rx4) do not include heat spreaders.
- Quad-rank DIMMs (marked 4Rx4) include heat spreaders. DIMMs with heat spreaders have two U-shaped metal clips on the top of the DIMM.

---

**Note** - Mixing dual-rank and quad-rank DIMMs on the same memory riser degrades performance.

---

## Supported PCIe Cards

This section includes information about the PCIe cards that are supported on the Sun Server X2-4. It includes the following information:

- [“Quantity and Slot Restrictions” on page 26](#)
- [“Minimum Firmware Revisions for PCIe Cards” on page 27](#)
- [“Card Placement and Cooling” on page 28](#)
- [“ESM Replacement Interval” on page 29](#)
- [“Internal Sun Storage 6Gb SAS PCIe RAID HBA Requirements” on page 30](#)
- [“Sun Storage 10GbE FCoE PCIe Low Profile Dual Port CNA and OS Support” on page 30](#)

## Quantity and Slot Restrictions

The following table lists the quantity and slot restrictions for PCIe cards supported on the Sun Server X2-4. The *Maximum Quantity Supported* column indicates the number of cards tested and supported by Oracle.

**TABLE 1** PCIe Card Quantity and Slot Restrictions

PCIe Card	Maximum Quantity Supported	Slot Restrictions
Sun Dual Port GbE PCIe 2.0 Adapter, MMF 7100482	4	Supported in all slots.
Sun Quad Port GbE PCIe 2.0 Adapter, UTP 7100479	4	Supported in all slots.
Sun Dual Port 10GBase-T PCIe 2.0 Adapter 7100563	4	Supported in all slots except x4 electrical interface slots (slots 0 and 9).
Sun Flash Accelerator F20 PCIe Card XTA-FAS-S3IE96GB-N TA-FAS-S3IE96GB-N	6	Supported in slots 9, 4, 8, 7, or 6.
Sun Storage 6Gb SAS PCIe RAID HBA, Internal SGX-SAS6-R-INT-Z SG-SAS6-R-INT-Z	1	Supported in slot 4 only. See “Internal Sun Storage 6 Gb SAS PCIe RAID HBA Issues” on page 13 for more information.
Sun Storage 6Gb SAS PCIe HBA, Internal SGX-SAS6-INT-Z SG-SAS6-INT-Z	1	Supported in slot 2.

PCIe Card	Maximum Quantity Supported	Slot Restrictions
Sun Storage 6Gb SAS PCIe HBA, External SGX-SAS6-EXT-Z SG-SAS6-EXT-Z	4	Supported in all slots except x4 electrical interface slots (slots 0 and 9).
8Gb Single FC PCI-Express, QLogic SG-PCIE1FC-QF8-Z SG-XPCIE1FC-QF8-Z	8	Supported in all slots.
8Gb Dual FC PCI-Express, Emulex SG-PCIE2FC-EM8-Z SG-XPCIE2FC-EM8-Z	8	Supported in all slots.
8Gb Single FC PCI-Express, Emulex SG-PCIE1FC-EM8-Z SG-XPCIE1FC-EM8-Z	8	Supported in all slots.
8Gb Dual FC PCI-Express, QLogic SG-PCIE1FC-QF8-Z SG-XPCIE1FC-QF8-Z	8	Supported in all slots.
Sun PCIe Quad Gigabit Ethernet UTP Adapter 4446A-Z-N	8	Supported in all slots.
Sun PCIe Dual Gigabit Ethernet MMF Adapter 7281A-2-N	8	Supported in all slots.
Sun Dual 10GbE SFP+ PCIe 2.0 Low Profile Adapter 1109A-Z	6	Supported in all slots except x4 electrical interface slots (slots 0 and 9).
InfiniBand Quad Data Rate CX2 PCIe Adapter 4242A	4	Supported in all slots except x4 electrical interface slots (slots 0 and 9).
Sun Storage 10 GbE FCoE PCIe Low Profile, Dual Port Twin-Ax Converged Network Adapter SG-PCIEFCOE2-Q-TA SG-XPCIEFCOE2-Q-TA	4	Supported in all slots except x4 electrical interface slots (slots 0 and 9).
Sun Storage 10 GbE FCoE PCIe Low Profile, Dual Port SR Converged Network Adapter SG-PCIEFCOE2-Q-SR SG-XPCIEFCOE2-Q-SR	4	Supported in all slots except x4 electrical interface slots (slots 0 and 9).

## Minimum Firmware Revisions for PCIe Cards

The following table lists minimum firmware revisions for PCIe cards.

**TABLE 2** PCIe Card Minimum Firmware Revisions

PCIe Card	Minimum Firmware Revision	Included in FRU Revision
8 Gb Single FC PCI-Express, QLogic SG-PCIE1FC-QF8-Z	Preload Table v2.5.2	371-4324-02
8 Gb Dual FC PCI-Express, QLogic SG-PCIE2FC-QF8-Z		371-4325-02
For more information, go to the <a href="#">QLogic Oracle Approved Software</a> page		
InfiniBand Quad Data Rate CX2 PCIe Adapter 4242A	2.7.8130	375-3606-03
For more information, go to the <a href="#">Mellanox Firmware for Oracle Sun InfiniBand Products</a> page.		
Sun Storage 6 Gb SAS PCIe HBA, Internal SGX-SAS6-INT-Z SG-SAS6-INT-Z	05.00.17.00	375-3640-01 rev. 51

## Sun Flash Accelerator F20 PCIe Card Requirements

Review the following sections that describe the Sun Flash Accelerator F20 PCIe card requirements:

- [“Card Placement and Cooling” on page 28](#)
- [“ESM Replacement Interval” on page 29](#)

### Card Placement and Cooling

If you are using the Sun Flash Accelerator F20 PCIe card, your configuration must meet the following requirements for proper installation and cooling:

- Do not connect devices to the internal SAS/SATA ports of the Sun Flash Accelerator F20 PCIe card. The Sun Server X2-4 does not support using this card as an internal host bus adapter (HBA).
- The HBA can be installed only in PCIe slots 9, 4, 8, 7, or 6, in that order of preference (slot 9 is the best slot to use for this HBA and slot 6 is acceptable but is the least desirable slot to use).

---

**Note** - If you are using a Sun Storage 6 Gb SAS PCIe RAID HBA, that HBA must be installed in slot 4; therefore, slot 4 will not be available for the Sun Flash Accelerator F20 PCIe card.

---

- If you are using the Sun Flash Accelerator F20 PCIe card, you must use the Oracle Integrated Lights Out Manager (ILOM) available with software version 1.1 or later.
  - If your server is running Oracle Integrated Lights Out Manager (ILOM) 3.0 or earlier, you must enable the Enhanced PCIe Cooling Mode Policy. Refer to the *Oracle Integrated Lights Out Manager (ILOM) 3.0 Supplement for Sun Server X2-4* for information about the Enhanced PCIe Cooling Mode Policy.
- 

**Note** - If your server is running Oracle ILOM 4.0.2.25 or later, refer to the Oracle ILOM 4.0 Documentation Library. If your server is running Oracle ILOM 3.2.x, refer to the Oracle ILOM 3.2 Documentation Library. Both libraries are located at: <https://www.oracle.com/goto/ilom/docs>

---

- With this HBA installed only in slots 9 and/or 4, the ambient temperature requirement for the server remains as follows:
  - Operating temperature: 5°C to 35°C (41°F to 95°F)
  - Nonoperating temperature: -40°C to 70°C (-40°F to 158°F)
- With this HBA installed in slot 8, slot 7, or slot 6, the ambient temperature requirement for the server is modified to the following:
  - Operating temperature: 5°C to 32°C (41°F to 89.6°F)
  - Nonoperating temperature: -40°C to 70°C (-40°F to 158°F)

## ESM Replacement Interval

The Sun Flash Accelerator F20 PCIe card contains a component called the Energy Storage Module (ESM) that functions similarly to a battery backup. The ESM plays a critical role protecting data during power outages and enabling optimal card performance. When the ESM is online and functioning properly, the card operates in write-back mode (providing optimal performance). When the ESM is not functioning properly, the card functions in write-through mode. While data is secure in write-through mode, performance is dramatically decreased.

Based on the expected life of the ESM, and to maintain optimal card performance, replace the ESM every three years. If the ESM is not replaced at the recommended service interval, the level of stored energy degrades over time. If there is not enough stored energy to complete a write operation during a power failure, any data stored on the card is at risk of being lost.

## Internal Sun Storage 6Gb SAS PCIe RAID HBA Requirements

If you are using the internal Sun Storage 6Gb SAS PCIe RAID Host Bus Adapter (HBA) (SGX-SAS6-R-INT-Z or SG-SAS6-R-INT-Z), your configuration must meet the following requirements for proper battery cooling:

- The HBA must be installed in PCIe slot 4. In slot 4, the battery on the HBA faces an area with greater airflow, which is required for proper battery cooling. Do not move the HBA to slot 2 to allow slot 3 to operate in x16 mode.
- With this HBA installed, the ambient temperature requirement for the server is as follows:
  - Operating temperature: 5°C to 32°C (41°F to 89.6°F)

## Sun Storage 10GbE FCoE PCIe Low Profile Dual Port CNA and OS Support

The Windows operating system (OS) is not supported with the Sun Storage 10GbE FCoE PCIe Low Profile, Dual Port Twin-Ax/SR Converged Network Adapter (SG-PCIEFCOE2-Q-TA or SG-XPCIEFCOE2-Q-TA; or SG-PCIEFCOE2-Q-SR or SG-XPCIEFCOE2-Q-SR). Refer to “[Windows Known Issues](#)” on page 46 for more information about this known issue.

## Oracle x86 Products Accessibility

This section describes the accessibility features that are part of Oracle x86 hardware, firmware, and related documentation.

Oracle strives to make its products, services, and supporting documentation usable and accessible to the disabled community. To that end, products, services, and documentation include features that make the product accessible to users of assistive technology.

For more information about Oracle's commitment to accessibility, go to:

- <http://www.oracle.com/pls/topic/lookup?ctx=acc&id=docacc>

## Hardware Accessibility

Oracle x86 hardware has color-coded labels, component touch points, and status indicators (LEDs) that provide information about the system. These labels, touch points, and indicators

can be inaccessible features for sight-impaired users. The product HTML documentation provides context and descriptive text available to assistive technologies to aid in interpreting status and understanding the system. System-level descriptions and status indicator interpretation can be found in the product Service Manual. The documentation also provides diagrams and screenshots that do not rely on color. Within the diagrams, callouts indicate the referenced component information. The callout descriptions are mapped within a table. All images and tables in the documentation include descriptive alternative text.

Another method to obtain information about the system is to use the built-in Oracle Integrated Lights Out Manager (ILOM). Oracle ILOM provides a browser-based interface and a command-line interface that support assistive technologies for real-time viewing of system status, indicator interpretation, and system configuration. For details, see "Oracle ILOM Accessibility."

You can access the accessible HTML documentation for Oracle x86 hardware products at:

- <http://docs.oracle.com/en/servers/>

## Oracle ILOM Accessibility

You can use the Oracle Integrated Lights Out Manager (ILOM) browser user interface (BUI) to monitor and manage the server hardware. The Oracle ILOM BUI does not require a special accessibility mode; rather, its accessibility features are always available. The BUI was developed using standard HTML and JavaScript and its features conform to accessibility guidelines.

To navigate a BUI page and select items or enter commands, you can use standard keyboard inputs, such as using the Tab key to go to a selection, or the up and down arrow keys to scroll through the page. You can also make menu selections by using standard keyboard combinations.

For example, using the Oracle ILOM Open Problems BUI page, you can identify faulted memory modules (DIMMs) or processors (CPUs) that would otherwise be identified by a lit LED indicator on the motherboard. Likewise, you can use the Oracle ILOM BUI to monitor the hardware power states that are also indicated by flashing LED indicators on the hardware.

The Oracle ILOM command-line interface (CLI) is an alternative and equivalent way to access the Oracle ILOM BUI features and functionality. Because the operating systems that run on the Oracle server hardware support assistive technologies to read the content of the screen, you can use the CLI as an equivalent means to access the color-based, mouse-based, and other visual-based utilities that are part of the BUI. For example, you can use a keyboard to enter CLI commands to identify faulted hardware components, check system status, and monitor system health.

You can use the Oracle ILOM Remote Console Plus to access both a text-based serial console and a graphics-based video console that enable you to remotely redirect host server system keyboard, video, mouse, and storage devices. Note, however, that the Oracle ILOM Java Remote Console does not support scaling of the video frame within the Java application. You need to use assistive technology to enlarge or reduce the content in the Java Remote Console Plus display.

As an alternative method to using the BIOS Setup Utility to configure BIOS settings, Oracle ILOM provides a set of configurable properties that can help you manage the BIOS configuration parameters on an Oracle x86 server. Using Oracle ILOM, you can:

- Back up a copy of the BIOS configuration parameters to an XML file using the Oracle ILOM BUI.
- Edit the XML file using a standard XML editor. The BIOS XML tags correlate directly to the BIOS screen labels.
- Restore the XML file of the backed up or edited configuration parameters to BIOS.

The BUI and CLI methods for using Oracle ILOM are described in the accessible HTML documentation for Oracle ILOM at:

- <https://www.oracle.com/goto/ilom/docs>

## Oracle Hardware Management Pack Accessibility

Oracle Hardware Management Pack software is a set of command-line interface (CLI) tools. Oracle Hardware Management Pack software does not include product-specific accessibility features. Using a keyboard, you can run the CLI tools as text commands from the operating system of a supported Oracle server. All output is text-based.

Additionally, most Oracle Hardware Management Pack tools support command output to a text log file or XML file, which can be used for text-to-speech conversion. Accessible manual pages (man pages) are available that describe the Hardware Management Pack tools on the system on which those tools are installed.

Installation and uninstallation of Oracle Hardware Management Pack can be performed manually, using text commands entered from the CLI. Assistive technology products such as screen readers, digital speech synthesizers, or magnifiers can be used to read the content of the screen.

Refer to the assistive technology product documentation for information about operating system and command-line interface support.

The CLI tools for using the software are described in the accessible HTML documentation for Hardware Management Pack at:



- <https://www.oracle.com/goto/ohmp/docs>

## BIOS Accessibility

When viewing BIOS output from a terminal using the serial console redirection feature, some terminals do not support function key input. However, BIOS supports the mapping of function keys to Control key sequences when serial redirection is enabled. Descriptions of the function key to Control key sequence mappings are provided in the product documentation, typically within the server Service Manual. You can navigate the BIOS Setup Utility by using either a mouse or keyboard commands.

As an alternative method of configuring BIOS settings using the BIOS Setup Utility screens, Oracle ILOM provides a set of configurable properties that can help you manage the BIOS configuration parameters on an Oracle x86 server. For more information, see "Oracle ILOM Accessibility."

BIOS information and its functions are typically documented in the product Service Manual or Installation Guide.

## Documentation Accessibility

Documentation for Oracle hardware is provided in HTML and PDF formats. The HTML documents are accessible using standard operating system controls and assistive technology. PDF documents are also provided; however, PDF is not an accessible format. PDF documents are considered support documents because the PDF content is available in accessible HTML format.

Product documentation provides figures, other types of images, and screenshots that do not rely on color for interpretation. Within the figures, callouts indicate the referenced component information. The callouts are mapped within a table to provide text descriptions of the referenced parts of the figures. In addition, alternative text is provided for all tables and images that provides the context of the information and images.

Note that screen readers might not always correctly read the code examples in the documentation. The conventions for writing code require that closing braces should appear on an otherwise empty line. However, some screen readers might not always read a line of text that consists solely of a bracket or brace.

The documentation might contain links to web sites of other companies and organizations that Oracle does not own or control. Oracle neither evaluates nor makes any representations regarding the accessibility of these web sites.

You can access the accessible HTML documentation for Oracle x86 products at:

- <http://docs.oracle.com/en/servers/>

## Resolved Issues

The following table describes resolved issues related to the Sun Server X2-4.

**TABLE 3** Resolved Issues

Bug ID	Description
15792374	<p><b>fmadm replaced command does not work on DIMM with revised part number.</b></p> <p><b>Issue:</b></p> <p>If the DIMM part number in the fault database does not match the original DIMM part number, the <code>fmadm replaced</code> command fails. For example, this could happen if a DIMM of one brand is replaced with a DIMM of another brand.</p> <p><b>Affected Software:</b></p> <ul style="list-style-type: none"> <li>■ Oracle ILOM 3.1.2.2.4 r78320</li> <li>■ Oracle ILOM 3.1.2.24.a r75561</li> <li>■ Oracle ILOM 3.1.2.24.b r79266</li> </ul> <p><b>Fix Available:</b></p> <p>Oracle ILOM 3.1.2.24.c r81341</p>
15786494	<p><b>DIMM field-replaceable unit (FRU) part number is not reported correctly from <code>ipmitool fru</code> output.</b></p> <p><b>Issue:</b></p> <p><code>ipmitool fru</code> output returns the DIMM product part number as 001-0003-01, and not as a proper vendor identification number (for example, M393B2G70BH0-YK0).</p> <p><b>Affected Software:</b></p> <ul style="list-style-type: none"> <li>■ Oracle ILOM 3.1.2.2.4 r78320</li> <li>■ Oracle ILOM 3.1.2.24.a r75561</li> <li>■ Oracle ILOM 3.1.2.24.b r79266</li> </ul> <p><b>Fix Available:</b></p> <p>Oracle ILOM 3.1.2.24.c r81341</p>
16698649	<p><b>DIMM field-replaceable unit (FRU) part number displays the placeholder value 001-0003-01.</b></p> <p><b>Issue:</b></p>

Bug ID	Description
	<p>Fault Management Architecture (FMA) message returns the DIMM product part number as 001-0003-01, and not as a proper vendor identification number (for example, M393B2G70BH0-YK0).</p> <p><b>Affected Software:</b></p> <ul style="list-style-type: none"> <li>■ Oracle ILOM 3.1.2.2.4 r78320</li> <li>■ Oracle ILOM 3.1.2.24.a r75561</li> <li>■ Oracle ILOM 3.1.2.24.b r79266</li> </ul> <p><b>Fix Available:</b></p> <p>Oracle ILOM 3.1.2.24.c r81341</p>
15814174	<p><b>When permitted_power exceeds 2560W, Oracle ILOM event log might report incorrect power unit reading.</b></p> <p><b>Issue:</b></p> <p>Oracle ILOM event logs may report incorrect Power Unit /SYS/VPS reading. For example: 122   08/31/2012   21:10:20   Power Unit /SYS/VPS   Upper Non-critical going low   Reading 70 &lt; Threshold 280 Watts.</p> <p>128   08/31/2012   21:26:14   Power Unit /SYS/VPS   Upper Non-critical going high   Reading 450 &gt; Threshold 270 Watts.</p> <p><b>Affected Software:</b></p> <ul style="list-style-type: none"> <li>■ Oracle ILOM 3.1.2.2.4 r78320</li> <li>■ Oracle ILOM 3.1.2.24.a r75561</li> <li>■ Oracle ILOM 3.1.2.24.b r79266</li> </ul> <p><b>Fix Available:</b></p> <p>ILOM 3.1.2.24.c r81341</p>
15623738	<p><b>NIC port enumeration might change after one or more PCIe cards are added.</b></p> <p><b>Issue:</b></p> <p>Because PCIe bus numbering is dynamic on the Sun Server X2-4, after you add one or more PCIe cards to the server, the network interface card (NIC) port enumeration might change. For example, igb2, igb3 might change to igb4, igb5.</p> <p><b>Affected Operating System:</b></p> <ul style="list-style-type: none"> <li>■ All versions of Oracle Solaris</li> </ul> <p><b>Fix Available:</b></p> <p>This is intended product behavior. To workaround the issue, enter the following commands:</p> <pre>#echo #path_to_inst_bootstrap_1 &gt; /etc/path_to_inst #reboot</pre>
15727517	<p><b>Unattended operating system installation mode is not supported on Oracle Hardware Installation Assistant 2.5.7.2.</b></p> <p><b>Issue:</b></p>

Bug ID	Description
	<p>Although a state file for unattended operating system installation mode can be created, the current unattended installation method does not work in Oracle Hardware Installation Assistant 2.5.7.2. An operating system installation URL must be manually entered to continue the installation process.</p> <p><b>Affected Operating Systems and Software:</b></p> <ul style="list-style-type: none"> <li>■ Windows Server 2008 SP2 (64-bit)</li> <li>■ Windows Server 2008 R2 (64-bit)</li> <li>■ Oracle Hardware Installation Assistant</li> <li>■ All Sun Server X2-4 Software Releases</li> </ul> <p><b>Workaround:</b></p> <p>Use a Linux-based (Oracle, Red Hat or SUSE) system or Windows XP system to create the Oracle Hardware Installation Assistant USB flash drive. For Linux or Windows instructions, see the <i>Oracle Hardware Installation Assistant 2.5 User's Guide for x86 Servers</i> at: <a href="http://www.oracle.com/pls/topic/lookup?ctx=hia">http://www.oracle.com/pls/topic/lookup?ctx=hia</a>.</p> <p><b>Fix Available:</b></p> <p>This issue was fixed in Software Release 1.2.</p>
15711861	<p><b>Oracle Hardware Installation Assistant does not auto-run when using a system that is running the Windows Server 2008 R2 operating system.</b></p> <p><b>Issue:</b></p> <p>Oracle Hardware Installation Assistant includes an auto-run utility to help create a boot-capable USB flash drive on a Windows-based system. The Oracle Hardware Installation Assistant auto-run utility for the Windows Server 2008 R2 operating system does not work. The initial application screen does not appear when using either an Oracle Hardware Installation Assistant CD/DVD or when mounting an ISO image file.</p> <p><b>Affected Operating Systems and Software:</b></p> <ul style="list-style-type: none"> <li>■ Windows Server 2008 SP2 (64-bit)</li> <li>■ Windows Server 2008 R2 (64-bit)</li> <li>■ Oracle Hardware Installation Assistant</li> <li>■ Software Release 1.1</li> </ul> <p><b>Fix Available:</b></p> <p>This issue was fixed in Software Release 1.2.</p>
15708395	<p><b>An unknown device is displayed in the system Device Manager after installing the Windows Server 2008 SP2 or R2 operating system.</b></p> <p><b>Issue:</b></p> <p>An unknown device is displayed in the system Device Manager after installing the Windows Server 2008 SP2 or R2 operating system using the Oracle Hardware Installation Assistant.</p> <p><b>Affected Operating Systems and Software:</b></p> <ul style="list-style-type: none"> <li>■ Windows Server 2008 SP2 (64-bit)</li> </ul>

Bug ID	Description
	<ul style="list-style-type: none"> <li>■ Windows Server 2008 R2 (64-bit)</li> <li>■ Oracle Hardware Installation Assistant</li> <li>■ Software Releases 1.0 and 1.1</li> </ul> <p><b>Fix Available:</b></p> <p>This issue was fixed in Software Release 1.2.</p>
15759843	<p><b>Windows Server 2008 SP2 continuously reboots with 1 TB of memory.</b></p> <p><b>Issue:</b></p> <p>When installing Windows Server 2008 SP2 into a Sun Server X2-4 with 1 TB of memory, the system reboots continuously.</p> <p><b>Affected Operating System:</b></p> <ul style="list-style-type: none"> <li>■ Windows Server 2008 SP 2 (64-bit)</li> </ul> <p><b>Workaround:</b></p> <p>Complete the following steps to enable BIOS to support 1 TB of memory:</p> <ol style="list-style-type: none"> <li>1. Reboot the system to BIOS.</li> <li>2. Change MMIOL Reclaim status from Enabled to Disabled by selecting BIOS SETUP UTILITY IO/MMIO &gt; IO/MMIO Ration Configuration &gt; MMIOL Reclaim &gt; Disabled</li> </ol>
15711616	<p><b>The generate-netboot.img.sh file in Oracle Hardware Installation Assistant does not work.</b></p> <p><b>Issue:</b></p> <p>The generate-netboot.img.sh file, located in the root folder of Oracle Hardware Installation Assistant, does not work. The generate-netboot.img.sh file is used to create the netboot.img file that is used for PXE installations of Oracle Hardware Installation Assistant.</p> <p><b>Affected Software:</b></p> <ul style="list-style-type: none"> <li>■ Oracle Hardware Installation Assistant</li> <li>■ Software Releases 1.0 and 1.1</li> </ul> <p><b>Fix Available:</b></p> <p>The issue was fixed in Software Release 1.2.</p>
15694676	<p><b>Error message is reported when running Oracle VTS.</b></p> <p><b>Issue:</b></p> <p>The following error message is reported when running Oracle VTS: Sun OEM Get LED command Failed: Desination Unavailable</p> <p><b>Affected Software:</b></p> <ul style="list-style-type: none"> <li>■ Oracle VTS 7.0 PS10</li> <li>■ All Sun Server X2-4 Software Releases</li> </ul>

Bug ID	Description
	<p><b>Fix Available:</b></p> <p>This issue was fixed in Oracle VTS 7.0 PS13.</p>

## Known Open Issues

The following tables describe known open issues and workarounds related to the Sun Server X2-4.

- [“Hardware Known Issue” on page 38](#)
- [“BIOS Known Issues” on page 39](#)
- [“Oracle Solaris Known Issues” on page 40](#)
- [“Oracle Linux, SUSE Linux Enterprise Server \(SLES\), and Red Hat Enterprise Linux \(RHEL\) Known Issues” on page 41](#)
- [“Oracle VM Known Issue” on page 46](#)
- [“Windows Known Issues” on page 46](#)
- [“Oracle Integrated Lights Out Manager \(ILOM\) Known Issues” on page 48](#)
- [“Oracle Hardware Installation Assistant Known Issues” on page 49](#)
- [“Documentation Known Issues” on page 51](#)

## Hardware Known Issue

**TABLE 4** Hardware Known Open Issue

Bug ID	Description
None	<p><b>Do not mix dual-rank and quad-rank DIMMs.</b></p> <p><b>Issue:</b></p> <p>The Sun Server X2-4 now supports dual-rank and quad-rank DIMMs. However, mixing dual-rank DIMMs with quad-rank DIMMs in the same memory riser degrades performance.</p> <p><b>Affected Hardware:</b></p> <ul style="list-style-type: none"> <li>■ Sun Server X2-4</li> </ul> <p><b>Workaround:</b></p> <p>Do not mix dual-rank and quad-rank DIMMs in the same server.</p>

## BIOS Known Issues

**TABLE 5** BIOS Known Open Issues

Bug ID	Description
15576675	<p><b>Amount of memory reported by BIOS is less than actual memory installed.</b></p> <p><b>Issue:</b></p> <p>In the BIOS splash screen and in the main BIOS Setup Utility menu, the system reports 8 MB less memory than what is installed to account for the Intel architecture's consumption of 8 MB of debug memory.</p> <p><b>Affected Software:</b></p> <ul style="list-style-type: none"> <li>■ All Sun Server X2-4 Software Releases</li> </ul> <p><b>Workaround:</b></p> <p>There is no workaround.</p>
15725542	<p><b>PXE boot might fail after running Pc-Check diagnostics.</b></p> <p><b>Issue:</b></p> <p>When attempting a PXE boot immediately after running PcCheck in Extended mode, the boot attempt might fail with a message similar to the following:</p> <p>Intel(R) Boot Agent GE v1.3.35 Copyright (C) 1997-2009, Intel Corporation Intel (R) Boot Agent PXE Base Code (PXE-2.1 build 087) Copyright (C) 1997-2009, Intel Corporation</p> <p><b>Affected Software:</b></p> <ul style="list-style-type: none"> <li>■ Software Release 1.1 running Oracle ILOM 3.0.16.12, and BIOS 16.02.01.01 with Pc- Check 6.29s</li> </ul> <p><b>Workaround:</b></p> <p>Power cycle or warm reboot the system.</p>
15707452	<p><b>Incorrect IPMI warning codes for DIMM DDR training errors are generated during BIOS POST.</b></p> <p><b>Issue:</b></p> <p>Incorrect IPMI warning codes for DIMM DDR training errors are generated during system BIOS POST. The Service Required LED might indicate an error and the following warning codes might be displayed in system event log (SEL) entries:</p> <p>0x0d WARN_DD_TRAINING_ERROR warning: 0x02 - WARN_DIMM_MISMATCH 0x03 - WARN_USER_RANK_DISABLE 0x05 - WARN_MEMBIST_ECC_SYMBOL 0x09 - WARN_THROT_INSUFFICIENT</p> <p><b>Affected Software:</b></p> <ul style="list-style-type: none"> <li>■ All Sun Server X2-4 Software Releases</li> </ul>

Bug ID	Description
	<p><b>Workaround:</b></p> <p>These are benign error messages that can be safely ignored.</p>

## Oracle Solaris Known Issues

**TABLE 6** Oracle Solaris Known Open Issues

Bug ID	Description
15781718	<p><b>Oracle Solaris 11 11/11 and 11.1 displays the following warning message: "NOTICE: BIOS BUG: Invalid Bus Number in PCI IRQ Routing Table"</b></p> <p><b>Issue:</b></p> <p>Warning message appears in Oracle Solaris 11 after operating system installation.</p> <p><b>Affected Operating System:</b></p> <ul style="list-style-type: none"> <li>■ Oracle Solaris 11 11/11 and 11.1</li> </ul> <p><b>Workaround:</b></p> <p>This warning message can be safely ignored. It is an informational message for an unexpected but harmless incident.</p>
15760687	<p><b>System panics at beginning of Oracle Solaris 10 8/11 installation onto a Sun Server X2-4 system configured for RAID 10 and with the Sun Storage 6-Gb SAS PCIe HBA card installed.</b></p> <p><b>Issue:</b></p> <p>A system panic might occur during the installation of Oracle Solaris 10 8/11 onto a Sun Server X2-4 that is configured for RAID 10, when the hard disk drives are connected to an internal Sun Storage 6-Gb SAS PCIe HBA card (SGX-SAS6-INT-Z or SG-SAS6-INT-Z). The panic is caused by a known issue with the HBA mptsas driver.</p> <p><b>Affected Operating System:</b></p> <ul style="list-style-type: none"> <li>■ Oracle Solaris 10 8/11</li> </ul> <p><b>Workaround:</b></p> <p>Apply a mptsas driver Install Time Update (ITU) patch during the OS installation. The steps to resolve this panic issue are detailed in the ReadMe file for the ITU patch, which can be found in the Oracle Solaris folder in the Tools and Drivers firmware image of Software Release 1.2 and later releases.</p>
15756723	<p><b>Oracle Solaris 10 8/11 system panics and reboots after three hours of network stress.</b></p> <p><b>Issue:</b></p> <p>Solaris 10 8/11 might panic and then reboot during an extended time of network stress.</p> <p><b>Affected Operating System:</b></p>



Bug ID	Description
	<ul style="list-style-type: none"> <li>■ Oracle Solaris 10 8/11</li> </ul> <p><b>Workaround:</b></p> <p>Install Patch 147441-08 (or higher version), which you can download from My Oracle Support. Run the install shell script to install the related patch.</p>
15726332	<p><b>Intel SpeedStep function does not work with Oracle Solaris 10 9/10, Oracle Solaris 10 8/11, or Oracle Solaris 11 Express.</b></p> <p><b>Issue:</b></p> <p>The Intel SpeedStep functionality does not work on systems running Oracle Solaris 10 9/10, Oracle Solaris 10 8/11, and Oracle Solaris 11 Express.</p> <p><b>Affected Operating Systems:</b></p> <ul style="list-style-type: none"> <li>■ Oracle Solaris 10 9/10</li> <li>■ Oracle Solaris 10 8/11</li> <li>■ Oracle Solaris 11 Express</li> </ul> <p><b>Workaround:</b></p> <p>This issue can be fixed by editing the configuration file <code>/etc/power.conf</code> to change <code>cpupm enable</code> to <code>cpupm enable poll-mode</code>.</p>

## Oracle Linux, SUSE Linux Enterprise Server (SLES), and Red Hat Enterprise Linux (RHEL) Known Issues

**TABLE 7** Oracle Linux, SLES, and RHEL Known Open Issues

Bug ID	Description
15786284	<p><b>RHEL 6.2 - APEI: Can not request iomem region &lt;000000007f790800-000000007f790804&gt; for GARs.</b></p> <p><b>Issue:</b></p> <p>The following error message of APEI will be shown in RHEL 6.2 dmesg when the system boots using default kernel parameters:</p> <p>APEI: Can not request iomem region &lt;000000007f790800-000000007f790804&gt; for GARs.</p> <p>This inconsistent description of the APEI ERST feature in ACPI specification 4.x/5.x renders the ERST function of APEI unusable in Linux.</p> <p><b>Affected Operating System:</b></p> <ul style="list-style-type: none"> <li>■ Red Hat Enterprise Linux (RHEL) 6.2</li> </ul>

Bug ID	Description
	<p><b>Workaround:</b></p> <p>Disable ERST of APEI by appending <code>erst_disable</code> to the kernel command line. The following information will be displayed in <code>dmesg</code>: ERST: Error Record Serialization Table (ERST) support is disabled.</p>
15776200	<p><b>Hardware error messages and false mcelog errors appear in dmesg on two-processor and four-processor server configurations running SLES 11 SP2.</b></p> <p><b>Issue:</b></p> <p>The following error message might appear when running SLES 11 SP2 on a two-processor or four-processor system:</p> <p>MCE Error, Status code: <code>d00001000009008f</code></p> <p><b>Affected Operating System:</b></p> <ul style="list-style-type: none"> <li>■ SUSE Linux Enterprise Server (SLES) 11 SP2</li> </ul> <p><b>Workaround:</b></p> <p>If the error messages are not persistent, and there is no obvious performance degradation, you can safely ignore them. If the error messages are persistent, identify and replace the marginal components.</p>
15780082	<p><b>Value of the crash kernel option for RHEL 5.8 and Oracle Linux 5.8 needs to be increased to a minimum of 128M@32M.</b></p> <p><b>Issue:</b></p> <p>When using the Oracle Unbreakable Enterprise Kernel for Linux, a higher memory setting is required for the crash kernel option in the <code>/etc/grub.conf</code> file. Booting with <code>crashkernel1=128M@16M</code> results in the following error: <code>crashkernel reservation failed - memory is in use.</code></p> <p><b>Affected Operating Systems:</b></p> <ul style="list-style-type: none"> <li>■ Oracle Linux 5.8</li> <li>■ Red Hat Enterprise Linux (RHEL) 5.8</li> </ul> <p><b>Workaround:</b></p> <p>The minimum value for the crash kernel option is 128M@32M. Based on the system configuration, an even higher value might be required. If <code>kdump</code> service loading fails, increase the second value (32M). If the system hangs or crashes during dumping the core, increase the first value (128M).</p>
15759139	<p><b>Quad Gigabit Ethernet UTP PCIe and Dual Gigabit Ethernet PCIe option cards do not work on SLES 10 SP4 XEN.</b></p> <p><b>Issue:</b></p> <p>On SLES 10 SP4 XEN, the Quad Gigabit Ethernet UTP PCIe (X4446A-Z) and the Dual Gigabit Ethernet PCIe (X7281A) do not work normally because of a XEN kernel issue.</p> <p><b>Affected Operating System:</b></p>

Bug ID	Description
	<ul style="list-style-type: none"> <li>■ SUSE Linux Enterprise Server (SLES) 10 SP4</li> </ul> <p><b>Workaround:</b></p> <p>This issue has been fixed in SLES 11 SP1 XEN kernel; however, there is no workaround for this issue in SLES 10 SP4 XEN kernel.</p>
15761043	<p><b>SLES 11 SP1 XEN and Oracle VM 3.x might report map_irq failed.</b></p> <p><b>Issue:</b></p> <p>SLES 11 SP1 XEN and Oracle VM might report map_irq failed.</p> <p><b>Affected Operating System and Software:</b></p> <ul style="list-style-type: none"> <li>■ SUSE Linux Enterprise Server (SLES) 11 SP1</li> <li>■ Oracle VM 3.x</li> </ul> <p><b>Workaround:</b></p> <p>Add the following to the kernel line of the GRUB file: <code>extra_guest_irqs=64,2048 nr_irqs=2048</code></p>
15636521	<p><b>Oracle Linux 5.5, RHEL 5.5, and SLES 11 SP1 allow only a limited number of interrupt vectors.</b></p> <p><b>Issue:</b></p> <p>Certain hardware configurations that include many high bandwidth I/O cards with drivers that use multiple MSI vectors per instance might cause the kernel to run out of interrupts. This situation might result in a long pause or system hang at boot time or I/O devices that are unusable due to driver instances unable to get required interrupts. This situation is especially likely to occur for the Xen Hypervisor and Dom0 with multiple InfiniBand and 10GbE network cards using SR-IOV, but is also possible on the SMP kernel.</p> <p><b>Affected Operating Systems:</b></p> <ul style="list-style-type: none"> <li>■ Oracle Linux 5.5</li> <li>■ Red Hat Enterprise Linux (RHEL) 5.5</li> <li>■ SUSE Linux Enterprise Server (SLES) 11 SP1</li> </ul> <p><b>Workaround:</b></p> <p>Booting with kernel argument <code>pci=noms_i</code> allows the system to boot with no long pause in UDEV and no system hang. However the system is forced to use a single IO-APIC PIN interrupt per function. If you need MSI instead of IO-APIC interrupts, then you might need to use some combination of the following methods to alleviate the problem:</p> <ul style="list-style-type: none"> <li>■ Blacklist some drivers by adding the module name to the text file <code>/etc/modprobe.d/blacklist</code>. This prevents the module from loading and using the device.</li> <li>■ Force certain drivers (such as <code>mlx4_core : infiniband</code>) to load last, and take advantage of the code in those drivers that asks for optimal MSI number of vectors. If those vectors are not available, retry with increasingly fewer number of vectors.</li> </ul>
15718589	<p><b>Oracle Linux 5.6 fails to allocate memory space on onboard Intel 82576 network interface card (NIC) ports.</b></p>

Bug ID	Description
	<p><b>Issue:</b></p> <p>Oracle Linux 5.6 displays "PCI: Failed to allocate mem resource" for the onboard Intel 82576 network interface card, which supports the Intel SR-IOV feature. Oracle Linux 5.6 then attempts to allocate memory space that is required by Virtual Function exported by Intel's SR-IOV capability.</p> <p><b>Affected Operating System:</b></p> <ul style="list-style-type: none"> <li>■ Oracle Linux 5.6 and later</li> </ul> <p><b>Workaround:</b></p> <p>You must first enable SR-IOV support and ARI support features in the Advanced tab in the BIOS Setup Utility.</p>
15691490	<p><b>Error message is received when running RHEL 6.0.</b></p> <p><b>Issue:</b></p> <p>The following error message might be received when running RHEL 6.0 on the server:</p> <pre>EDAC MC: Ver: 2.1.0 Sep 1 2012 PCI: Discovered peer bus ff PCI: Discovered peer bus f3 EDAC i7core: Driver loaded. i7core_edac: probe of 0000:80:14:0 failed with error -22</pre> <p><b>Affected Operating System:</b></p> <ul style="list-style-type: none"> <li>■ Red Hat Enterprise Linux (RHEL) 6.0</li> </ul> <p><b>Workaround:</b></p> <p>This is expected behavior and the error message can be safely ignored.</p>
15705525	<p><b>Repeatedly executing the <code>lspci -vv</code> command might cause a system that is running RHEL 6.0 to reset when under high I/O stress.</b></p> <p><b>Issue:</b></p> <p>Repeatedly executing the <code>lspci -vv</code> command might cause a system that is running RHEL 6.0 to reset when under high I/O stress. This issue occurs when the Sun Storage 6 Gb SAS PCIe Internal HBA (SGX-SAS6-INT-Z or SG-SAS6-INT-Z) or the Sun Storage 6 Gb SAS PCIe RAID Internal HBA (SGX-SAS6-R-INT-Z or SG-SAS6-R-INT-Z) cards are installed in a system.</p> <p><b>Affected Operating Systems:</b></p> <ul style="list-style-type: none"> <li>■ Red Hat Enterprise Linux (RHEL) 6.0 and later</li> </ul> <p><b>Workarounds:</b></p> <ul style="list-style-type: none"> <li>■ Only execute the <code>lspci -vv</code> command when the system is idle. Do not execute the <code>lspci -vv</code> command in frequent succession.</li> <li>■ Upgrade the firmware of the Sun Storage 6 Gb SAS PCIe Internal HBA or the Sun Storage 6 Gb SAS PCIe RAID Internal HBA to the latest version.</li> </ul>
15697578	<p><b>Error messages are received when running RHEL 5.5 and LSI MegaRAID Storage Manager on a system configured with Sun Storage 6 Gb SAS PCIe RAID Internal HBA or Sun Storage 6 Gb SAS PCIe Internal HBA.</b></p>

Bug ID	Description
	<p><b>Issue:</b></p> <p>This issue applies to a system configured with the Sun Storage 6 Gb SAS PCIe RAID, Internal HBA (SGX-SAS6-R-INT-Z or SG-SAS6-R-INT-Z) or the Sun Storage 6 Gb SAS PCIe, Internal HBA (SGX-SAS6-INT-Z or SG-SAS6-INT-Z). You might receive the following error messages if the system is running the RHEL 5.5 operating system, using the default RHEL 5.5 installation options and the default Security Enhanced Linux (SELinux) software configuration settings:</p> <pre>kernel: mrmokernel: mrmonitord[6058]: mrmonitord[15918]: segfault at 00000000ffffffff rip 00000000ffffffff rsp 00000000ffdab11c error 14</pre> <p>This is because SELinux is preventing mrmonitord from loading <code>/usr/lib/libAlertStrings.so.1.0.0</code>, which requires text relocation. This occurs because the SELinux Streams (LiS) interface and RHEL 5.5, which are both required by the graphical interface to run, cannot install properly on the system due to the default SELinux software mode and policy preventing them from doing so.</p> <p><b>Affected Operating System and Software:</b></p> <ul style="list-style-type: none"> <li>■ Red Hat Enterprise Linux (RHEL) 5.5</li> <li>■ LSI MegaRAID Storage Manager 8.00-5</li> </ul> <p><b>Workarounds:</b></p> <p>To enable the LiS interface to properly install on the system, perform one or both of the following workaround procedures. These workaround procedures provide basic steps to prevent these error messages from occurring. For more information, see the RHEL 5.5 OS documentation at <a href="http://www.redhat.com">http://www.redhat.com</a>.</p> <p>Procedure 1:</p> <ol style="list-style-type: none"> <li>1. Disable the SELinux software temporarily at system boot time by adding the value <code>selinux=0</code> to the kernel line of the GRUB menu.</li> <li>2. Continue the system boot.</li> </ol> <p>Procedure 2:</p> <ol style="list-style-type: none"> <li>1. Disable the SELinux software permanently by editing the <code>/etc/selinux/config</code> file to change the mode of the SELinux software from enforcing to disable or permissive. For example: <pre># vi /etc/selinux/config SELINUX=disabled</pre> or <pre># vi /etc/selinux/config SELINUX=permissive</pre> </li> <li>2. Reboot the system.</li> </ol>

## Oracle VM Known Issue

**TABLE 8** Oracle VM Known Open Issue

Bug ID	Description
15786012	<p><b>Warning appears in dmesg saying 'dbus-daemon' uses 32-bit capabilities.</b></p> <p><b>Issue:</b></p> <p>On 64-bit Oracle VM systems, you might see the following warning in dmesg: warning: 'dbus-daemon' uses 32-bit capabilities (legacy support in use).</p> <p><b>Affected Operating System:</b></p> <ul style="list-style-type: none"> <li>■ Oracle VM 3.0</li> </ul> <p><b>Workaround:</b></p> <p>This message is only a warning and can be safely ignored.</p>

## Windows Known Issues

**TABLE 9** Windows Known Open Issues

Bug ID	Description
15699476	<p><b>Firmware upgrade fails when using IPMIflash on Windows Server 2008 R2 systems.</b></p> <p><b>Issue:</b></p> <p>IPMIflash 1.8.10.4 for Windows Server 2008 R2 (64-bit) fails during the firmware upgrade process. The service processor remains in a consistent state and displays no side effects.</p> <p><b>Affected Operating System and Software:</b></p> <ul style="list-style-type: none"> <li>■ IPMIflash 1.8.10.4</li> <li>■ Windows Server 2008 R2 (64-bit)</li> </ul> <p><b>Workaround:</b></p> <p>Use the Oracle ILOM command-line interface (CLI) or the web interface to perform Oracle ILOM firmware updates.</p> <p>For details, see the Oracle ILOM documentation at: <a href="https://www.oracle.com/goto/ilom/docs">https://www.oracle.com/goto/ilom/docs</a></p> <p><b>Note</b> - The above link goes to a page that includes documentation for Oracle ILOM 3.0, 3.1, ,3.2, and 4.0 Servers with software release 2.0.0 or newer are equipped with Oracle ILOM 4.0.</p>
15702216	<p><b>Service processor reboot causes a system crash on Windows Server 2008 R2 systems.</b></p> <p><b>Issue:</b></p> <p>A service processor reboot might cause a system crash on a system that is running the Windows Server 2008 R2 operating system.</p>

Bug ID	Description
	<p><b>Affected Operating System:</b></p> <ul style="list-style-type: none"> <li>■ Windows Server 2008 R2 (64-bit)</li> </ul> <p><b>Workaround:</b></p> <p>Upgrade the onboard Intel 82576 network interface card (NIC) Windows driver to version 11.4.7.0 or later. The latest Windows drivers are provided with the Tools and Drivers firmware. See <a href="#">“Download Firmware and Software Using My Oracle Support” on page 57</a> for instructions on downloading the latest tools and drivers firmware.</p>
15676534	<p><b>All disks that are attached to Sun Storage 10GbE FCoE PCIe Converged Network Adapter are lost after a system reboot.</b></p> <p><b>Issue:</b></p> <p>When you install a Sun Storage 10GbE FCoE PCIe Low Profile Dual Port Twin-Ax/SR Converged Network Adapter (CNA) (SG-PCIEFCOE2-Q-SR or SG-PCIEFCOE2-Q-TA) on a Sun Server X2-4 that is running the Windows operating system and then reboot the system, you lose access to all of the disks that are attached to the CNA.</p> <p><b>Affected Operating Systems:</b></p> <ul style="list-style-type: none"> <li>■ Windows Server 2008 SP2 (64-bit)</li> <li>■ Windows Server 2008 R2 (64-bit)</li> </ul> <p><b>Workaround:</b></p> <p>There is no workaround. The Windows operating system is not supported with the Sun Storage 10GbE FCoE PCIe CNA.</p>
15712471	<p><b>The SMBIOS HCT test case of the Windows 2008 R2 WHQL certification fails on systems that are configured with 1 TB of memory.</b></p> <p><b>Issue:</b></p> <p>The SMBIOS HCT test case of the Windows 2008 R2 hardware quality testing (WHQL) certification fails on systems that are configured with 1 TB of memory. Software release 1.0 only supports up to 512-GB (8GB x 64) memory on systems that are running the Windows Server 2008 R2 operating system.</p> <p><b>Affected Operating System:</b></p> <ul style="list-style-type: none"> <li>■ Windows Server 2008 R2 (64-bit)</li> </ul> <p><b>Workaround:</b></p> <p>There is no workaround for Software Release 1.0. Software patch release 1.0.1 supports 1 TB (16 GB x 64) of memory for systems that are running the Windows Server 2008 R2 operating system.</p>

## Oracle Integrated Lights Out Manager (ILOM) Known Issues

Starting with system software release 2.0.0, your system is equipped with Oracle ILOM 4.0.2.25 or newer.

- For information about Oracle ILOM on systems with Oracle ILOM 4.0.2.25 or newer, refer to the **Oracle ILOM 4.0 Documentation Library**.
- For information about Oracle ILOM on systems with Oracle ILOM 3.2.6.20 or newer, refer to the **Oracle ILOM 3.2 Documentation Library**.
- For information about Oracle ILOM on systems with Oracle ILOM 3.1.2.50.b or earlier, refer to the **Oracle ILOM 3.0 Documentation Library**.

Oracle ILOM libraries are located at <https://www.oracle.com/goto/ilom/docs>.

**TABLE 10** Oracle ILOM Known Open Issues

Bug ID	Description
23634048	<p><b>Oracle ILOM SNMP v3 Traps Are Not Delivered After SNMP Engine ID Change</b></p> <p>If you change the engine ID, create an SNMP v3 user, and configure an alert using that user without waiting approximately 10 seconds between each action, the internal user configuration might be incorrect and traps are missed.</p> <p><b>Workaround:</b></p> <p>Do not create multiple configuration changes without verifying the effect of each configuration change. To prevent misconfigured users and missed traps, insert sleep statements in the script. For example:</p> <pre># change engineID set /SP/services/snmp engineid=NEWENGINEID # sleep 10 seconds to give snmp enough time to make the change sleep 10 # verify engineID show /SP/services/snmp engineid # verify SNMPv3 users have been deleted show /SP/services/snmp/users  # create snmpv3 user create /SP/services/snmp/users newuser authenticationpassword=... # sleep 10 seconds to give snmp enough time to make the change sleep 10 # verify user show /SP/services/snmp/users newuser # do a snmpget with that user to verify it  # configure alert set /SP/alertmgmt/rules/1 type=snmptrap ... # sleep 10 seconds to give snmp enough time to make the change sleep 10</pre>



Bug ID	Description
	<pre># verify alert show /SP/alertmgmt/rules/1 set /SP/alertmgmt/rules/1 testrule=true</pre>
23564626	<p><b>Third-Party Web Scan and Test Tools Cause Sluggish Oracle ILOM Performance</b></p> <p><b>Issue:</b></p> <p>Under certain conditions, third-party web scanning and test tools can cause Oracle ILOM to run extremely slowly.</p> <p><b>Affected Software:</b></p> <p>System software release 1.6.0.</p> <p><b>Workaround:</b></p> <p>Install system software release 1.6.1 or newer.</p>
None	<p><b>Unable to Launch Oracle ILOM Remote Console.</b></p> <p><b>Issue:</b></p> <p>Due to Java security changes, with the previous Oracle ILOM firmware if you used Java 7 update 51 or newer, you could not launch Oracle ILOM Remote Console. With the new Oracle ILOM firmware (ILOM 3.1.2.24.d) if you use Java 7 update 51 or newer, you can launch Oracle ILOM Remote Console.</p> <p><b>Affected Software:</b></p> <ul style="list-style-type: none"> <li>■ Oracle ILOM</li> <li>■ Java 7 Update 51 or newer</li> </ul> <p><b>Workaround:</b></p> <p>Use Oracle ILOM firmware release 3.1.2.24.d or later.</p>

## Oracle Hardware Installation Assistant Known Issues

**TABLE 11** Oracle Hardware Installation Assistant Known Open Issues

Bug ID	Description
15731356	<p><b>Oracle Hardware Installation Assistant CD does not support remote updating of BIOS, firmware, and operating system drivers.</b></p> <p><b>Issue:</b></p> <p>The Oracle Hardware Installation Assistant CD does not support the remote updating of the latest system BIOS, firmware, and operating system drivers from Oracle.</p> <p><b>Affected Software:</b></p>

Bug ID	Description
	<ul style="list-style-type: none"> <li>■ Oracle Hardware Installation Assistant</li> <li>■ All Sun Server X2-4 Software Releases</li> </ul> <p><b>Workaround:</b></p> <p>There is currently no workaround.</p>
16517092	<p><b>Oracle Linux OS fails to boot occasionally.</b></p> <p><b>Issue:</b></p> <p>When using Oracle Hardware Installation Assistant to prepare the selected disk for Oracle Linux operating system (OS) installation, you need to exit from Oracle Hardware Installation Assistant, then reboot Oracle Hardware Installation Assistant into the prepared disk to complete the installation. Occasionally the installation process stops and this error message appears: “Missing Operating System.” This issue occurs very infrequently, in approximately less than five percent of Oracle Linux installation attempts that use Oracle Hardware Installation Assistant to prepare the disk.</p> <p><b>Affected Software:</b></p> <ul style="list-style-type: none"> <li>■ Oracle Hardware Installation Assistant</li> <li>■ Oracle Linux 6.4 and 5.9</li> </ul> <p><b>Workaround:</b></p> <p>After you exit from Oracle Hardware Installation Assistant, you need to reboot into Oracle Hardware Installation Assistant to complete the OS installation. You can launch Oracle Hardware Installation Assistant using either local or remote media. If you are using remote media, launch Oracle Hardware Installation Assistant from a virtual CD/DVD using remote keyboard, video, mouse (RKVM) through the server's service processor, or a PXE network boot image. To ensure that Oracle Hardware Installation Assistant launches, verify that the respective networks are setup correctly, depending on the launch method you choose. Then, launch Oracle Hardware Installation Assistant and complete the disk preparation step.</p>
18156539	<p><b>Oracle Hardware Installation Assistant GUI fails to launch occasionally.</b></p> <p><b>Issue:</b></p> <p>When launching Oracle Hardware Installation Assistant, the application's graphical user interface (GUI) occasionally fails to appear. This issue occurs very infrequently, in approximately less than five percent of the attempts to launch Oracle Hardware Installation Assistant.</p> <p><b>Affected Software:</b></p> <ul style="list-style-type: none"> <li>■ Oracle Hardware Installation Assistant</li> </ul> <p><b>Workaround:</b></p> <p>You can launch Oracle Hardware Installation Assistant using either local or remote media. If you are using remote media, launch Oracle Hardware Installation Assistant from a virtual CD/DVD using remote keyboard, video, mouse (RKVM) through the server's service processor or a PXE network boot image. To ensure that Oracle Hardware Installation Assistant launches, verify that the respective networks are setup correctly, depending on the launch method you choose. Then, launch Oracle Hardware Installation Assistant.</p>

## Documentation Known Issues

This section lists known documentation issues.

- “Broken Links in Sun Server X2-4 Documentation Library” on page 51
- “Oracle ILOM Documentation” on page 53
- “Antistatic Wrist Straps Are Not Included With All CRUs and FRUs” on page 53

### Broken Links in Sun Server X2-4 Documentation Library

The following documents (HTML and PDF versions) in the Sun Server X2-4 Documentation Library contain broken links (URLs). The correct links are listed below.

#### *Sun Server X2-4 Getting Started Guide*

- Service and Technical Support: <https://support.oracle.com>

#### *Sun Server X2-4 Installation Guide*

- Accessibility for the hearing impaired: <http://www.oracle.com/pls/topic/lookup?ctx=acc&id=trs>
- Oracle Enterprise Manager Ops Center: <http://www.oracle.com/technetwork/oem/ops-center/index.html>

#### *Sun Server X2-4 Installation Guide for Oracle Solaris Operating System*

- Accessibility for the hearing impaired: <http://www.oracle.com/pls/topic/lookup?ctx=acc&id=trs>
- Oracle Enterprise Manager Ops Center: <http://www.oracle.com/technetwork/oem/ops-center/index.html>
- In the Installation Task Overview section of this manual, the link in Step 2 is missing. Use the navigation panel or the bookmarks panel to navigate to Getting Server Firmware and Software.

#### *Sun Server X2-4 Installation Guide for Oracle VM Software*

- Oracle Enterprise Manager Ops Center: <http://www.oracle.com/technetwork/oem/ops-center/index.html>

#### *Sun Server X2-4 Installation Guide for Linux Operating Systems*

- Accessibility for the hearing impaired: <http://www.oracle.com/pls/topic/lookup?ctx=acc&id=trs>
- Oracle Enterprise Manager Ops Center: <http://www.oracle.com/technetwork/oem/ops-center/index.html>
- Novell SUSE Documentation: <https://www.suse.com/documentation/>
- *LSI MegaRAID Storage SAS User's Guide*: <http://avagotech.com/support/resources/doc-library>
- *Sun Storage 6 Gb SAS HBA Internal Installation Guide*: <http://docs.oracle.com/cd/E19337-01/index.html>

*Sun Server X2-4 Installation Guide for Windows Operating System*

- Accessibility for the hearing impaired: <http://www.oracle.com/pls/topic/lookup?ctx=acc&id=trs>
- Oracle Enterprise Manager Ops Center: <http://www.oracle.com/technetwork/oem/ops-center/index.html>
- Microsoft Windows Server 2008 installation documentation: <https://www.microsoft.com/en-us/download/>
- *Sun Storage 6 Gb SAS HBA Internal Installation Guide*: <http://docs.oracle.com/cd/E19337-01/index.html>
- *LSI MegaRAID Storage SAS User's Guide*: <http://avagotech.com/support/resources/doc-library>
- *Microsoft Windows Deployment Services Step-by-Step Guide*: [https://technet.microsoft.com/en-us/library/jj648426\(v=ws.11\).aspx](https://technet.microsoft.com/en-us/library/jj648426(v=ws.11).aspx)

*Sun Server X2-4 Installation Guide for VMware ESXi*

- Accessibility for the hearing impaired: <http://www.oracle.com/pls/topic/lookup?ctx=acc&id=trs>

*Sun Server X2-4 Service Manual*

- Accessibility for the hearing impaired: <http://www.oracle.com/pls/topic/lookup?ctx=acc&id=trs>
- Oracle Enterprise Manager Ops Center: <http://www.oracle.com/technetwork/oem/ops-center/index.html>
- *Weaving High-Performance Multiprocessor Fabric*: <https://software.intel.com/en-us/articles/technical-books-for-multi-core-software-developers>
- *Sun Disk Management Overview*: <http://docs.oracle.com/cd/E19762-01/820-6350-16/index.html>

- *Sun Server CLI Tools and IPMI User's Guide*: <http://docs.oracle.com/cd/E19428-01/821-1600/toc.html>

*Oracle ILOM 3.1 Supplement for Sun Server X2-4*

- Accessibility for the hearing impaired: <http://www.oracle.com/pls/topic/lookup?ctx=acc&id=trs>
- Oracle Enterprise Manager Ops Center: <http://www.oracle.com/technetwork/oem/ops-center/index.html>

## Oracle ILOM Documentation

Starting with system software release 2.0.0, your system is equipped with Oracle ILOM 4.0.2.25 or newer.

- For information about Oracle ILOM on systems with Oracle ILOM 4.0 or newer, refer to the **Oracle ILOM 4.0 Documentation Library**.
- For information about Oracle ILOM on systems with Oracle ILOM 3.2.10.21 or earlier, refer to the **Oracle ILOM 3.2 Documentation Library**.
- For information about Oracle ILOM on systems with Oracle ILOM 3.1.2.50.b or earlier, refer to the **Oracle ILOM 3.0 Documentation Library**.

These libraries are located at <https://www.oracle.com/goto/ilom/docs>.

## Antistatic Wrist Straps Are Not Included With All CRUs and FRUs

The service and installation documentation might state that antistatic wrist straps are included with Customer Replaceable Units (CRUs) and Field Replaceable Units (FRUs). This is not always true. Some CRUs and FRUs are shipped without antistatic wrist straps.



## Getting Server Firmware and Software

---

This section explains the options for accessing server firmware and software.

- [“Firmware and Software Updates” on page 55](#)
- [“Options for Accessing Firmware and Software Updates” on page 56](#)
- [“Software Releases” on page 56](#)
- [“Getting Updates From Oracle Hardware Installation Assistant or My Oracle Support” on page 57](#)
- [“Installing Updates Using Other Methods” on page 58](#)
- [“Oracle Support” on page 59](#)

Customers are required to install the latest available operating system (OS), patches, and firmware versions for optimal system performance, security, and stability.

### Firmware and Software Updates

Firmware and software, such as hardware drivers and tools for the server, are updated periodically. These are made available as a software release. The software release is a set of downloads (patches) that includes all available firmware, hardware drivers, and utilities for the server. All these have been tested together. The ReadMe document that is included with the download explains what has changed and what has not changed from the prior software release.

You should update your server firmware and software as soon as possible after the software release becomes available. Software releases often include bug fixes, and updating ensures that your server software is compatible with the latest server firmware and other component firmware and software. These updates will increase your system performance, security, and stability.

The server product notes list the current server software release and firmware version that are available. To determine which firmware version is installed on your server, you can use either the Oracle ILOM web interface or the command-line interface (CLI).

- From the web interface, click System Information → Summary, then view the property value for System Firmware Version in the General Information table.
- From the CLI, at the command prompt, type: `show /System`

The ReadMe file in the download package contains information about the updated files in the download package, as well as bugs that are fixed with the current release. The product notes also provide information about which server software versions are supported.

## Options for Accessing Firmware and Software Updates

Use one of the following options to obtain the latest set of firmware and software for your server:

- **Oracle Hardware Installation Assistant** – Oracle Hardware Installation Assistant is a factory-installed feature for the Sun Server X2-4 that allows you to easily update server firmware and software.

For more information about Oracle Hardware Installation Assistant, refer to the *Oracle Hardware Installation Assistant 2.5 User's Guide for x86 Servers* at <http://www.oracle.com/pls/topic/lookup?ctx=hia>.

- **My Oracle Support** – All system firmware and software are available from My Oracle Support at <https://support.oracle.com>.

For more information on what is available on the My Oracle Support web site, see “Software Releases” on page 56.

For instructions on how to download software releases from My Oracle Support, see “Download Firmware and Software Using My Oracle Support” on page 57.

- **Other Methods** – You can use Oracle Enterprise Manager Ops Center, Oracle Hardware Management Pack, or Oracle ILOM to update the server software and firmware.

For information, see “Installing Updates Using Other Methods” on page 58.

## Software Releases

Software releases on My Oracle Support are grouped by product family (such as Sun Server), then the product (the specific server or blade), and finally the software release version. A software release contains all the updated software and firmware for your server or blade as a set of downloadable files (patches), including firmware, drivers, tools, or utilities, all tested together to be compatible with your server.



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

My Oracle Support provides the set of software releases for your server as described in the following table. You can obtain these software releases by downloading the files from My Oracle Support. Alternatively, you can download the same firmware and software to your server using Oracle Hardware Installation Assistant.

Package Name	Description	When to Download This Package
Sun Server X2-4 <i>SW_version</i> Firmware (Patch)	Includes Oracle ILOM and BIOS firmware.	You need the latest platform firmware.
Sun Server X2-4 <i>SW_version</i> Oracle Hardware Installation Assistant (Patch)	Includes Oracle Hardware Installation Assistant recovery and ISO update image.	You need to manually recover or update Oracle Hardware Installation Assistant.
Sun Server X2-4 <i>SW_version</i> Tools and Drivers (Patch)	Includes the tools and drivers and platform firmware. This image does not include Oracle VTS.	You need to update a combination of system firmware and OS-specific software.
Sun Server X2-4 (X4470 M2 Server) <i>SW_version</i> Diagnostics (Patch)	Includes Oracle VTS diagnostics image.	You need the Oracle VTS diagnostics image.

## Getting Updates From Oracle Hardware Installation Assistant or My Oracle Support

You can use Oracle Hardware Installation Assistant to easily download and then use the latest software release. For further information and download instructions, refer to the *Oracle Hardware Installation Assistant 2.5 User's Guide for x86 Servers* at <http://www.oracle.com/pls/topic/lookup?ctx=hia>.

You can also obtain updated firmware and software from the My Oracle Support web site at <https://support.oracle.com>. For instructions, see “Download Firmware and Software Using My Oracle Support” on page 57.

### ▼ Download Firmware and Software Using My Oracle Support

1. Navigate to the following web site: <https://support.oracle.com>.
2. Sign in to My Oracle Support.

- 3. Within the Search tab area, click Product or Family (Advanced).**

The Search tab area appears with search fields.
- 4. In the Product field, select the product from the drop-down list.**

Alternatively, type a full or partial product name (for example, Sun Server X2-4) until a match appears.
- 5. In the Release field, select a software release from the drop-down list.**

Expand the list to see all available software releases.
- 6. Click Search.**

The Patch Advanced Search Results screen appears, listing the patches for the software release. See [“Software Releases” on page 56](#) for a description of the available downloads.
- 7. To select a patch for a software release, click the patch number next to the software release version.**

You can use the Shift key to select more than one patch.

A pop-up action panel appears. The panel contains several action options, including the ReadMe, Download, and Add to Plan options. For information about the Add to Plan option, click the associated button and select “Why use a plan?”.
- 8. To review the ReadMe file for this patch, click ReadMe.**
- 9. To download the patch for the software release version, click Download.**

The File Download dialog box appears.
- 10. In the File Download dialog box, click on the patch zip file.**

The patch for the software release version downloads.

## Installing Updates Using Other Methods

In addition to using Oracle Hardware Installation Assistant and My Oracle Support, you can install firmware and software updates using one of the following methods:

- **Oracle Enterprise Manager Ops Center** – You can use Ops Center Enterprise Controller to automatically download the latest firmware from Oracle, or firmware can be loaded manually into the Enterprise Controller. In either case, Ops Center can install the firmware onto one or more servers, blades, or blade chassis.

For information, go to:

<http://www.oracle.com/technetwork/oem/ops-center/index.html>

- **Oracle Hardware Management Pack** – You can use the fwupdate CLI Tool within the Oracle Hardware Management Pack software to update firmware within the system.

For information, refer to the Oracle Hardware Management Pack Documentation Library at:

<https://www.oracle.com/goto/ohmp/docs>

- **Oracle ILOM** – You can use the Oracle ILOM web interface or command-line interface to update Oracle ILOM and BIOS firmware.



**Caution** - If you use Oracle ILOM to update to system software release 1.6, do not use a file on the local server. Instead use a file on a server supporting one of the following protocols: TFTP, FTP, HTTP, or HTTPS. For subsequent updates (after system software release 1.6 is installed) you can use any supported method.

---

For information, refer to the Oracle Integrated Lights Out Manager (ILOM) Documentation Library at:

<https://www.oracle.com/goto/ilom/docs>

## Oracle Support

If you need help getting firmware or software updates, or downloading a complete software application, you can call Oracle Support. Use the appropriate number from the Oracle Global Customer Support Contacts Directory at:

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

