Netra Blade X3-2B (formerly Sun Netra X6270 M3 Server Module)

**Product Notes** 



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### Using This Documentation

This documentation describes late-breaking information and known issues related to the blade, and this documentation includes instructions for downloading and applying software and firmware updates and releases.

- "Related Documentation" on page viii
- "Feedback" on page viii
- "Support and Accessibility" on page ix

# Getting the Newest Firmware and Software

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

You can obtain the newest versions in one of the following ways:

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

For detailed information, see "Getting Blade Firmware and Software" on page 39.

### Related Documentation

Documentation	Link
All Oracle products	http://www.oracle.com/documentation
Netra Blade X3-2B	http://www.oracle.com/pls/topic/lookup?ctx= NetraBladeX3-2B
Sun Netra 6000 Modular System	<pre>http://www.oracle.com/pls/topic/lookup?ctx= Netra6000</pre>
Oracle Integrated Lights Out Manager (ILOM) 3.1	http://www.oracle.com/pls/topic/lookup?ctx=ilom31
Oracle Hardware Management Pack	http://www.oracle.com/pls/topic/lookup?ctx=ohmp

### Feedback

Provide feedback about this documentation at:

http://www.oracle.com/pls/topic/lookup?ctx=NetraBladeX3-2B

# Support and Accessibility

Description	Links
Access electronic support through My Oracle Support	http://support.oracle.com
	For hearing impaired:
	http://www.oracle.com/accessibility/support.html
Learn about Oracle's commitment to accessibility	http://www.oracle.com/us/corporate/accessibility/index.html
Find out about training	http://education.oracle.com

### Updates and Releases

- "Update Available" on page 1
- "Firmware Release History" on page 1

### Update Available

Update SW 1.1 is now available on My Oracle Support.

### Firmware Release History

The following table lists the released versions of the blade firmware.

**Note** – Oracle recommends that you upgrade to the latest system software release. This will ensure you have the latest supported firmware, BIOS, and drivers for your system.

System Software Release	Oracle ILOM SP Firmware	System BIOS	CPLD	
1.1	3.1.2.16 (r74415)	20020300	2.4	
1.0.1	3.1.0.16.a (r72433)	20012100	2.4	
1.0	3.1.0.16.a (r72433)	20012100	2.4	

# System Hardware and Software Features

The following sections describe the hardware configuration requirements and the software features for the Netra Blade X3-2B:

- "Sun Netra 6000 Modular System" on page 3
- "Supported Components" on page 7
- "Supported Operating Systems" on page 8
- "Server Update Information" on page 9
- "Integrated Lights Out Manager (ILOM)" on page 9

### Sun Netra 6000 Modular System

The Netra Blade X3-2B is supported by four Sun Netra 6000 Modular System chassis systems. Two chassis models are AC and two are DC. For some configurations, chassis support for NEMs, storage modules, blades, and PCIe ExpressModules might be different for both systems when the blade is installed. For example, legacy chassis support the blade, however, they might not support newer NEMs, FEMs, and other components.

**Note** – To determine your chassis model, see the *Sun Netra 6000 Modular System Service Manual*.

The following topics describe the supported components and the configuration for each chassis:

- "Supported Components with Legacy Chassis" on page 4
- "Supported Components with New Chassis" on page 5
- "Supported PCIe ExpressModules" on page 6

### Supported Components with Legacy Chassis

Chassis Description	CMM ILOM Firmware	Netra Blade X3-2B
N6000-AC 594-6438	3.x	Supported
N6000-DC 594-6726	3.X	Supported

The Netra Blade X3-2B is currently supported for use in legacy Sun Netra 6000 Modular System chassis (AC or DC) with the following configuration:

- PCIe 2.0 midplane
- Minimum chassis software release: 3.3.3

The following tables list the NEMs, storage modules, and server modules supported by these chassis models when the blade is installed.

**Note** – If a blade or NEM is not listed in the following tables, it *must* be removed from the chassis *before* the Netra Blade X3-2B is installed.

#### Supported NEMs\*

- Sun Blade 6000 10p GbE Pass-Thru NEM (X4250A-N)
- Sun Blade 6000 Virtualized Multi-Fabric 10GbE M2 NEM (X4338A)
- Sun Blade 6000 Ethernet Switched NEM 24p 10 GbE (X2073A-N)

#### Supported Blades

- SPARC T3-1B server module
- SPARC T4-1B server module
- Sun Netra T6320 server module
- Sun Netra T6340 server module
- Netra Blade X3-2B
- Sun Netra T6300 server module (Note: This server module is only supported with the Sun Blade 6000 10p GbE Pass-Thru NEM)

<sup>\*</sup> Additional FEM and REM support might be required for each NEM. See "FEMs and REMs Required for NEMs" on page 7.

#### **Supported Storage Modules**

Sun Netra 6000 Storage Module M3

### Supported Components with New Chassis

Chassis Description	CMM ILOM Firmware	Netra Blade X3-2B
N6000-AC 7100418 594-6893	4.X	Supported
N6000-DC 7100417 594-6892	4.X	Supported

The Netra Blade X3-2B is currently supported for use in these Sun Netra 6000 Modular System chassis models with the following configuration:

- PCIe 2.0 midplane
- Minimum supported chassis software release 4.2

The following tables list the NEMs, storage modules, and server modules supported by these chassis models when the Netra Blade X3-2B is installed:

**Note** – If a module or NEM is not listed in the following tables, it *must* be removed from the chassis *before* the Netra Blade X3-2B is installed.

#### Supported NEMs \*

- Sun Blade 6000 10p GbE Pass-Thru NEM (X4250A-N)
- Sun Blade 6000 Virtualized Multi-Fabric 10GbE M2 NEM (X4338A)
- Sun Blade 6000 Ethernet Switched NEM 24p 10 GbE (X2073A-N)
- Sun Blade 6000 40 GbE Virtualized NEM (7100090)

**Note -** See the chassis product notes for information about the CMM requirements for the 40 GbE NEM.

<sup>\*</sup> Additional FEM and REM support might be required for each NEM. See "FEMs and REMs Required for NEMs" on page 7.

#### Server Modules

- SPARC T3-1B server module
- SPARC T4-1B server module
- Netra Blade X3-2B
- Sun Netra X6275 GbE server module
- Sun Netra X6275 10 GbE server module

#### Storage Modules

Sun Netra 6000 storage module M3

### Supported PCIe ExpressModules

The following PCIe ExpressModules (PCIe EMs) are supported for use with the Netra Blade X3-2B in either the A90–B or A90–D Sun Netra 6000 Modular System chassis.

Туре	Supported PCIe EMs
Gigabit Ethernet and Fibre Channel	<ul><li>Dual 8Gb Fibre Channel and Dual 1 GbE (Emulex)</li><li>Dual 8Gb Fibre Channel and Dual 1 GbE (Qlogic)</li></ul>
Gigabit Ethernet	<ul><li> Quad GigE MMS EM (Powerville)</li><li> Quad GigE UTEP EM (Powerville)</li></ul>
10 Gigabit Ethernet	<ul><li>Dual 10 GbE SFP+</li><li>Dual 10 GbE Base-T Copper</li></ul>
SAS Host Bust Adapter (HBA)	6Gb/s SAS2 ExpressModule HBA
FCoE 10 Gb/s Converged Network Adapter	<ul> <li>Dual 10 GbE FCoE Twin-Ax Converged Network Adapter</li> <li>Dual 10 GbE FCoE SR Optics Converged Network Adapter</li> </ul>
Infiniband	QDR IB-HCA PCI-e

### Supported Components

The following topics describe the supported components installed in the blade:

- "FEMs and REMs Required for NEMs" on page 7
- "Supported CPUs" on page 7
- "Supported Memory" on page 8
- "Supported Storage Drives" on page 8

### FEMs and REMs Required for NEMs

The following fabric expansion modules (FEMs) and RAID expansion modules (REMs) are required to be installed on the blades to support NEMs in the following table:

**Note** – For NEM requirements based on chassis model, see the relevant topic in the section: "Sun Netra 6000 Modular System" on page 3.

Supported NEMs	Required FEM	Required REM
Sun Blade 6000 10p GbE Pass-Thru NEM (X4250A-N)	No FEM required.	No REM required.
Sun Blade 6000 Virtualized Multi-Fabric 10GbE M2 NEM (X4338A)	X4263A-N	SG-SAS6-REM-Z or SG-SAS6-R-REM-Z
Sun Blade 6000 Ethernet Switched NEM 24p 10 GbE (X2073A-N)	X4871A-Z	SG-SAS6-REM-Z or SG-SAS6-R-REM-Z
Sun Blade 6000 40 GbE Virtualized NEM (7100090)	7100283 (ATO) 7100633 (PTO)	SG-SAS6-REM-Z or SG-SAS6-R-REM-Z

### Supported CPUs

The Intel Xeon eight-core E5-2658, 2.1GHz CPU is supported on the blade.

### Supported Memory

Twenty-four registered DDR3 DIMMs with ECC memory slots total (12 slots per CPU). The memory supported for the blade is listed in the following table.

#### Supported Memory

- 8 GB DDR3 LV RDIMM 1600 MHz
- 16 GB DDR3 LV RDIMM -1600 MHz

### Supported Storage Drives

The blade has four SAS 2.5–inch disk bays supporting hard disk drives (HDDs). The supported storage drives are listed in the following table.

#### **Supported Storage Drives**

- 300 GB 10000 rpm SAS-2 HDD
- 600 GB 10000 rpm SAS-2 HDD

**Note** – SATA is not supported, and solid state drives (SSDs) are not supported.

### Supported Operating Systems

The following is a list of the operating systems supported for the blade.

- Oracle Linux (64-bit) 5.7, 5.8, 6.1, 6.2
- Oracle Solaris 10 8/11
- Oracle Solaris 11 11/11 (also available as a preinstalled option)
- Oracle VM 3.0 and 3.1.1. Upgrade (also available as a preinstalled option)

Upgrade 3.0 to a minimum version of Oracle VM 3.0.2 using Oracle eDelivery at https://edelivery.oracle.com or Unbreakable Linux Network (ULN) at https://linux.oracle.com.

- VMware ESXi 5.0 and 5.0 update 1
- RHEL 5.7, 5.8, 6.1, 6.2

8

- SUSE Enterprise Linux 11 SP1 and SP2
- Windows Server 2008 SP2, Windows Server 2008 R2 SP1

### Server Update Information

Server updates are made available to maintain support, add enhancements, or correct issues. Updates can include new versions of firmware (BIOS and SP/Oracle ILOM), new releases of tools and drivers, and updates to any other packaged components. When an update is released the changes are detailed in the update's ReadMe file, which is accessible at the following sources:

- In Oracle System Assistant by clicking the Help button on the System Information page.
- On My Oracle Support (MOS) as the top-level Readme.
- With any server package download from MOS.

#### Related Information

- "Getting Blade Firmware and Software" on page 39
- "Integrated Lights Out Manager (ILOM)" on page 9
- Netra Blade X3-2B Administration Guide

### Integrated Lights Out Manager (ILOM)

Each blade compute node includes a service processor (SP). The SP contains Oracle Integrated Lights Out Manager (Oracle ILOM), which provides IPMI 2.0 compliant remote server management capabilities.

The following interfaces provide network access to Oracle ILOM:

- Integrated Lights Out Manager (ILOM) through the blade node service processor (SP) or Chassis Monitoring Module (CMM)
- Local ILOM command-line access using serial connection
- 10/100 management Ethernet port to midplane
- Remote keyboard, video, mouse, and storage (KVMS) over IP

#### **Related Information**

■ Oracle ILOM Documentation Library at:

(http://www.oracle.com/pls/topic/lookup?ctx=ilom31)

# Hardware, Firmware, and BIOS Issues

This section contains topics that describe hardware, firmware, and BIOS issues for the Netra Blade X3-2B. The following table lists the issues that are covered in this section.

Links to Issues	Workaround?
"Oracle ILOM restore_status Parameter Shows Partial Status (7167938)" on page 12	Yes
"Oracle ILOM 3.1 Might Not Support Clearing of Faults Diagnosed by Oracle Solaris Operating Systems (7170842)" on page 13	Yes
"Power Reset Event Entry in Oracle ILOM Log is Incorrect (7165042)" on page 13	No
"Unable to Change Serial Port Ownership Using BIOS Setup Utility (7168093)" on page 14	Yes
"New BIOS Boot Splash Screen" on page 14	N/A
"Oracle Recommendations for Drive Slot Population and Virtual Drive Creation (7124194)" on page 15	N/A
"PXE-booting Fails When Using Cisco Switch (7149683)" on page 14	Yes
"Blade With Solaris 10 8/11 Fails to Bring Up a Supported NEM After Hot Insertion (7121662)" on page 16 $$	Yes
"UEFI Configuration Settings Might Be Lost When Transitioning Between UEFI and Legacy Boot Modes (7080526)" on page 18	Yes
"Physical Storage Drives Listed Twice on the Sun Netra 6000 Storage Module M2 (7116807)" on page 18	Yes

### ▼ Oracle ILOM restore\_status Parameter Shows Partial Status (7167938)

When an Oracle ILOM UEFI BIOS configuration is loaded, the configuration file might contain typographical errors or inactive parameters (parameters that are no longer valid for the current version of the BIOS). This can result in the failure of one or more parameters to load. When this occurs, the Oracle

ILOM/System/BIOS/Config/restore\_status parameter, which provides the user with the status of the last attempted configuration load, reports the configuration load as a partial restore. The value of /System/BIOS/Config/restore\_status parameter will not change until a subsequent load of an Oracle ILOM UEFI BIOS configuration occurs.

Use the following workaround.

- 1. Using a text editor, create a file with the following contents:
  - <BIOS>
  - </BIOS>
- 2. Save the file with an .xml extension.
- 3. To load the configuration, enter the following command:

-> load -source URI\_location/file\_name.xml /System/BIOS/Config

where *URI\_location* is the path and *file\_name.xml* is the file created in a previous step.

4. If the host power is on, enter the following command to reset the host:

-> reset /System

## ▼ Oracle ILOM 3.1 Might Not Support Clearing of Faults Diagnosed by Oracle Solaris Operating Systems (7170842)

Oracle Integrated Lights Out Manager (ILOM) 3.1 might not be able to clear a fault diagnosed by the following Oracle Solaris operating systems:

- Oracle Solaris 10 (8/11)
- Oracle Solaris 11 (11/11)
- Do one of the following:
  - Use the Oracle Solaris OS to clear the fault.
  - Run the following procedure from the faultmgmt shell of the Oracle ILOM CLI:
    - a. Find the UUID of the faults in the output of fmadm faulty.
    - b. Clear the faults by using the fmadm acquit<UUID> command.

## Power Reset Event Entry in Oracle ILOM Log is Incorrect (7165042)

The following might appear as an entry in the event log when host power is cycled:

To synchronize configuration data between ILOM and UEFI using IPMI "Chassis Control" commands, e.g., ipmitoll chassis power cycle?

16 Fri Apr 27 18:13:31 2012 Power Cycle major /SYS has been cycled by IPMI Request over IPMB interface In the above event, the source of the host power-cycle request is incorrectly identified as IPMI Request over IPMB interface...

In the above event, the source of the host power-cycle request is incorrectly identified as IPMI Request over IPMB interface, when in fact, there is no IPMB interface connected to the SP.

Affected software: Oracle ILOM 3.1 and platform software releases 1.0 and 1.1.

## ▼ Unable to Change Serial Port Ownership Using BIOS Setup Utility (7168093)

By default, the BIOS Setup Utility ownership setting of the external serial port (Advanced>Serial Port Console Redirection>External Serial Port) is assigned to the server service processor (SP) and cannot be changed using the BIOS Setup Utility.

To change the ownership setting, use the Oracle ILOM command-line interface (CLI).

- 1. Log in to the Oracle ILOM CLI.
- 2. To change ownership of the external serial port, type the following command at the CLI prompt:

-> set /SP/serial/portsharing/owner=host

Default value='SP'

### New BIOS Boot Splash Screen

The BIOS boot splash screen has changed.

# ▼ PXE-booting Fails When Using Cisco Switch (7149683)

PXE booting the server fails when using a Cisco switch. This issue has two workarounds:

#### • Do one of the following:

 Log in to exec mode on the serial console of the switch and turn off Spanning Tree:

#### Router(config) #no spanning-tree

■ Enable Portfast enhancement by typing the following command:

**Note** – Portfast is a Cisco enhancement to spanning tree that allows ports to transition from a blocked/disabled/learning/listening state to the forwarding state. Enabling portfast allows devices to send and receive data as soon as the port is initialized.

Switch>enable Switch#configure terminal Switch(config)#spanning-tree portfast default

To check the changes you made, type the following command:

Switch#show spanning-tree interface GigabitEthernet 0/48 portfast

### Oracle Recommendations for Drive Slot Population and Virtual Drive Creation (7124194)

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

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

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

■ Virtual drives must be composed of drives using the same interface only (for example: SAS only).

- Virtual drives must be contained in a single failure domain. The internal Netra Blade X3-2B disks are considered to be a single-failure domain (single-port connections only). One or more Sun Netra 6000 Storage Modules are also considered a single-failure domain. Any virtual drive created on the blade is limited to 4 drives, including the hot-spare drives. The number of virtual drives on Sun Netra 6000 Storage Modules can be up to eight or more drives, depending on the number of Sun Netra 6000 Storage Modules accessible to the blade.
- Use dedicated hot-spares only. Do not use global hot-spares unless they cannot be accessed by another failure domain.
- Dedicated hot-spares must only include drive groups that reside in the same failure domain. Using this method, you can create a "virtual" global hot-spare for any domain.
- SATA/SATA-SSD drives are not supported in Sun Netra 6000 Storage Modules. The chassis Zone Manager does not allow you to zone the drives.
- Only SAS drives are supported in Netra blades; however, if used in the blade, the SAS drives do not run at full speed and cannot utilize the second port.

## ▼ Blade With Solaris 10 8/11 Fails to Bring Up a Supported NEM After Hot Insertion (7121662)

Oracle Solaris 10 8/11 might not initialize and recognize a Sun Netra 6000 Virtualized Multi-Fabric 10GbE Network Express Module M2 NEM when it is hot-plugged. This can happen if the BIOS was not configured to allocate 32 MB of Memory Mapped IO (MMIO) and if a module was not installed in the slot when the OS booted.

If this situation occurs, you might see a message similar to the following in /var/adm/messages:

WARNING: (pcieb9): failed to probe the Connection Slot4

If you intend to hot-plug one or more Sun Netra 6000 Virtualized Multi-Fabric 10GbE Network Express Module M2s into a Sun Netra 6000 M2 Chassis containing an Oracle Netra Blade X3-2B running Oracle Solaris 10 8/11 OS, first allocate 32MB of MMIO for each device using the BIOS Setup program before booting. Perform the following workaround:

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**Note** – This is only necessary if the NEM is not present when the operating system is booted.

- 1. Shut down the affected blade.
- 2. Reboot the server and enter the BIOS Setup Utility.
- 3. Allocate 32 MB of MMIO by changing the BIOS menu option MMIO 32-bit Resource Padding from 16M to 32M.



4. Reboot the server.

# ▼ UEFI Configuration Settings Might Be Lost When Transitioning Between UEFI and Legacy Boot Modes (7080526)

Unified Extensible Firmware Interface (UEFI) boot priority list settings might be lost when transitioning between UEFI Boot and Legacy Boot BIOS modes. One possible scenario for switching between BIOS modes would be the need to access the Pc-Check utility, which only runs in the Legacy Boot mode. UEFI configuration settings should be saved prior to switching between UEFI and Legacy Only BIOS modes.

- 1. Use the ueficonfig application to save the configuration settings prior to transitioning between the BIOS modes.
- 2. Restore the BIOS configuration settings after transitioning back to UEFI mode.

For more information and procedures for saving UEFI configuration settings, see the Oracle ILOM 3.1 Configuration and Maintenance Guide in the

Oracle ILOM Documentation Library at:

(http://www.oracle.com/pls/topic/lookup?ctx=ilom31)

## ▼ Physical Storage Drives Listed Twice on the Sun Netra 6000 Storage Module M2 (7116807)

When the following conditions are present, the physical drives on the Sun Netra 6000 Storage Module M2 might be listed twice:

- Sun Storage 6 Gb SAS REM HBA (SG-SAS6–REM-Z) REM is installed
- System is configured to boot in UEFI mode
- Creating a virtual drive using physical drives located on the Sun Netra 6000 Storage Module
- Two NEMs are installed in the chassis

- Do one of the following before creating a virtual drive:
  - Remove one of the NEMs installed in the Sun Netra 6000 chassis. When this is done, the physical drives are listed once.
    - After the virtual drive has been created, the NEM can be replaced.
  - Create a virtual drive in Legacy Boot mode as follows:
    - a. Boot the server and enter the BIOS Setup Utility.
    - b. Navigate to the Boot menu and change the UEFI/BIOS Boot Mode entry from UEFI to Legacy Boot Mode.
    - c. Select Save Changes and Reset from the Setup Utility Save & Exit tab.
    - d. When the system reboots, press Ctrl-C when prompted to start the SG-SAS6-REM-Z setup utility.
    - e. Create the virtual drive using the SG-SAS6-REM-Z setup utility.
    - f. After creating the virtual drive, return to BIOS setup and change the boot mode back to UEFI.

# Oracle System Assistant Issues

This section contains topics that describe Oracle System Assistant issues for the Netra Blade X3-2B. The following table lists the issues that are covered in this section.

Links to Issues	Workaround?
"User Must Have Full Administrator Role Privileges to Update SP (7158820)" on page 22	Yes
"Some Operating Systems Do Not Mount the Oracle System Assistant USB Device" on page 22	Yes
"Oracle System Assistant Does Not Support Username "user"" on page 22	Yes
"The Virtual Ethernet Device is Reported as Not Installed in Windows 2008 (7129124)" on page 23 $$	Yes
"Oracle System Assistant Cannot be Used to Update a Sun Storage 6 Gb SAS PCIe HBA From Legacy BIOS Firmware to UEFI BIOS Firmware (7123372)" on page 24	Yes
""Path too Long" Errors When Unzipping Windows Downloads (7116803)" on page 25'	Yes
"Popup Message Appears in the Oracle ILOM Web Interface When Launching Oracle System Assistant With the Launch Button (7126194)" on page 25	Yes
"Disks Might Not Appear During an Oracle System Assistant Installation of Windows 2008 R2 SP1 With an SG-SAS6–REM-Z and a Sun Netra 6000 Storage Module M2 (7152565)" on page 26	Yes

# User Must Have Full Administrator Role Privileges to Update SP (7158820)

When updating the Oracle ILOM/SP firmware from Oracle System Assistant using the USB/LAN local host interconnect, a login prompt appears. To perform the firmware update, you must log in as root, administrator, or as a user with advanced (aucro) role privileges.

**Note** – A log-in prompt does not appear when the local host interconnect is not USB/LAN. However, SP update times are increased (up to 40 minutes). The interconnect method is determined by the Local Host Interconnect setting in Oracle ILOM.

## Some Operating Systems Do Not Mount the Oracle System Assistant USB Device

Some operating systems, such as, Oracle VM 3.0, Oracle Solaris 10, and versions of Linux might not automount the Oracle System Assistant USB device. To access the device, you need to manually mount it. For instructions on how to mount the device on Oracle VM 3.0-, Oracle Solaris 10-, and Linux-based systems, see *Netra Blade X3-2B Administration Guide*.

For firmware update procedures, refer to the Netra Blade X3-2B Administration Guide.

## ▼ Oracle System Assistant Does Not Support Username "user"

Oracle System Assistant Service Processor Configuration task does not allow you to create a user with the username, "user." Additionally, while it is possible to create a user named as such using Oracle ILOM, the task does not allow the deletion or modification of that user.

Perform the following workaround:

• Use the Oracle ILOM web interface or command-line interface to create, delete, and modify a user with a username of user.

For instructions on how to use Oracle ILOM, see the Oracle ILOM Documentation Library at: (http://www.oracle.com/pls/topic/lookup?ctx=ilom31)

## ▼ The Virtual Ethernet Device is Reported as Not Installed in Windows 2008 (7129124)

After installing the Windows 2008 R2 drivers, the Windows Device Manager reports that the virtual Ethernet device is not installed. Oracle System Assistant does not provide the driver for this interface. The driver is available with Oracle Hardware Management Pack.

Perform the following workaround:

- Do one of the following:
  - To obtain this driver, install Oracle Hardware Management Pack, which is available as a supplemental tool on Oracle System Assistant.
  - To disable this device and prevent it from appearing in the Windows Device Manager, use the following command:

ilomconfig disable interconnect

# V Oracle System Assistant Cannot be Used to Update a Sun Storage 6 Gb SAS PCIe HBA From Legacy BIOS Firmware to UEFI BIOS Firmware (7123372)

Oracle System Assistant cannot be used to update a Sun Storage 6 Gb SAS PCIe host bus adapter (HBA) from Legacy (non-UEFI) BIOS firmware to UEFI BIOS firmware.

Updating the HBA to Unified Extensible Firmware Interface (UEFI) BIOS firmware requires two consecutive firmware updates. Oracle System Assistant is unable to perform consecutive firmware updates on a single HBA. Instead, use the LSI sas2flash utility.

Perform the following workaround to update the HBA firmware using the LSI sas2flash utility:

- 1. Download the OS version-specific sas2flash utility for the HBA at: http://www.lsi.com/sep/Pages/oracle/sas\_6gbs\_support.aspx
- 2. To identify the controller number, use the sas2flash utility to list all of the installed SAS2 (Sun Storage 6 Gb SAS PCIe) HBAs: -> sas2flash -listall
- **3.** To update the HBA, use the following sas2flash commands, where *n* is the controller number displayed by the sas2flash list command in step **2**.

```
-> sas2flash -c n -f fw-rem-11050000-0a030019.bin
-> sas2flash -c n - b x64sas2-07180207.rom
-> sas2flash -c n - b mptsas2-7210400.rom
```

### ▼ "Path too Long" Errors When Unzipping Windows Downloads (7116803)

When you unzip a downloaded Windows package from MOS using the default Windows Server 2008/2008R2 compression utility, you might get errors stating that the path is too long. Path length is determined by the Windows OS. The maximum path, which includes drive letter, colon, backslashes, name components separated by backslashes, and a terminating null character, is defined as 260 characters.

Perform the following workaround:

- Use a third-party compression utility.
   Unlike the default Windows compression utility, some third-party utilities allow for longer maximum path lengths.
- ▼ Popup Message Appears in the Oracle ILOM Web Interface When Launching Oracle System Assistant With the Launch Button (7126194)

The Oracle ILOM web interface summary page shows the host power status indicator as correctly reflecting the host power status. However, when you click the Oracle System Assistant Launch button, the host power status indicator might no longer correctly reflect the host power status, and the following popup message might appear:

Cannot retrieve host power status

• Dismiss the popup and update the host power state information about the page by refreshing the web browser manually.

▼ Disks Might Not Appear During an Oracle System Assistant Installation of Windows 2008 R2 SP1 With an SG-SAS6-REM-Z and a Sun Netra 6000 Storage Module M2 (7152565)

During Windows installation using Oracle System Assistant, all boot critical drivers are loaded during the WinPE phase. This causes the disks to disappear when the SG-SAS6–REM-Z driver is loaded.

- 1. Before installing Windows 2008 R2 SP1, remove any Sun Netra 6000 Storage Module M2s from the Sun Netra 6000 chassis.
- 2. Reinstall the modules when Windows installation is finished.

## Linux OS Issues

This section contains topics that describe Linux OS issues for the Netra Blade X3-2B. The following table lists the issues that are covered in this section.

Links to Issues	Workaround
"Oracle System Assistant Assisted-OS Installation of SLES 11 Might Prompt for Root Password (7158471)" on page 27	Yes
"Sense Key: Recovered Error messages can appear on the console and in /var/log/messages (7144197, 7158666)" on page 28	Yes
"Unable to Mount Oracle System Assistant USB Device on Some Versions of Linux" on page 29	Yes
"Oracle Linux and RHEL 6.1 grub.efi Cannot Be Used to Set Up a Network PXE Server for Booting UEFI Linux Clients (7095377)" on page 29	Yes
"Failure Occurs After Hot-Inserting a SAS-2 RAID Module (SGX-SAS6-EM-Z) (7088969)" on page 30	Yes
"Too Many PCI Cards or Modules Can Cause the System to Hang (6899040)" on page 31	Yes
"RHEL 6.1 kdump Does Not Work (7133869)" on page 31	Yes

# ▼ Oracle System Assistant Assisted-OS Installation of SLES 11 Might Prompt for Root Password (7158471)

When using Oracle System Assistant to perform an OS-assisted installation of SLES 11, a root password prompt might appear. The method by which the install volume was created (Oracle System Assistant or LSI WebBIOS) determines whether a password prompt appears. If the install volume was created using Oracle System

Assistant (RAID Configuration task), then the password prompt does not appear. If the install volume was created using LSI WebBIOS, then a password prompt appears. and network.

• When the password prompt appears, type the following password:

changeme

# ▼ Sense Key: Recovered Error messages can appear on the console and in /var/log/messages (7144197, 7158666)

For Oracle Linux 5.8 kernel, RedHat Enterprise Linux (RHEL) 5.8 kernel, and the SUSE Linux Enterprise Server (SLES) 11 Base Install, Service Pack 1 kernel with certain hardware configurations, the kernel and smartd service might generate nuisance error messages. Systems using these kernels with smartd monitoring of the block device enabled and with an internal Sun Storage 6 Gb SAS PCIe RAID host bus adapter (HBA) that is connected to a SATA Drive (such as the 7101423 100GB Solid State SATA Drive) running in RAW JBOD mode, might generate and display multiple error messages on the system console or in /var/log/messages that are similar to the following sample.

```
Feb 9 18:24:58 X4270M3host kernel: [9108.314218] sd 0:0:0:0:0 [sda] Sense Key: Recovered Error [current][descriptor]
Feb 9 18:24:58 X4270M3host kernel: [9108.314226]
Descriptor sense data with sense descriptors (in hex):
Feb 9 18:24:58 X4270M3host kernel: [9108.314229] 72 01 00 1d 00 00 00 0e 09 0c 00 00 00 00 00 00 Feb 9 18:24:58 X4270M3host kernel: [9108.314240] 00 4f 00 c2 00 50
Feb 9 18:24:58 X4270M3host kernel: [9108.314246] sd 0:0:0:0:0 [sda] Add. Sense ATA pass through information available.
```

#### Affected hardware and software:

Server-supported Sun Storage 6 Gb SAS PCIe RAID HBAs

- Oracle Linux 5.8
- RedHat Enterprise Linux (RHEL) 5.8
- Do one of the following OS-specific workarounds:
  - For Oracle Linux 5.8 and RHEL 5.8, ignore the messages.
  - **■** For SLES 11 SP1:
    - Update to the latest errata kernel from SUSE.
    - Disable smartd monitoring of all JBOD SATA drives under the Sun Storage 6 Gb SAS PCIe RAID HBA controllers.

Use the smartctl command to disable monitoring of the drive and to verify drive monitor status:

# smartctl -s off /dev/device name

where *device\_name* is the name of the storage drive.

# Unable to Mount Oracle System Assistant USB Device on Some Versions of Linux

See the following entry: "Some Operating Systems Do Not Mount the Oracle System Assistant USB Device" on page 22

V Oracle Linux and RHEL 6.1 grub.efi Cannot Be Used to Set Up a Network PXE Server for Booting UEFI Linux Clients (7095377)

UEFI Linux clients panic if booted from a Oracle Linux or RHEL 6.1 server.

Perform the following workaround:

- Do one of the following before PXE booting from an Oracle Linux or RHEL 6.1 server:
  - Change the BIOS of the Netra Blade X3-2B to Legacy mode.

The server boots.

- a. At system boot, press F2 to enter the BIOS setup menu.
- b. Navigate to the BOOT menu.
- c. Change the UEFI/BIOS Boot mode to "Legacy."
- Update the Oracle Linux 6.1 distribution grub.efi bootloader package on your PXE boot server.

You can obtain updates from ULN at http://linux.oracle.com.

# ▼ Failure Occurs After Hot-Inserting a SAS-2 RAID Module (SGX-SAS6-EM-Z) (7088969)

A failure might occur after hot-inserting a SAS-2 RAID Module (SGX-SAS6-EM-Z) in a Netra Blade X3-2B that is running Oracle Linux 5.7/6.1, Red Hat Enterprise Linux 5.7/6, or SUSE Enterprise Linux 11 SP1. The failure might generate an error message similar to the following:

pciehp 0000:00:02.2:pcie04: Cannot add device at 0000:30:00

Perform the following workaround:

• Reboot the blade with SAS-2 RAID Module (SGX-SAS6-EM-Z) installed.

# ▼ Too Many PCI Cards or Modules Can Cause the System to Hang (6899040)

If many PCI cards or PCIe ExpressModules are installed in the system, the blade might hang while booting OEL 5.7 Xen kernel. The following message might appear on the console:

Starting udev: Wait timeout. Will continue in the background.[FAILED]

Perform the following workaround:

- Do one of the following:
  - Add pci=nomsi in the kernel boot arguments
  - Remove unnecessary PCI cards or modules from the blade or chassis.

# ▼ RHEL 6.1 kdump Does Not Work (7133869)

In OEL 6.1 and RHEL 6.1, kdump might sometimes hang when booting into the second kernel.

Perform the following workaround:

This issue is fixed in Oracle Linux 6.2 and RHEL 6.2.

### Oracle VM and VMware ESXi Issues

This section contains topics that describe Oracle VM and ESXi software issues for the Netra Blade X3-2B.

- "Oracle VM Current Issues" on page 33
- "VMware ESXi Issues" on page 34

### **Oracle VM Current Issues**

This section contains topics that describe Oracle VM OS issues for the Netra Blade X3-2B. The following table lists the issues that are covered in this section.

Link to Issue	Workaround
"Unable to Mount Oracle System Assistant USB Device on Oracle VM 3.0.x (7149878)" on page 33	Yes
"Time of Date Incorrect on Oracle VM 3.0 (7061790)" on page 33	No

# Unable to Mount Oracle System Assistant USB Device on Oracle VM 3.0.x (7149878)

See the following entry: "Some Operating Systems Do Not Mount the Oracle System Assistant USB Device" on page 22

### Time of Date Incorrect on Oracle VM 3.0 (7061790)

The Oracle VM server might boot with the current year set to 2005. The SP and Host TOD and RTC clocks are not synchronized, and the correct clock setting is not persistent between server boots.

### VMware ESXi Issues

This section contains topics that describe VMware ESXi software issues for the Netra Blade X3-2B. The following table lists the issues that are covered in this section.

Link to Issues	Workaround
"ESXi Cannot Mount the Oracle System Assistant USB Device (7154313)" on page 34	No

# ESXi Cannot Mount the Oracle System Assistant USB Device (7154313)

Oracle System Assistant USB device cannot be mounted on ESXi server, but the device can be accessed through the ESXi client after installing GUEST OS.

# Oracle Solaris OS Issues

This section describes issues with the supported Oracle Solaris operating systems for the Netra Blade X3-2B:

- "Oracle Solaris Patch List" on page 35
- "Oracle Solaris 10 and Solaris 11 OS Issues" on page 36

## Oracle Solaris Patch List

CR	Summary	S10 Patch	S11 SRU
6986256	FMA for Intel E5-2600 processors	147706-02	SRU2
6893274	unowned mutex panic in turnstile_block() during thread migration		SRU1
7001739	AVX issue	147441-11	N/A
7034757	Power management issue for E5-2600		SRU4
7058497	Fixes for E5-2600 PCIe root port errata	148172-01	N/A
6956660	Performance counters for Intel E5-2600 processors	147156-01	N/A
7103754	Deadline TSC interrupt storm	N/A	SRU2
7099332	networktest test failing on igb ports	145930-08	SRU4
7041871	defect.sunos.eft.unexpectedtelemetry is generated for CPU error	148173-02	N/A
7093589	Configure of Erie EM fails with ARI enabled	148603-01	SRU4
6938643	Erie EM hot-plug failed to detach driver	148099-01	N/A
6843559	sxge driver for x64 blade platforms	12918641 (MOS)	N/A

### Oracle Solaris 10 and Solaris 11 OS Issues

This section contains topics that describe Oracle Solaris 10 and Solaris 11 OS issues for the Netra Blade X3-2B. The following table lists the issues that are covered in this section.

Links to Issues	Workaround
"Unable to Mount Oracle System Assistant USB Device on Oracle Solaris 10 8/11 OS" on page 36	Yes
"Server With Oracle Solaris 10 8/11 Fails to Bring Up hxge After Hot Insertion (7121662)" on page 36	Yes
"Xorg GUI Might Fail to Start With Certain Hardware Configurations Under Oracle Solaris 11 (7112301)" on page 37	Yes

# Unable to Mount Oracle System Assistant USB Device on Oracle Solaris 10 8/11 OS

See the following entry: "Some Operating Systems Do Not Mount the Oracle System Assistant USB Device" on page 22

# ▼ Server With Oracle Solaris 10 8/11 Fails to Bring Up hxge After Hot Insertion (7121662)

Oracle Solaris 10 8/11 fails to boot a supported NEM (hxge) after hot insertion. If you intend to hot insert one or more Sun Blade 6000 Virtualized Multi-Fabric 10GbE Network Express Modules into a Sun Netra 6000 M2 Chassis that contains an Oracle Netra Blade X3-2B running the Oracle Solaris OS, you must first allocate 32MB of MMIO for each device prior to booting the server. Do this only if you are planning to boot the system without the NEM(s) installed.

Perform the following workaround:

 Before booting and with no Sun Blade 6000 Virtualized Multi-Fabric 10GbE Network Express Modules installed, use the BIOS Setup Utility to allocate 32MB of MMIO for each NEM.

## ▼ Xorg GUI Might Fail to Start With Certain Hardware Configurations Under Oracle Solaris 11 (7112301)

With certain configurations systems containing SR-IOV capable devices might encounter problems with the X11 Xorg graphical user interface (GUI) not starting. Systems running the Oracle Solaris 11 preinstalled operating system software already contain the workaround for this issue. However, if you do a new installation using the Oracle Solaris 11 11/11 Release 1.0 distribution media and observe the X11 GUI failing to start, perform the workaround described below.

- If you are performing a GUI-based installation of the Oracle Solaris OS 11 11/11:
  - Perform steps 1-3 to allow the GUI to start for the installation. Then, on the first boot after the installation, perform all of the steps (that is, steps 1-4).
- If you log in to the system without using the graphical console (text or serial console or Ethernet login):
  - On the first boot after the installation, perform step 4.
- 1. Edit the line in the GRUB file to change the default graphics console to the mode of your preference.
  - a. Press the e key to edit the grub entry.
  - b. Press the e key to edit the following line:

```
kernel /platform/i86pc/kernel/amd64/unix
```

c. Change the default graphics mode to the mode of your preference by appending the following to the end of the line:

```
-kd -B console=mode
```

where *mode* is either **ttya** for a serial console or **text** for VGA text.

For example:

kernel /platform/i86pc/kernel/amd64/unix -kd -B console=ttya or

kernel /platform/i86pc/kernel/amd64/unix -kd -B console=text

- d. Press the Esc key to finish.
- e. Press the b key to boot.
- 2. When the Oracle Solaris OS enters into the debugger, type the following to set a breakpoint at pcie`\_init:

```
[0]>::bp pcie`_init
```

: C

3. When the Oracle Solaris OS hits the breakpoint, type the following to set the variable pcie\_br\_flags:

```
[0]>::pcie_br_flags/W 0
pcie`pcie_br_flags: 0x1 = 0x0
[0]>:c
```

4. To avoid having to set the variable using the debugger, log in to the system and type the following command at the prompt:

```
# echo 'set pcie:pcie_br_flags=0' >> /etc/system
```

# Getting Blade Firmware and Software

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

Description	Links
Learn about blade firmware and software updates.	"Firmware and Software Updates" on page 39
Learn about the options for accessing firmware and software.	"Firmware and Software Access Options" on page $40$
View the available firmware and software packages.	"Available Software Release Packages" on page 40
Access the firmware and software packages through Oracle System Assistant, My Oracle Support, or physical media request.	"Accessing Firmware and Software" on page 41
Install firmware and software updates.	"Installing Updates" on page 45

# Firmware and Software Updates

Firmware and software, such as hardware drivers and tools for the blade, are updated periodically. Updates are made available as a software release. The software release is a set of downloads (patches) that include all available firmware, hardware drivers, and utilities for the blade. All these have been tested together.

Update your blade firmware and software as soon as possible after the software release becomes available. Software releases often include bug fixes, and updating ensures that your blade software is compatible with the latest chassis firmware and other chassis component firmware and software.

A Read Me file in the download package and the *Netra Blade X3-2B Product Notes* contain information about the updated files in the download package, as well as bugs that are fixed with the current release. The product notes also provide information about which blade software versions are supported with the latest chassis firmware.

# Firmware and Software Access Options

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

■ Oracle System Assistant – Oracle System Assistant is a new factory-installed option for Oracle blades that allows you to easily download and install blade firmware and software.

For more information about using Oracle System Assistant, see the *Netra Blade X3-2B Administration Guide*.

■ My Oracle Support – All system firmware and software are available from My Oracle Support at http://support.oracle.com.

For more information about what is available on the My Oracle Support, see "Available Software Release Packages" on page 40

For instructions on how to download software releases from My Oracle Support, see: "Download Firmware and Software Using My Oracle Support" on page 42

■ Physical media request (PMR) – You can request a DVD that contains any of the downloads (patches) available from My Oracle Support.

For information see: "Request Physical Media (Online)" on page 43

# Available Software Release Packages

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

For server modules and blades, the pattern is similar. The product is the server module. Each server module contains a set of releases. These releases are not true software product releases, but releases of updates for the server module. These updates are called software releases and comprise several downloads, all tested together. Each download contains firmware, drivers, or utilities.

My Oracle Support has the same set of download types for this server family as shown in the following table. These can also be requested through a physical media request (PMR). The same firmware and software can also be downloaded using Oracle System Assistant.

Package Name	Description	When to Download This Package
Netra Blade X3-2B <i>version</i> — Firmware Pack	All the system firmware, including Oracle ILOM, BIOS, and option card firmware.	You need the latest firmware.
Netra Blade X3-2B <i>version</i> — OS Pack	An OS pack is available for each supported operating system version. Each OS pack includes a package of all tools, drivers, and utilities for that version of the OS.  Software includes Oracle Hardware Management Pack and LSI MegaRAID software.	You need to update OS-specific drivers, tools, or utilities.
Netra Blade X3-2B — All packs	Includes the Firmware Pack, all OS Packs, and all documents.  This pack does not include SunVTS or the Oracle System Assistant image.	You need to update a combination of system firmware and OS-specific software.
Netra Blade X3-2B <i>version</i> — Diagnostics	SunVTS diagnostics image.	You need the SunVTS diagnostics image.
Netra Blade X3-2B <i>version</i> — Oracle System Assistant	Oracle System Assistant updater and ISO update image.	You need to manually recover or update Oracle System Assistant.

Each of the downloads is a zip file that contains a Read Me and a set of subdirectories containing firmware or software files. The Read Me file contains details on the components that have changed since the prior software release and the bugs that have been fixed. For more details on the directory structure of these downloads, see the *Netra Blade X3-2B Administration Guide*.

# Accessing Firmware and Software

This section covers instructions for downloading or requesting software release files.

**Note** – You can also use Oracle System Assistant to easily download and use the latest software release. For further information, see the *Netra Blade X3-2B Administration Guide*.

There are two other methods for obtaining updated firmware and software.

- "Download Firmware and Software Using My Oracle Support" on page 42
- "Requesting Physical Media" on page 43

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

- 1. Go to: http://support.oracle.com
- 2. Sign in to My Oracle Support.
- 3. At the top of the page, click the Patches and Updates tab.

The Patches and Updates screen is displayed.

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

The screen is displayed with search fields.

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

Alternatively, type a full or partial product name (for example, Netra Blade X3-2B) until a match is displayed.

6. In the Release field, select a software release from the drop-down list.

Expand the folders to see all available software releases.

7. Click Search.

The software release comprises a set of downloads (patches).

See "Available Software Release Packages" on page 40

8. To select a patch, click the check box next to the patch name (you can select more than one patch).

A pop-up action panel is displayed. The panel contains several action options.

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

The download begins automatically.

### Requesting Physical Media

If your processes do not allow downloads from Oracle web sites, you can access the latest software release through a physical media request (PMR).

The following table describes the high-level tasks for making a physical media request and provides links for further information.

Description	Link
Gather information you will need to provide for the request.	"Gathering Information for the Physical Media Request" on page 43
Make the physical media request either online or by calling Oracle Support.	"Request Physical Media (Online)" on page 43
	"Request Physical Media (by Phone)" on page 45

### Gathering Information for the Physical Media Request

You must have a warranty or support contract for your blade in order to make a physical media request (PMR).

Before you make the PMR, gather the following information:

- Obtain product name, software release version, and patches required. It will be easier to make the request if you know the latest software release and the name of the download packages (patches) that you are requesting.
  - *If you have access to My Oracle Support* Follow the instructions in "Download Firmware and Software Using My Oracle Support" on page 42
  - If you do not have access to My Oracle Support Use the information in "Available Software Release Packages" on page 40
- **Have the shipping information ready**. You will need to provide a contact, phone number, email address, company name and shipping address for the request.

### ▼ Request Physical Media (Online)

Gather the information described in "Gathering Information for the Physical Media Request" on page 43

- 1. Go to http://support.oracle.com and sign in.
- 2. Click on the Contact Us link in the upper right corner of the page.
- 3. In the Request Description section, fill in the following:

### a. From the Request Category drop-down list, select the following:

Physical Media Request (Legacy Oracle Products, Primavera, BEA, Sun Products)

b. In the Request Summary field, type:

#### PMR for latest software release for Netra Blade X3-2B

# 4. In the Request Details section, answer the questions shown in the following table:

Question	Your Answer
Is this a physical software media shipment request?	Yes
Which product line does the media request involve?	Sun Products
Are you requesting a required password for a patch download?	No
Are you requesting a patch on CD/DVD?	Yes
If requesting a patch on CD/DVD, please provide the patch number and OS/platform?	Type the patch number for each download that you want from the software release.
List the product name and version requested for the physical media shipment?	Product Name: Netra Blade X3-2B.  Version: Latest software release number.
What is the OS/platform for the requested media?	If you are requesting OS-specific downloads, specify the OS here. If you are requesting system firmware only, type Generic.
Are any languages required for this shipment?	No

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

Knowledge Article 1361144.1

8. Click Submit.

### ▼ Request Physical Media (by Phone)

Gather the information described in "Gathering Information for the Physical Media Request" on page 43

1. Call Oracle support, using the appropriate number from the Oracle Global Customer Support Contacts Directory:

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

- 2. Tell Oracle support that you want to make a physical media request (PMR) for the Netra Blade X3-2B.
  - If you are able to access the specific software release and patch number information from My Oracle Support, provide this information to the support representative.
  - If you are not able to access the software release information, request the latest software release for the Netra Blade X3-2B.

# **Installing Updates**

This section provides information about installing firmware and software updates:

- "Installing Firmware" on page 45
- "Installing Hardware Drivers and OS Tools" on page 46

### Installing Firmware

Updated firmware can be installed using one of the following:

■ Oracle Enterprise Manager Ops Center – Ops Center Enterprise Controller can automatically download the latest firmware from Oracle, or firmware can be loaded manually into the Enterprise Controller. In either case, Ops Center can install the firmware onto one or more server modules, blades, or chassis.

For more information, go to:

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

■ Oracle System Assistant – Oracle System Assistant can download and install the latest firmware from Oracle.

For more information, see the Netra Blade X3-2B Administration Guide.

■ Oracle Hardware Management Pack – The fwupdate CLI tool within the Oracle Hardware Management Pack can be used to update firmware within the system.

For more information, go to:

http://docs.oracle.com/cd/E20451\_01/index.html.

■ Oracle ILOM – Oracle ILOM and BIOS firmware are the only firmware that can be updated using the Oracle ILOM web interface and Oracle ILOM CLI.

For more information, go to:

```
http://www.oracle.com/pls/topic/lookup?ctx=ilom31http://www.oracle.com/pls/topic/lookup?ctx=ilom31http://www.oracle.com/pls/topic/lookup?ctx=ilom31OracleILOM 3.1 Documentation Library.
```

### Installing Hardware Drivers and OS Tools

Updated hardware drivers and operating system (OS)-related tools, such as the Oracle Hardware Management Pack, can be installed using one of the following:

Oracle Enterprise Manager Ops Center

For more information, go to:

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

■ Oracle System Assistant

For more information, see the *Netra Blade X3-2B Administration Guide*.

• Other deployment mechanisms such as JumpStart, Kickstart or third-party tools. For more information, see your OS documentation.

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