Sun Fire™ X2200 M2 Server Product Notes

Sun Microsystems, Inc.
www.sun.com

Part No. 819-6601-22
July 2009, Revision A

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Sun Fire X2200 M2 Server Product Notes

This document contains late-breaking information and issues for the Sun Fire X2200 M2 server.

See the following sections:

General Information

Support for Your Sun Fire X2200 M2 Server

Service support information for the Sun Fire X2200 M2 is available at:

`http://www.sun.com/servers/x64/x2200/support.xml`

Available Sun Fire X2200 M2 Server Documentation

- *Embedded Lights Out Manager Administration guide for the Sun Fire X2100 and Sun Fire X2200 M2 Server*
- *Sun Fire X2200 M2 Server Installation Guide*
- *Sun Fire X2200 M2 Server Service Manual*
- *Where to Find Sun Fire X2200 Server Documentation*
- *Sun Fire X2200 M2 Server Operating System Installation Guide*
- *Sun Fire X2200 M2 Server Safety and Compliance Guide*
- *Sun Fire X2200 M2 Server Product Notes*
- *Quad-Core CPU Upgrade Kit Installation Guide for the Sun Fire X2200 M2 Server*

These documents are available at:

`http://docs.sun.com/app/docs/coll/x2200m2`

Translated versions of some of these documents are available by going to `http://docs.sun.com`, changing the language setting, and navigating to the x64 Servers product category.

Supported Operating Systems

The following list contains the *minimum* versions of supported operating systems for the Sun Fire X2200 M2 server:

Sun FireX2200 M2 Server with AMD Opteron Dual-Core CPU	Sun FireX2200 M2 Server with AMD Opteron Quad-Core CPU
• Solaris 10 6/06 64-bit • RHEL 3.7 32-bit/64-bit • RHEL 4.3 32-bit/64-bit • RHEL 5 32-bit/64-bit • SLES 9 SP3 64-bit • SLES 10 64-bit • VMWare ESX 3.0.2 • VMWare ESX/ESXi 3.5 U2* • Microsoft Windows Server 2003 x64 Standard and Enterprise Edition1 • Windows Server 2008 (supported)	• Solaris 10 5/08 64-bit • OpenSolaris 2008.11 • RHEL 4.5 32-bit/64-bit • RHEL 5.1 32-bit/64-bit • SLES 9 SP4 64-bit† • SLES 10 SP1 64-bit • SLES 11 • VMware ESX/ESXi 3.5 U2 • Microsoft Windows Server 2003 x64 Standard and Enterprise Edition1 • Windows Server 2008 (supported) • VMware 4.0 ESX/ESXi

* BIOS level limitation. See "VMware ESX 3.5 U2 Crashes on Dual-Core CPU Servers With BIOS v3D12" on page 43.

† Patch required. See "SLES 9 SP4 Support on Quad-Core CPU Servers: Patch Required" on page 42.

- An updated list of supported operating systems is available at:

  `http://www.sun.com/servers/x64/x2200/os.jsp`

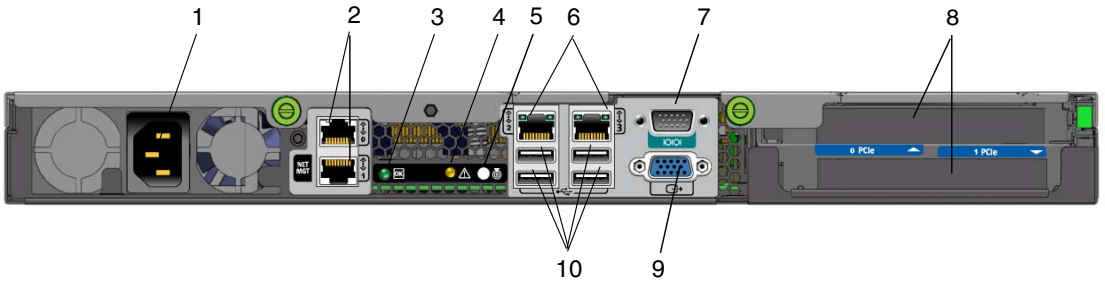
- For issues related to your OS, see "Operating System Issues" on page 38.

Document Errata

Current versions of the *Sun Fire X2200 M2 Installation Guide* and the *Sun Fire X2200 M2 Service Manual* incorrectly represent the back panel of the server. In Figure 1-2, the positions of the Power LED and the System ID button/LED are incorrect.

The correct positions and call outs are as shown in the illustration below.

This information will be added to the next revision of both the Sun Fire X2200 M2 Installation Guide and the Sun Fire X2200 M2 Service Manual



Legend for Illustration:

1	Power connector	**6**	NVIDIA Ethernet connectors (LAN-2 left, LAN-3 right)
2	Broadcom Ethernet connectors (LAN-0 top, LAN-1 NET MGT bottom)	**7**	Serial management/DB9 RS-232 serial port
3	Power LED	**8**	PCI-Express slots
4	Fault LED	**9**	Onboard HD15 video connector
5	System identification button/LED	**10**	USB 2.0 connectors (4)

Quad-Core Upgrade Information

This section contains general information pertaining to the quad-core CPU upgrade kits and the enhanced quad-core CPU X-Option. The kits and X-Option are designed to facilitate all possible Sun Fire X2200 M2 server quad-core CPU upgrade paths.

Two Quad-Core CPU Upgrade Kits Available

Two quad-core CPU upgrade kits are available. Each kit provides the necessary hardware to upgrade a Sun Fire X2200 M2 server from a dual, dual-core CPU to a dual, quad-core server. However, one kit allows upgrades to AMD Opteron™ Quad-Core CPUs, and the other kit allows upgrades to AMD Opteron Enhanced Quad-Core CPUs.

The kits are designated as:

- Quad-Core CPU Upgrade Kit
- Enhanced Quad-Core CPU Upgrade Kit

Upgrade Kit Contents

The upgrade kits contain the following:

Quad-Core CPU Upgrade Kit Contents
2-Quad-Core *or* Enhanced Quad-Core CPUs
2-Heatsinks (with pre-applied thermal compound)
1-Preflashed 1M Firmware PROM
1-Antistatic wrist strap
1-PLCC Extraction Tool
1-Where to Find pointer document

Upgrade paths and the necessary required hardware are listed in the section, "Quad-Core CPU Upgrade Configuration Options" on page 6.

For upgrade instructions, see the *Quad-Core CPU Upgrade Kit Installation Guide for the Sun Fire X2200 M2 Server* posted online with the server's document collection.

Enhanced Quad-Core CPU X-Option Available

In addition to the quad-core upgrade kits, an Enhanced Quad-Core CPU X-Option is also available for the Sun Fire X2200 M2 server. Unlike the upgrade kits, the X-Option contains one AMD Opteron Enhanced Quad-Core CPU and one heatsink *only*.

- The X-Option is designed for upgrading a *single* quad-core CPU to an enhanced quad-core CPU.
- Upgrading a *dual* quad-core CPU server to a *dual* enhanced quad-core CPU server requires *two* Enhanced Quad-Core CPU X-Options.

Note – The Enhanced Quad-Core CPU X-Option does *not* contain a firmware PROM.

- The X-Option does *not* contain a firmware PROM. Therefore, it does not contain the necessary hardware to upgrade a dual-core CPU server to an enhanced quad-core CPU server. For this upgrade path, you must use the Enhanced Quad-Core CPU Upgrade Kit. Upgrade paths and the necessary required hardware are listed in the next section, Quad-Core CPU Upgrade Configuration Options.

Quad-Core CPU Upgrade Configuration Options

The table below lists the possible CPU upgrade configuration paths (options) and the required hardware. To use the table, locate your current configuration and match it to the new configuration. The hardware required is listed in the last column.

Option #	Current CPU Configuration	New CPU Configuration	Hardware Required
1	2 Dual-Core	2 Quad-Core	1-Quad-Core CPU Upgrade Kit
2	2 Dual-Core	2 Enhanced Quad-Core	1-Enhanced Quad-Core CPU Upgrade Kit
3	2 Dual-Core	1 Enhanced Quad-Core	1-Enhanced Quad-Core CPU Upgrade Kit **Note -** Kit contains two CPUs. Use one CPU in socket CPU0 *only.*
4	2 Quad-Core	1 Enhanced Quad-Core	1-Enhanced Quad-Core CPU X-Option **Note -** Use one CPU in socket CPU0 *only.* Update to enhanced quad-core BIOS *before* upgrading.
5	2 Quad-Core	2 Enhanced Quad-Core	2-Enhanced Quad-Core CPU X-Options **Note -** Update to enhanced quad-core BIOS *before* upgrading.

Quad-Core Upgrade-Related Information and Issues

This section lists software, hardware, and firmware issues related to upgrading your server to quad-core or enhanced quad-core processors.

- "Review Minimum Supported Operating Systems Before Performing the Quad-Core CPU Upgrade" on page 7
- "Linux-Related Quad Core Issues" on page 7
- "Solaris 10 5/08 is the Minimum Supported OS for Quad-Core CPU" on page 7
- "Update BIOS Before Upgrading to Enhanced Quad-Core CPU" on page 8
- "Both Quad-Core and Dual-Core CPU Firmware Available on Tools and Drivers CD" on page 8

Review Minimum Supported Operating Systems Before Performing the Quad-Core CPU Upgrade

Before upgrading to quad-core CPUs, review the minimum supported OS list, "Supported Operating Systems" on page 3. The list is also available online at:

`http://www.sun.com/servers/x64/x2200/os.jsp`

Linux-Related Quad Core Issues

- SLES 9 SP4
  - "SLES 9 SP4 and AMD Opteron Quad-Core CPU Power Management-Related Warning Messages and Support" on page 42
  - "SLES 9 SP4 Support on Quad-Core CPU Servers: Patch Required" on page 42
- RHEL
  - "Quad-Core CPU Requires RHEL 5.1" on page 43

Solaris 10 5/08 is the Minimum Supported OS for Quad-Core CPU

The minimum supported Solaris 10 OS for quad-core CPU is **Solaris 10 5/08**.

The minimum supported Solaris 10 OS version is incorrectly stated in the previous version of the *Sun Fire X2200M2 Product Notes* (-20, December 2008) and the current version of the *Sun Fire X2200 M2 Operating System Installation Guide* (819-6599-14, April 2008).

This information will be corrected in the next version of the *Sun Fire X2200 M2 Operating System Installation Guide*.

Both Quad-Core and Dual-Core CPU Firmware Available on Tools and Drivers CD

Both dual-core and quad-core CPU firmware update files are available beginning with Tools and Drivers CD v2.0. See "BIOS and SP Versions Available on Tools and Drivers CD Releases" on page 11.

Update BIOS *Before* Upgrading to Enhanced Quad-Core CPU

Before you upgrade from quad-core CPUs to enhanced quad-core CPUs, update the BIOS to *at least* version 3D12. This is the first BIOS version that supports enhanced quad-core CPUs.

Firmware Update Script Informational Message

When updating BIOS and SP firmware, the update script automatically checks the PROM size and loads the appropriate BIOS.

The script displays one of the following *informational* warning messages:

- If the system contains a 512 Kbyte (dual-core) BIOS flash PROM:

```
Warning: The system contains 512k BIOS flash ROM. The BIOS only
supports AMD Dual-Core processors.
```

- If the system contains a 1 Mbyte BIOS flash PROM:

```
Warning: The system contains 1M BIOS flash ROM. The BIOS only
supports AMD Dual-Core & Quad-Core processors.
```

The script prompts for a *Yes* or *No* to continue. Select *Yes* to perform the upgrade using the correct file.

Micron 4 GB DIMMs and Quad-Core CPUs.

See "Boot Failures and System Crashes With 4 GB DIMMs and Quad-Core CPUs" on page 21.

Error: File Size Does Not Match ROM Size.

See "ERROR: File Size Does Not Match ROM Size! Use the Correct File or Upgrade ROM" on page 16.

Tools and Drivers CD v2.2 Released

Note – Sun recommends that you update your server's firmware (BIOS and SP) to the latest version.

An ISO image of the Tools and Drivers CD is available online for download at:

`http://www.sun.com/servers/x64/x2200/downloads.jsp`

New Features in Tools and Drivers CD v2.2

The following is a list of new features available in the Tools and Drivers CD v2.2.

BIOS/SP

- Dual-core BIOS v3B27
- Quad-core BIOS v3D15
- SP v3.23

New Functionality and Updates

- AST 2000 v0.88 driver
- Windows 2003 NVIDIA driver package v9.27
- Solaris OS Broadcom driver version sol86-11.7.0
- OS support for VMware 4.0 ESX/ESXi
- OS support for OpenSolaris v2009.06
- OS support for RHEL 5U3
- OS support for RHEL 4U7
- OS support for SLES 11
- PC-Check updated to 6.22s

Fixes or Resolved Issues

- CHDSK on Windows 2003 causes system hang with subsequent boot failure (CR6827060)
- kernel_drive ELOM CGI parameters need better checking (CR 6813139)
- ESX 3.5 U2 could not be launch with AMD CPU dual-core 2222 CPU (CR 6767722)
- Fan reporting shows 0 RPMs for functioning and operational fans (CR 6618559)
- ELOM filtrates special character strings (CR 6814936)

Firmware Update Information

The following information is related to the BIOS and SP firmware update process:

- "BIOS and SP Versions Available on Tools and Drivers CD Releases" on page 11
- "Remote Firmware Update Information" on page 11

BIOS and SP Versions Available on Tools and Drivers CD Releases

The following table lists the BIOS and SP versions available on each release of the Tools and Drivers CD.

Tools and Drivers CD Version	BIOS Version Dual-Core/Quad-Core	SP Version
1.1	3BB5/none	1.60
1.2	3B10/none	1.91
1.3	3B13/none	2.70
1.4	-3B16/none	2.91
1.5a	3B17/none	3.09
1.6	3B25/none	3.13
2.0	3B25/3D08	3.15
2.1	3B26/3D12	3.20
2.2	3B27/3D15	3.23

All versions of the Tools and Drivers CD are available online at:

http://www.sun.com/servers/x64/x2200/downloads.jsp

Remote Firmware Update Information

The following table describes what happens when you update the BIOS/SP firmware remotely (not using the bootable Tools and Drivers CD method).

Note – Test the update on *one* system *before* performing a remote multiple system update.

When *remotely* updating Firmwaer from this Tools and Drivers CD version	To Firmware on this Tools and Drivers CD version	The following occurs
1.1	1.3	Optimized defaults are loaded and customized BIOS settings are lost.
1.2	1.3	The CMOS settings are preserved. PowerNow disabled by default.
1.1	1.4 - 1.6	Optimized defaults are loaded and customized BIOS settings are lost.
1.2	1.4 - 1.6	*Not recommended*. The update process requires user intervention, see "Firmware Update from v1.2 to v1.4 (or later) Not Recommended for Remote Updates" on page 17.
1.3	1.4 - 1.6	Option exists to either load optimized defaults or preserve the CMOS settings; see "Option to Preserve or Clear CMOS Settings During Update" on page 19.
1.4	1.5 - 1.6	Option exists to either load optimized defaults or preserve the CMOS settings; see "Option to Preserve or Clear CMOS Settings During Update" on page 19.
1.5	1.6	*Not recommended*. Only the SP firmware is updated. The BIOS firmware is not updated. See "Firmware Update from v1.5 to v1.6 Not Recommended for Remote Updates" on page 17
1.6 (or earlier)	2.1 - 2.2	*Not recommended*, BIOS flash PROM size is not the same.

BIOS and SP Firmware Issues

The following issues relate to the BIOS and SP firmware:

ELOM Functionality Limited and Inconsistent with Non-English Keyboards

With non-English keyboards functionality of the ELOM might be limited and inconsistent between firmware versions. International keyboards are not supported on ELOM. (CR 6779242)

Workaround:

Use an English keyboard to access ELOM.

Recovering From a Corrupt SP

This section contains SP recovery procedures for the Sun Fire X2200 M2.

This procedure will be added to a future revision of the Service Manual.

Before You Begin:

You need the following:

- A DOS-bootable USB flash device
- A jumper cap
- CD/DVD burner or ISO image file mounting capabilities

▼ To Recover From a Corrupt SP

1. **Download the Tools and Drivers CD ISO image file from the Sun Fire X2200 M2 download site.**

   `http://www.sun.com/servers/entry/x2200/downloads.jsp`

2. **Mount the ISO image or burn a CD using the ISO image file and insert the CD into a CD/DVD drive.**
3. **Insert the bootable USB device into the USB port.**
4. **Copy all the files from the `BMCrecovery` directory on the Tools and Drivers CD or mounted ISO image to the bootable USB device.**
5. **Remove the AC power from the server, and, if necessary, remove the server from the rack.**
6. **To access the server motherboard, remove the server top cover.**
7. **Using a jumper cap, short the pins of jumper J34.**

   J34 is located on the server motherboard between CPU0 and the fan.

8. **Set up the server with a KVM so that you can respond to server POST messages.**
9. **Apply AC power to the server.**
10. **Remove any CD/DVD media from the server's CD/DVD drive.**
11. **Insert the DOS-bootable USB device into the server's USB port.**
12. **Power on the server.**
    - The server might take up to three minutes to complete POST.

- A message appears stating that the BMC is not found

13. **To enter the BIOS Setup Utility, watch the output for the BIOS prompt and press F2 when prompted.**

    The BIOS Setup Utility main screen appears.

14. **Set the USB device as the first or primary boot device.**

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

    The server boots from the USB device and a DOS prompt appears.

16. **At the DOS prompt, enter the following command:**

    ```
    socflash.exe s39v090.bin backup.bin
    ```

    The SP flash process begins.

17. **When the flash process finishes, remove the AC power from the server and the jumper cap from jumper J34.**

18. **Prepare the server for operation and boot the server.**

Recommended: Update to SP v3.20 (or Later) to Strengthen ELOM Security

Sun recommends that you update your server's SP firmware to *at least* SP v3.20 (or later). SP v3.20 strengthens security and is available on Tools and Drivers CD v2.1.

BIOS v3D12 and VMware 3.5 U2 on Dual-Core CPU Servers

See "VMware ESX 3.5 U2 Crashes on Dual-Core CPU Servers With BIOS v3D12" on page 43.

ERROR: File Size Does Not Match ROM Size! Use the Correct File or Upgrade ROM

The following error message might occur during the BIOS and SP firmware update process:

```
ERROR: File size does not match ROM size! Use the correct file or
upgrade ROM
```

The error indicates that you are attempting to flash the PROM with the incorrect file. There are two firmware files on the Tools and Drivers CD. One file is for servers with dual-core CPUs and a 512 Kbyte PROM, and the other file is for servers with quad-core CPUs and 1 Mbyte PROM. The 1 Mbyte file is not compatible and will not fit on the 512 Kbyte PROM. To flash the PROM you must use the correct file.

SP Reset Causes Loss of Date and Time Synchronization

When the SP is reset, time synchronization between the SP and BIOS is lost. As a result, the SP date is reset to 01/01/1970, and the time is reset to 00:00.

This issue is resolved with Tools and Drivers CD v2.1 (and later).

Workarounds:

- **Update the BIOS and SP using the Tools and Drivers CD v2.1 (or later).**

  –or–

To synchronize time settings:

1. **Log in to the ELOM web GUI.**
2. **From the main menu, click the Configuration tab.**
3. **Click the Clock Setting submenu tab.**
4. **Select the NTP server radio button for clock synchronization.**
5. **Enter the NTP server IP address in the IP address field.**
6. **Click Submit.**

Firmware Update from v1.5 to v1.6 Not Recommended for Remote Updates

When updating the firmware from v1.5 to v1.6, using a remote update procedure, only the SP firmware is updated. The BIOS does not update.

Workaround:

- **To update both the SP and the BIOS firmware, update the firmware locally using a physical v1.6 Tools and Drivers CD.**

Multiple System Firmware Update 1.2 to 1.3

Firmware version 1.2 had PowerNow *enabled* by default. Version 1.3 has PowerNow *disabled* by default. The update process preserves CMOS settings, and leaves PowerNow enabled. Therefore, as a workaround you should load optimized defaults in the BIOS following the update to version 1.3. This disables PowerNow.

For a multiple system update, take advantage of functionality within version 1.3 that defaults the flash update to load optimized defaults, rather than preserve CMOS settings.

Workaround:

Use this workaround procedure to update multiple systems and disable PowerNow:

1. **Flash update from version 1.2 to version 1.3 (PowerNow enabled).**
2. **Re-flash version 1.3 (PowerNow disabled).**

Firmware Update from v1.2 to v1.4 (or later) Not Recommended for Remote Updates

During the update from BIOS v1.2 to BIOS v1.4 (or later), a checksum error occurs which requires user intervention.

Workaround:

- **To avoid user intervention, when remotely updating multiple systems with a script or N1SM, you should update to v1.3 *before* updating to v1.4 (or later).**

Firmware Downgrade Information

Use the option to preserve CMOS settings when downgrading firmware from release 1.4 to an earlier version, see "Option to Preserve or Clear CMOS Settings During Update" on page 19

Note – Some downgrade paths might require user intervention due to checksum errors. Always test the downgrade on one system before performing a remote multiple system downgrade.

Baud Rate for the Internal Serial Port and COM2 Must be the Same Value

With the update available on the Tools and Drivers CD v1.5, BIOS v3B17 allows you to set the COM2 baud rate, and BMC v3.09 allows you to set the internal serial port. The default baud rate setting for both COM2 and the internal serial port is 9600. If you to change one bandwidth setting, you must change (match) the other bandwidth setting to the same value.

Scripting the SP/BIOS Flash Process

The SP/BIOS flash process includes a "Update Successful" message when the SP flash process ends. This message signals the end of the SP flash activity *only*. At this point in the process the BIOS is *not* flashed, and interrupting the process might corrupt the BIOS.

To avoid corrupting the BIOS review the flash sequence below:

Note – Before writing a script to flash the BIOS/SP remotely observe the sequence in real-time and test the script on a single system before updating a group of systems.

---

1. **SP begins the flash process.**
2. **SP completes the flash process.**
3. **CLI returns an Update Successful message.**
4. **The system reboots and the BIOS begins the flash process.**

5. **The BIOS flash process completes.**

Possible ECC Errors When PowerNow Enabled

When PowerNow is enabled, the system may report ECC errors.

Workaround:

To resolve this issue, disable PowerNow in the BIOS.

1. **Reboot the system.**
2. **Press F2 to enter the BIOS Setup Utility.**
   The BIOS Setup Utility screen appears.
3. **Use the arrow keys and navigate to Advanced –> AMD PowerNow Configuration –> PowerNow.**
4. **Set the PowerNow option to Disable.**
5. **Press F10 to save and exit.**

Option to Preserve or Clear CMOS Settings During Update

Beginning with the Tools and Drivers CD v1.3, an option is available during the update process to either *preserve* or *clear* the CMOS. The default is set to ClearCMOS. This avoids BIOS checksum errors and facilitates remote updates. The option to preserve CMOS settings has no use when updating from v1.3 to later versions of the Tools and Drivers CD, because the CMOS layout has changed.

Firmware Update Options

The firmware update options in the ELOM have changed. Included in the Tools and Drivers CD v1.3 are two methods for updating the firmware remotely.

- "Web Interface Changed" on page 20
- "CLI Changed" on page 20

Web Interface Changed

There are two additional options in the Control –> Firmware Update screen. Both methods described below preserve the SP settings. The options are:

- Method A: Updating firmware clears the system BIOS CMOS data and loads optimized defaults. This method requires no user interaction but clears CMOS settings.

  Method A is recommended for users who would like no manual interaction during the update. The downside of this method is the loss of customized BIOS settings, and the need for user interaction to restore the lost settings. Some examples of customized settings are:

  - OS set to Windows
  - NVRAID configured
  - Customized settings for performance
- Method B: Update firmware preserving the system BIOS data. This method requires user interaction, but preserves CMOS settings

  Method B is recommended for users that would like the firmware to preserve the user's customized BIOS settings.

CLI Changed

Included is an additional option to use before updating the BIOS CMOS: `UpdateMethod`

To clear the system BIOS CMOS and load optimized defaults, enter:

–> **`set UpdateMethod=ClearCMOS`**

To update the firmware and preserve the system BIOS date, enter:

–> **`set UpdateMethod=PreserveCMOS`**

Note – Refer to the *Embedded Lights Out Manager Administration Guide* for more information about updating the firmware using both the web interface and CLI.

Hardware Issues

The following issues apply to the Sun Fire X2200 M2 server hardware:

- "Mixing DIMMs Impacts Memory Performance" on page 21

Mixing DIMMs Impacts Memory Performance

For optimum performance, all DIMMs controlled by a given CPU should be the same capacity and all single-rank or dual-rank. Mixed configurations are supported, but could result in lower memory performance. Note that all supported 4GB and 8GB DIMMs are dual-rank. For 1GB and 2GB DIMMs, you can identify the type by counting the DRAMs; single-rank DIMMs, have 18 DRAMs, while dual-rank DIMMs have 36 DRAMs.

Boot Failures and System Crashes With 4 GB DIMMs and Quad-Core CPUs

Some Micron 4 GB DIMMs supplied for use with a dual-core CPU server can have single-bit or multiple bit errors *after* the server is upgraded to *quad-core CPUs*. Symptoms include sudden crashes and failure to boot. Not all existing Micron 4 GB DIMMs are affected.

If you recently upgraded your server to quad-core CPUs, or if you are planning to upgrade your server to quad-core CPUs, you should inspect the label on any existing 4 GB DIMMs. Affected DIMMs have the following three identifiers on the label: a Micron product logo, a specific vendor part number, and a manufacture date prior to the 32nd week of the year 2008.

To determine if you have affected DIMMs installed in your server:

- **Use the sample label and the information presented here to visually inspect the 4 GB DIMMs in your server:**

The affected DIMMs can be identified by the Micron logo and the first two number strings on the label.

- Affected DIMMs have a Micron product logo, as shown in the above illustration.
- The first string is an alpha-numeric string. This is the vendor's part number. On affected DIMMs the part number is MT36HTF51272PY-667E.
- The second number string is the manufacturing date code. On affected DIMMs the string is a value *lower* than 200832, indicating that the DIMM was manufactured before the 32nd week of 2008.

For example, the DIMM label in the above illustration indicates that this Micron DIMM is *not* compatible with a quad-core CPU. To obtain a replacement, contact Sun Service and refer to FAB 244406.

Unable to Boot From the Network When Using the Sun Storage J4500

When the server is attached to a Sun Storage J4500 disk array (JBOD), the server might fail to boot when the network boot option is selected (pressing F12 when booting). The server only supports 8 boot devices. One of those devices is reserved for the server's CD/DVD drive. The remaining 7 options are allocated to drives within the Sun Storage J4500. Therefore, network boot options are not present in the server BIOS's device priority list.

This issue is resolved with Tools and Drivers CD v2.1.

Workarounds

- **Update system using Tools and Drivers CD v2.1.**

  –or–

- **Use the HBA's BIOS configuration utility to disable boot support for the HBA.**

  For example, for the StorageTek SAS RAID 8-Port HBA, enter the HBA's BIOS setup utility's Select menu and disable the HBA's runtime BIOS setting. Disabling the runtime BIOS setting prevents the HBA from being used as a boot device.

  When you no longer require network boot and wish to use the HBA as a boot device, go back into the HBA BIOS configuration utility and enable the HBA's runtime BIOS setting

PCI Express Card and Slot Issues

The following issues relate to the installation of PCI Express (PCIe) cards:

Ultra-320 PCIe (SG-XPCIE2SCSIU320Z)

- **New Cable**: For the Ultra-320 PCIe (SG-XPCIE2SCSIU320Z), order cable X3832A-Z. The original cable (X3830A-Z) has been modified and no longer fits.
- **Slot Restriction**: For the Ultra-320 PCIe (SG-XPCIE2SCSIU320Z), there is a slot restriction associated with this card. Mechanical clearance issues associated with cabling limit this card to the top x8 slot (PCIe-0 slot). Do not insert this card into the lower PCIe-1) slot.

Infiniband card (X1236A-Z)

- **Slot Restriction**: For the Infiniband card (X1236A-Z), there is a slot restriction for early generations of the riser assembly. If you have an early version of the riser assembly, you can only install this card in the lower PCIe x8 slot (PCIe-1 slot). When you use this card in the top slot, cabling to the card causes a mechanical interference.

  This restriction is limited to a small number of early systems. To identify an early version of the riser assembly, check if the riser assembly is protruding out the back of the system beyond the top cover, approximately 2.5 mm.

Slot-Related Limitation

- **Support Limitation**: The x16 PCIe card slot and riser assembly only supports the Nvidia Quadro Plex Graphic Interface Card (QPIC). The QPIC provides support for Nvidia Quadro Plex.

DDR2-667 DIMMs

If more than four DIMMs are configured per CPU, the memory for that CPU clocks down to 533 MHz.

Front USB Port Cable Length Limitations

The front USB ports support a 3-meter cable to an attached device.

System Management: General Issues

The following issues relate to system management of the Sun Fire X2200 M2 Server:

Special Characters In Passwords

Some ELOM versions prior to v3.15 did not allow the use of special characters in login passwords. SP firmware v3.15 allows the use of alpha-numeric characters (0-9, A-Z, a-z) and special characters, with the exception of the following seven:

`< | > \` These four characters are not permitted for security reasons.

`& " '` These three special characters are reserved, and not permitted.

When creating passwords do *not* use the characters listed above. SP firmware v3.15 is available on the Tools and Drivers CD v2.0.

15 Character Passwords Truncated When Using SSH Login

When connecting to the SP using SSH, passwords that are 15 characters long are truncated. Only the first eight characters are used. The remaining 7 characters are not used and not needed.

SP Upgrade Recommended: Web Server Security Strengthened

Sun Fire X2200 M2 server systems with SP/BMC firmware v2.91 (and earlier versions) have susceptibility to unauthorized access.

Workaround:

- **To strengthen system security, upgrade the SP to v3.09. Use the Tools and Drivers CD v1.5 or later.**

Sun highly recommends this upgrade for Sun Fire X2200 M2 servers.

Service Processor Connectivity Issues With Shared NIC During Network Install

Performing a network install (RIS or PXE) over a shared NIC (net1) can cause the SP to exhibit connectivity issues.

IPMItool 1.8.9 Returns Incorrect Memory Information

IPMItool 1.8.9 does not support direct reading of the SPD memory. Using the `ipmitool fru print` command results in a return of incorrect memory information. An updated IPMItool utility is required for this to work properly.

Service Processor Reset When Issuing a Remote Power-on Command

With firmware versions available on Tools and Drivers CD v1.2 and lower, the SP might reset when you issue a power-on command following a power-off command via IPMItool or the command-line interface (CLI).

Workaround:

1. **Update the Sun Fire X2200 M2 firmware with version 1.3 or later.**

   To download the firmware go to:

   `http://www.sun.com/servers/x64/x2200/downloads.jsp`

2. **Power down the system gracefully before powering it back on.**

   Use the appropriate OS shutdown procedure.

   - If you are using IPMItool:

     `ipmitool -A` *`password`* `-H IP_address -I lan -U` *`user`* `-P` *`password`* `chassis power soft`

     IP_address The SP IP address.
     user The SP user name.
     password The SP password.

   - If you are using CLI:

     –> **`set PowerCtrl=gracefuloff`**

Changing Some SP Network Settings Causes Routing Table Flush

If you change the IP address or netmask of the SP, the routing table changes after you update the SP network configuration.

Workaround:

- **Enter the gateway information again or reset the SP.**

No Output When Running the `start /SP/AgentInfo/console` command

When running the `start /SP/AgentInfo/console` command you must configure the OS to see the output. Refer to the procedures below for configuring your OS.

Red Hat

1. **Use a text editor to edit the** `/etc/grub.conf` **file.**
2. **Append the following to the kernel boot parameter line:**

   `console=tty1 console=ttyS1,` *baudrate*`,8,n,1`

   baudrate Baud rate set in the SP and BIOS (9600 is the default value).

   For example, the new kernel boot parameter line should look similar to this:

   `kernel /vmlinuz-2.x.x ro root=LABEL/1 rhgb quiet` **`console=tty1 console=ttyS1, 9600,8,n,1`**
3. **Edit the file** `/etc/securetty`**.**
   a. **Add** `ttyS1` **to the bottom of the file.**
   b. **Save and Exit the file.**
4. **Edit the file,** `/etc/inittab`**.**
   a. **Change** `id:5:initdefault: to id:3:initdefault:`
   b. **Under the section "Run gettys in standard runlevels" add the following as the first line:**

      `co:2345:respawn:/sbin/agetty ttyS1` *baudrate*`,8,n,1 vt100`
   c. **Save and exit the file.**
5. **Reboot.**

SLES

1. **Use a text editor to edit the** `/boot/grub/menu.lst` **file.**
2. **Append the following to the kernel boot parameter line:**

   `console=tty1,` *baudrate*`,8,n,1`

   where *baudrate* is the baud rate set in the SP and BIOS (9600 is the default value).

   For example, the new kernel boot parameter line should look similar to this:

   `kernel /boot/vmlinuz root=/dev/sda2 resume=/dev/sdal splash:silent showps console=tty0` **`console:ttyS1, 9600,8,n,1`**
3. **Edit the** `/etc/securetty` **file.**
   a. **Add "ttyS1" to the bottom of the file.**
   b. **Save and exit the file.**

4. **Edit the** `/etc/inittab` **file.**

   a. **Change** `id:5:initdefault: to id:3:initdefault:`

   b. **Under "getty-programs for normal runlevels:" add the following line:**

      `S0:12345:respawn:/sbin/agetty -L` *baudrate*`,8,n,1 ttyS1 vt100`

      where *baudrate* is the baud rate set in the SP and BIOS (9600 is the default value).

5. **Save and exit the file.**

6. **Reboot.**

Solaris 10 6/06

1. **Edit the** `/boot/solaris/bootenv.rc` **file to read:**

   `setprop console 'ttyb'`

   `setprop ttyb-mode` *baudrate***`,8,n,1,-`**

   where *baudrate* is the baud rate set in the SP and BIOS (9600 is the default value).

2. **Edit the** `/boot/grub/menu.lst` **file to read:**

   `kernel /platform/i86pc/multiboot -B console=ttyb`

3. **Edit the** `/kernel/drv/asy.conf` **file and add the following:**

   `name="asy" parent="isa" reg=1, 0x2f8 interrupts=3;`

4. **Edit the** `/var/svc/manifest/system/console-login.xml` **file to read:**

   `<propval name='label' type='astring' value='`*baudrate*`'/>`

   where *baudrate* is the baud rate set in the SP and BIOS (9600 is the default value).

5. **Save and exit the file.**

6. **Reboot the system using the following command:**

   # **`reboot -- -r`**

The Sun Splash Screen in the Serial Console Does Not Display

When booting the system with the console output directed to the serial port, the Sun splash screen does not appear, and you do not see the prompt to press F2 to enter the BIOS Setup Utility. Use the following workaround to disable the Sun splash screen.

Workaround:

1. **Access the BIOS Setup Utility.**
2. **Select Boot –> Boot Setting Configuration.**
3. **Set the boot setting to** `quiet boot - disable`
   This enables a prompt to press F2.

System Management: Virtual Device Issues

The following system management issues relate to virtual devices:

Remote Virtual Device Failure

If you connect to the service processor using the hostname rather than the IP address, the remote virtual device function (DVD/ISO/floppy) might fail to work.

Workaround:

- **Connect to the ELOM web GUI using the IP address of the SP rather than the hostname.**

Virtual CD-ROM Appears Unmounted in SLES 9 SP3

The virtual CD-ROM appears unmounted when running the remote console on a SLES 9 SP3 system, because the dialog box does not pop up when the CD is mounted.

Workaround:

- **Access the virtual CD-ROM from the** `/media` **directory.**

Some Virtual USB Flash Devices Do Not Mount in the Solaris OS

For some USB flash devices, the virtual device appears mounted in the ELOM, even though it is actually unmounted.

This issue is under investigation.

System Management: Web GUI and Remote Console Issues

The following issues relate to the Embedded Lights Out Manager (ELOM) web interface (web GUI) and the Remote Console application:

For more information about the ELOM, see the online *Embedded Lights Out Manager Administration Guide,* 819-6588.

Use BIOS Supervisor Password to Reduce the Risk of Unauthorized Network Access to Server

When the BIOS Supervisor password is *not* set, it is possible for an unauthorized remote user to get physical access to the BIOS Setup Utility by pressing F8 or F12 during boot. You can reduce this risk by establishing a BIOS Supervisor password for the server. Use the BIOS Setup Utility to create the password and block unauthorized users.

You can access the server's BIOS Setup Utility using one of several methods (see the server documentation). However, the following recommended method uses a browser and the ELOM's Remote Console (RKVM) application:

1. **Open a browser, and enter the URL of the SP in the address bar.**

   The ELOM login screen appears.

2. **Log in using the user name and password for an account with administrator privileges. For information on logging in to the ELOM web GUI, see the** *Sun Fire X2200 M2 Embedded Lights Out Manager Administrative Guide***.**

   The ELOM main menu screen appears.

3. **From the ELOM main menu, click the Remote Control tab.**

   The Remote Control submenu tabs appear.

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

   The Remote Power Control submenu screen appears.

5. **From the drop-down list, select Boot Option: BIOS Setup.**

6. **Click Save.**

7. **To start the Remote Console application, click the Redirection tab, and click the Launch Redirection button.**

   The server reboots into the BIOS Setup Utility, and the BIOS Setup Utility main screen appears.

8. **Use the arrow keys to navigate to the Security tab.**

   The Security screen appears.

9. **Use the arrow keys to navigate to the Supervisor Password field.**

10. **To change the Supervisor password, press Enter, and type a password in the password field.**

    Remain in the Security screen.

11. **Use the arrow keys to navigate to the User Access Level field.**

12. **Change the setting from Full Access to Limited.**

13. **Press the F10 key to save your changes and exit the BIOS Setup Utility.**

    The server boots, the Supervisor password is established, and the system ignores F8 and F12 keystrokes during boot-up.

ELOM Web Interface

The Tools and Drivers CD v1.5 (and later) includes a new easy-to-use ELOM web interface (web GUI) with a "look and feel" that more closely matches other Sun products. The Tools and Drivers CD is available at:

http://www.sun.com/servers/x64/x2200/downloads.jsp

For more information about the new web interface, see the *Embedded Lights Out Manager Administration Guide for the Sun Fire X2100 M2 and Sun Fire X2200 M2 Servers*, 819-6588 available at:

http://docs.sun.com/app/docs/coll/x2200m2

Minimum Supported Version for a Remote Sparc System

Solaris 10 is the minimum supported OS for running the web interface from a Sparc-based system.

Solaris OS Remote Console Session Requires Java Plugin

When you launch a Remote Console session on a Solaris OS system, the system prompts you for a decision regarding the `javaRKVM.jnlp` file. You have the following two options:

If you are logged in as root:

- **Choose to open the file with its default application.**

–or–

If you are logged in as a user *without* administrator (root level) privileges, do the following:

1. **Choose the option to save the file.**
2. **Download the `javaRKVM.jnlp` file and run it manually.**

   The download manager displays the location of this file.

3. **Move the** `javaRKVM.jnlp` **file to the** `/tmp` **directory.**

   # **mv /***location_of_javaRKVM.JNLP***/javaRKVM.JNLP /tmp**

   where *location_of_javaRKVM.JNLP* is the directory where `javaRKVM.JNLP` resides.

4. **To find the location of the javaws application, enter the following in a terminal window:**

   # **which javaws**

5. **Execute the following command from the terminal window:**

   # **/***location_of_javaws***/javaws /tmp/javaRKVM.JNLP**

   where *location_of_javaws* is the directory where `javaws` resides.

   Example:

   Assume the `javaws` application is run from the `/usr/bin` directory:

   # **/usr/bin/javaws /tmp/javaRKVM.JNLP**

   This opens a Remote Console session.

Closing the Remote Console window removes the `/tmp/javaRKVM.jnlp` file.

Web Interface Supports Firefox Versions 1 and 2 on Windows

The ELOM web interface which is available on the Tools and Drivers CD v1.5 (and later), supports Firefox versions 1 and 2 on Windows systems. Additionally, when using web interface 3.xx, an ActiveX plugin is no longer a requirement for Firefox v1.x. You can upgrade to web interface 3.xx to use Firefox versions 1 or 2, or to continue running remote console while using Firefox v1.x without upgrading to web interface 3. Install the ActiveX plugin by performing the following workaround:

1. **Retrieve the latest ActiveX plugin (**`mozactivex-ff-15.xpi`**) at:**

   http://iol.ie/~locka/mozilla

2. **Open the Firefox 1.5 browser and drag the** `mozactivex-ff-15.xpi` **file from its location to the open browser.**

   OCX installs automatically.

3. **Open the following file with a text editor:**

   `C:\`*installation_path*`\defaults\perf\activex.js`

   where *installation_path* is the path to `\defaults\perf\activex.js`.

   The default path is `c:\programfiles\MozillaFireFox\defaults\perf\activex`

4. **Change** `pref("security.classID.allowByDefault",false)` **to** `pref("security.classID.allowByDefault",true)`.
5. **Save the text file and exit the text editor.**
6. **Restart the browser.**
7. **From the Firefox menu, select Tools –> Options, and click on Content.**
   The Content screen appears.
8. **Verify that the Enable Java and Enable Java Script options are selected.**
9. **Click Close.**

Disabling the Web Interface Time-out Function

Disable the web interface timeout function when performing remote installations.

To disable the web interface timeout function:

1. **Login to the ELOM web interface using an account with administrator privileges.**
   The ELOM main screen appears.
2. **Click the System Information tab.**
   The System Information submenu tabs appear.
3. **Click the Session Time-Out submenu tab.**
   The Session Time-Out screen appears.
4. **Click the Disable Timeout radio button.**
5. **Click Submit.**
   The Session Timeout is disabled. For more information about using the ELOM to monitor and manage your server, see the online *Embedded Lights Out Manager Administration Guide,* 819-6588.

To Run Remote Console on Firefox, Disable Pop-up Blocker

Firefox browsers have feature that blocks pop-up screens. If this feature is enabled, the ELOM Remote Console application might not appear when you launch the application. To use the Remote Console application in a Firefox browser, disable the pop-up blocker in the browser's Preferences –>Content screen.

Remote Console and Virtual Devices on the Solaris OS

If you are running the Solaris OS on your remote console system, you must log in to the OS as root (superuser) to mount virtual devices.

Remote Console Mouse Performance on the Solaris OS

When running the remote console on the Solaris 10 OS, the mouse performance might be slow.

Workaround:

1. **Log in to the ELOM web interface, and start the Remote Console.**
2. **Using the Remote Console window, run the following in a Solaris OS terminal window on the Sun Fire X2200 M2 system:**

   # **`type 'xset m 1 1'`**

System Management: Browser Issues

This section contains system management issues related to browsers:

Minimum Supported Browsers

Table 3 shows the minimum supported browser versions for running the Embedded Lights Out Manager (ELOM) web interface for the Sun Fire X2200 M2 server on Solaris and Linux operating systems.

TABLE 1 Version Numbers for Browsers

	Solaris x86	RHEL 32-bit	RHEL 64-bit	SLES 32-bit	SLES 64-bit	Windows
Mozilla	1.7	1.7.12	1.7.13	1.7.8	1.7.13	N/A
Firefox	1.5.0.4	1.0.7	1.5.0.4	1.5.0.4	1.5.0.4	1.5.0.4
Internet Explorer	N/A	N/A	N/A	N/A	N/A	6

Configuring Java Runtime Environment for Your Browser

Java Runtime Environment (JRE) 5 Update 7 is the minimum supported version for browsers to run the ELOM web GUI. Follow the steps below to download the JRE 5 Update 7 for Mozilla and Firefox browsers.

1. **Go to** `http://www.java.sun.com/`**.**
2. **Click on the Get Java Software button.**
3. **Click Download Now in the new window that opens.**

   The web site displays the appropriate plug-in options for the operating system that you are running.
4. **Click Download to download the appropriate plug-in.**

   Installation instructions and plug-in verification are also available on this site.

Error Message When Launching the Remote Console Using JRE 1.6.0

The following error message occurs when launching the remote console using JRE version 1.6.0.

```
Cannot Connect to Host.
```

This is a known issue that occurs when connecting to the BMC via a proxy.

Workaround:

Two options:

- Use JRE version 1.5_10.

  –*or*–

- Change the default to "Direct Connection" in JRE version 1.6.0.

To change the default in JRE version 1.6.0, follow these steps:

1. **Launch the java control panel.**

   path to jre /**`jre1.6.0/bin/jcontrol`**

2. **Select the General tab –> Network Settings, and click on Direct Connection.**

3. **Click OK.**

Streaming Video and KVMS Over IP

The keyboard, video, mouse and storage (KVMS) over IP feature of the ELOM SP is designed for administering your system. Applications requiring heavy video bandwidth (for example, streaming videos) do not perform well with KVMS over IP.

Multiple Devices Cannot be Mounted Within the Web Interface on Solaris OS

When running either Mozilla or Firefox on a supported version of the Solaris OS, you can only mount one device at a time.

This issue is under investigation.

Diagnostics Issues

The issues in this section relate to the Pc-Check diagnostics software.

- "Pc-Check Fails to Identify RAID Devices" on page 38
- "Pc-Check Hangs When Running Keyboard LED Test" on page 38

Pc-Check Fails to Identify RAID Devices

After creating a RAID 1 device in the BIOS, the Pc-Check diagnostics software fails to identify the device as a RAID device.

This issue is under investigation.

Pc-Check Hangs When Running Keyboard LED Test

The text for the keyboard LED test is not included in the diagnostics scripts. You can only run this test manually.

Workaround: Do *not* run the test.

This issue is under investigation.

Limited Connectivity to Service Processor When Running Nic2 Tests.

When running the Pc-Check Network Test, access to the service processor shared network port might become sluggish or stop.

Operating System Issues

This section contains the following:

For a list of minimum supported operating systems, see "Supported Operating Systems" on page 3

Solaris OS Issues

This section contains issues that apply to Sun Fire X2200 M2 servers running the Solaris 10 operating system.

The following issues are contained in this section:

Baud Rates for Installing the Solaris OS on ttyb Using SSH Console

To install the Solaris OS on ttyb using SSH console, you must first set both the COM2 baud rate and the internal serial port baud rate to 9600.

Note – To be able to set both the COM2 and the internal serial port baud rates, you must first update your server to *at least* BIOS v3B25 and SP v3.13 (Tools and Drivers CD v1.6 or later).

- Set the COM2 baud rate in the BIOS Setup Utility.
- Set the internal serial port baud rate in the SP/BMC using the ELOM web GUI.

  The Serial Port submenu screen is located under the Configuration main menu tab.

Patch Available for the Solaris OS nge Connect Issues

During initialization, the Solaris OS might fail to properly clear the RX_EN register. As a result, TCP/UDP connections via the nge ports fail.

Workaround:

1. **Install patch 122530-06 (requires patch 118855-03).**
2. **Reconfigure the system immediately after installing the patches.**

   Patches are available at:

http://www.sun.com/sunsolve.

Use Patchfinder to locate the patch.

Telnet Vulnerability

Solaris 10 6/06 and 11/06 OS distributions have telnet vulnerability issue. A patch is available on the Tools and Drivers CD v1.4 (and later).

Solaris OS Xserver and NIC Interfaces

In order to start the Solaris OS Xserver, you must connect the configured network interface cards (NIC) to the network. If a NIC is not configured, you do not need to connect it.

Some KVM Switches Out of Sync Following a Solaris OS Installation

When installing the Solaris 10 6/06 OS in a rack with a KVM switch, the monitor might go out of sync when the Xserver starts to log into the OS.

The three possible workarounds are:

- Install the Solaris OS in text mode:

  a. Run the `install.sh` script from the Tools and Drivers CD.

  b. Reboot the server.

  Running `install.sh` resolves the issue, as it installs the updated AST2000 VGA driver. See the *Sun Fire X2200 M2 Server Operating System Installation Guide*, 819-6599, for additional instructions on running the install.sh script for the Solaris OS.

  –or–

- Use the Embedded Lights Out Manager's Remote Console application.

  See the *Embedded Lights-Out Management Administration Guide*, 819-6588.

  –or–

- Install the Solaris OS in GUI mode:

  a. Boot failsafe or kill the Xserver prior to starting.

  b. Run the `install.sh` script on the Tools and Drivers CD.

  See the *Sun Fire X2200 M2 Server Operating System Installation Guide*, 819-6599, for additional instructions on running the `install.sh` script for the Solaris OS.

Linux Issues

The following issues apply to Sun Fire X2200 M2 servers running the supported Red Hat or SUSE operating systems.

Recommended Upgrade: SP Security Strengthened

Sun recommends that Linux users upgrade SP firmware to *at least* SP v3.20. SP v3.20 contains strengthened security.

AST 2000 Driver Might Fail to Update on RHEL 4 With Tools and Drivers CD v2.1

When using Tools and Drivers CD v2.1 to update the AST 2000 VGA driver on a X2200 M2 server running RHEL 4 OS, the driver might fail to update if you have installed the driver before. To install the driver, use the `force` parameter with the `update` command.

Workaround:

1. **Set up the server to access the command line.**
2. **Insert Tools and Drivers CD v2.1 in the server's CD/DVD drive.**
3. **Access a terminal window and navigate to the** `/drivers/linux/display/x86/xorg68` **directory.**

   `cd` *$CD_MOUNTPOINT*`/drivers/linux/display/x86/xorg68`

   where *$CD_MOUNTPOINT* is the to which you have mounted CD.
4. **Execute the following command to update the driver:**

   `sh update. sh force`

System Hang with AMD-Based Servers Running 64-bit RHEL Versions 4 - 4.5

On AMD-based servers running 64-bit RHEL versions 4 through 4.5, the system might hang because of issues related to the management of process memory data. This problem occurs when running x86 64-bit RHEL 4 on an AMD processor that supports greater than 40-bit physical addressing. For more information see the Red Hat Linux knowledge base and article #11696 at:

http://kbase.redhat.com/faq/FAQ_85_11696.shtm

Workaround:

- **Red Hat strongly recommends that you update to 4.6 or to the 4.5 errata kernel as soon as possible.**

SLES 9 SP4 and AMD Opteron Quad-Core CPU Power Management-Related Warning Messages and Support

After installing SLES 9 SP4 on a server containing AMD Opteron quad-core CPUs, warning messages related to AMD's Power Management are logged to `/var/log/warn`. For example:

```
microcode: CPU1 not a capable Intel processor

microcode: CPU0 not a capable Intel processor

microcode: No suitable data for CPU1

microcode: No suitable data for CPU0
```

SLES 9 SP4 does not support AMD's Power Management for the installed CPUs.

You can safely ignore this message.

SLES 9 SP4 Support on Quad-Core CPU Servers: Patch Required

To install SLES 9 SP4 on Sun Fire X2200 M2 servers with quad-core CPUs, you must apply SUSE patch #12111. The patch is available at:

http://support.novell.com/techcenter/psdb/436375e56cfcb119e5e42c29cf234297.html

Quad-Core CPU Requires RHEL 5.1

For full support, the quad-core CPU requires Red Hat version 5.1.

Keystrokes Auto-Repeat

When typing characters on a Linux operating system running on the Sun Fire X2200 M2 server, the keystokes might auto-repeat. You can use the following workaround or download an updated kernel from Red Hat (RHSA-2006:0710-7) at:

http://rhn.redhat.com/errata/RHSA-2006-0710.html

Workaround:

1. **Select Preferences - > Keyboard from the desktop menu.**
2. **Uncheck the selection: keyboard repeats when key is held down.**

VMware Issues

The following issues apply to Sun Fire X2200 M2 servers running the supported versions of the VMware operating systems:

- "VMware ESX 3.5 U2 Crashes on Dual-Core CPU Servers With BIOS v3D12" on page 43
- "VMware ESX 3.0.2 Support" on page 44
- "VMware Requires SAS Option" on page 44

VMware ESX 3.5 U2 Crashes on Dual-Core CPU Servers With BIOS v3D12

Installing VMware ESX 3.5 U2 on a dual-core CPU server with BIOS v3D12 or upgrading the BIOS of a dual-core CPU server running VMware ESX 3.5 U2 using the Tools and Drivers CD v2.1 might cause the server to halt. VMware ESX 3.5 U2 and BIOS v3D12 (available on the Tools and Drivers CD v2.1) are incompatible.

Workaround:

- **To run VMware ESX 3.5 U2 on a dual-core CPU server, use BIOS v3D08, which is available on Tools and Drivers CD v2.0**

Note – Quad-core processors and enhanced quad-core processors are *not* affected by this incompatibility.

Note – *This issue is fixed in BIOS 3D15 in Tools and Drivers version 2.2.0.*

VMware ESX 3.0.2 Support

The VMWare ESX Server 3.0.2 operating system requires BIOS v3B17, which is available on the Tool and Drivers CD v1.5.

VMware Requires SAS Option

You can only install VMWare on systems with the SAS option.

Issues Addressed With Previous Tools and Drivers CD Updates

The following sections detail issues that have been acknowledged, addressed, or fixed with each version of the Tools and Drivers CD:

Features and Resolved Issues in Tools and Drivers CD v2.1

The following is a list of new features available in the Tools and Drivers CD v2.1:

BIOS/SP

- Dual-core BIOS v3B26
- Quad-core BIOS v3D12
- SP v3.20

New Functionality and Updates

- Support for AMD Enhanced Opteron Processor
- Blink Fault LED when ECC single-bit error occurs 24 times within a 24-hour period.
- Update Windows 2003 AST 2000 driver to version 0.86.09
- Update the Linux driver for the MCP55 chipset to version 1.25 for RHEL 4.5, RHEL 4.6, RHEL 5.1, SLES 10 SP1, SLES 10 SP2
- Support for Windows Server 2008 (driver support for LSI, Broadcom, chipset and video)
- VGA AST 2000 driver updated to 0.87 (for Windows Server 2003 and 2008, Linux, and Solaris)

Fixes or Resolved Issues

- ELOM & Linux security issue: SP strengthened. *Recommended* SP/BMC upgrade.
- AMD errata #326
- Inability to boot from network (F12) when more than 6 SAS/SATA JBOD disks are attached
- SP reset sets system clock to 1970

Features and Issues Fixed With the Tools and Drivers CD v2.0

The following is a list of features and fixes available in the Tools and Drivers CD v2.0

- Quad-Core CPU support
- ELOM Password Fix (See "Special Characters In Passwords" on page 24.)

Features and Issues Fixed With the Tools and Drivers CD v1.6

The following is a list of features available in the Tools and Drivers DVD v1.6.

- Enabled ODC value
- Set serial port number to Com2 as default for accessing SP
- Fixed XEN clock goes faster
- Fixed changing the “Skip Scan Broadcom OPROM” setting causes a reboot
- Configure SP IP through BIOS
- BIOS setting to Enable/Disable AMD-V (AMD’s virtualization technology)

Features and Issues Fixed with the Tools and Drivers CD v1.5

The following is a list of features implemented in the Tools and Drivers CD v1.5.

- Add serial port Com2 and baudrate
- Interrupt assignment issue with VMware
- SP/BMC/ELOM
- Redesigned BMC Web Graphical User Interface
- Strengthened BMC security
- Updated OID
- Pc-Check updated to v6.05d

Issues Fixed With the Tools and Drivers CD v1.4

The following issues are acknowledged, addressed, or fixed with the release of the Tools and Drivers CD v1.4:

- Solaris patch #120069-02
- ECC Error Reporting No Longer Points to Incorrect DIMM Slot
- Broadcom boot agent is always first
- LSI write cache enable/disable support added
- New function to read SPD of each DIMM and send to BMC
- BIOS eventlog viewer will show SBE/MBE log as unknonw events
- Set DRAM powerdown & Node interleaving to disable when load defaults
- Powerdown & Node interleaving to disable when load defaults
- Identical drive confuses bios and biosdev (6513859)
- Agesa update to 2.08 for F3 CPU support
- Implement software NMI support

Nvidia Quadro Plex Support

Support for Nvidia Quadro Plex is available via the Nvidia Quadro Plex Interface Card (QPIC) and the x16 PCIe card and riser assembly. An added BIOS option allows the redirection of the video to either the onboard AST2000 or the Nvidia PCIe card. The video defaults to the AST2000.

To change this BIOS option, do the following:

Note – When changing the BIOS option to direct video to the PCIe card, remote access to the system console is *temporarily* lost.

---

1. **Enter the BIOS Setup Utility by pressing F2 at the Sun splash screen.**
2. **Select Advanced tab –> Onboard Device Configuration –> Primary Graphics Adapter**
3. **Change to PCI Express and hit F10 to save changes.**

LSI Logic SAS3041E-R Card Support

You can use a system BIOS option to set the write cache for the LSI card to Enable or Disable. By default the option is *Disable*.

To change the default to Enable, do the following:

Caution – Increase risk of data corruption. Enabling the write cache improves the install/rebuild performance. However, this option increases the risk of corrupting data when an unexpected power outage occurs.

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1. **Enter the BIOS Setup Utility by pressing F2 at the Sun screen.**
2. **Select Advanced –> Onboard Device Configuration –> LSI 3041E disk cache.**
3. **Change to Enable and press the F10 key to save changes.**

Issues Fixed With Tools and Drivers CD v1.3

The following issues are acknowledged, addressed, or fixed with the release of the Tools and Drivers CD v1.3:

- Support for two new firmware update methods in SP web GUI and CLI

- Add Marvell S5 low power state link speed support and force NVIDIA NICs link down to 100 M after S5
- Correct processor revision shows in BIOS screen
- Update NVIDIA PXE ROM to v.538
- Add two performance related BIOS settings (Node Interleaving and DRAM Power Down) and disable by default
- Disable PowerNow by default
- BIOS help text changes to clarify new graphics option
- "Security Risk: Remote Console Does Not Automatically Close" on page 48
- "Remote Power Control Options" on page 48
- Option to preserve or clear CMOS settings during update

Security Risk: Remote Console Does Not Automatically Close

If you are running the web GUI on Windows with an Internet Explorer browser and the web GUI times out, or you log out with the remote console window still open, a dialog box appears with the following:

```
If remote console is opened, it will be closed. Click OK.
```

Clicking OK *does not* close the remote console window.

Workaround:

- **You need to close the window manually.**

Remote Power Control Options

The remote power control options in the ELOM have changed.

- If you are using CLI, the options for the `PowerCtrl` property for the following command have changed: `/SP/SystemInfo/CtrlInfo`

  The new options for `PowerCtrl` are:

  - To shut down the system gracefully, use: `PowerCtrl=gracefuloff`
  - To force a system shut down, use: `PowerCtrl=forceoff`
- If you are using the Remote Console web interface, the following options now exist in the Control –> Power Control menu:
  - To force a system shut down use: **Force Power Off**
  - To reset the system use: **Reset**

- To shut down the system gracefully, use: **Graceful Shutdown**
- To set up BIOS boot options, use: Boot Option: **BIOS Setup**

Issues Fixed With the Tools and Drivers CD v1.2

The following issues are acknowledged, addressed, or fixed with the release of the the Tools and Drivers CD v1.2:

- Fixed bug of changed channel number in setup
- Changed DMI DIMM string to CPUx_DIMMxx
- Enable PowerNow by default
- Added SLP_String (SUNMICROSYSTEMS)
- Added video output warning message
- Apply errata 152
- Support update DMI asset_tag from FRU
- Modified video output and quiet boot help string
- Added scrub, chipkill setup items
- Fixed run PcCheck via PXE will fail on memory test issue
- Modified DMI memory information to meet C version MB
- Modified ECC DIMM description to meet C version MB
- Modified string of VGA output in setup
- Added primary display adapter BIOS option under Advanced/Onboard device configuration
- Apply new downclock policy
- "Cache and Video Memory Do Not Display When There Are 16 DIMMS" on page 49

Cache and Video Memory Do Not Display When There Are 16 DIMMS

The video memory and L1 and L2 cache memory do not display in Pc-Check when the maximum number of DIMMs are installed in the system.

Issues Fixed With Tools and Drivers CD v1.1

The following issues are acknowledged, addressed, or fixed with the release of the Tools and Drivers CD v1.1:

- Fixed load floppy driver fail when install Windows OS
- "Power Control Enhancement" on page 50
- "Emulex HBA Errors" on page 50
- "Network Boot Moves to the Top of the Boot Order After Unmounting the Virtual CD-ROM" on page 51
- "Virtual Storage Device Is Not Readable" on page 51
- "Sometimes a Virtual Device Does Not Mount After Unmounting on Mozilla or Firefox on Solaris OS" on page 51
- "Remote Console Screen Appears White or Gray" on page 51
- "The Hostname Mismatch Dialog Box Is Hidden After Logging Into the Web Interface" on page 52
- "SP Connectivity Might Be Lost During a Remote Installation of the Solaris OS Using the Virtual CD-ROM" on page 52
- "System Time with SP CLI Commands" on page 52

Power Control Enhancement

Added an updated power control enhancement in the Embedded Lights Out Manager (ELOM) web interface and CLI functionality that allows remote users to reboot the system and have it enter the system BIOS automatically.

- **If you are using the ELOM web interface:**

  a. Click the Power Control tab.

  b. Select Boot Option: BIOS Setup.

  c. Click the Submit tab.

- **If you are using the ELOM CLI, use the following commands:**

  –> **`cd /SP/SystemInfo/CtrlInfo`**

  –> **`Set BootCtrl=BIOSSetup`**

Emulex HBA Errors

Bus uncorrectable errors appear in SEL log with the Emulex host bus adapter (HBA). This has no functional impact.

Network Boot Moves to the Top of the Boot Order After Unmounting the Virtual CD-ROM

After unmounting the virtual CD-ROM, Network moves to the top of the boot order replacing the CD-ROM, if one is present.

Workaround:

- **Enter the BIOS and change the boot order.**

Virtual Storage Device Is Not Readable

When you are using the web interface with Mozilla or Firefox on a Solaris operating system, the virtual storage device is not readable in some instances.

Workaround:

- **Restart the browser.**

Sometimes a Virtual Device Does Not Mount After Unmounting on Mozilla or Firefox on Solaris OS

For some instances, the virtual device does not remount after it has been unmounted.

Workaround:

- **Reboot the system that is running the remote console.**

Remote Console Screen Appears White or Gray

- In some instances, after launching the Remote Console on a Solaris 10 OS or Windows system, the console window appears white or gray
- After performing a remote firmware update on a non-Windows system, the Sun Fire X2200 server reboots to flash the system BIOS. During the reboot, the Remote Console windows appears gray with no text.

The Hostname Mismatch Dialog Box Is Hidden After Logging Into the Web Interface

When logging into the web interface, the Hostname Mismatch dialog box appears on-screen, in front of the other windows for few seconds only, and then it moves behind the web interface window. If you do not click Run, in the Hostname Mismatch dialog box, the web interface does not react to your mouse clicks. You must close the Hostname Mismatch dialog box to continue.

Workaround:

- **Minimize the web interface windows, locate the Hostname Mismatch dialog box, and click Run.**

SP Connectivity Might Be Lost During a Remote Installation of the Solaris OS Using the Virtual CD-ROM

This issue only happens on a small number of remote installations. If the connectivity is lost, a new installation is required.

System Time with SP CLI Commands

You do not see the system time when using CLI commands with the ELOM SP. You need to use the ELOM web interface to view the system time.