Sun Blade™ X6220 Server Module Release Notes

For Software Releases 1.x, 2.x and 3.x

Sun Microsystems, Inc.
www.sun.com

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Contents

Preface

This document contains procedures and special information for upgrading your Sun Blade™ X6220 server module to the software releases 1.x, 2.x. and 3.x.

Product Updates and Drivers

For product updates that you can download for the Sun Blade X6220 server module, follow the links at the following Web site:

http://www.sun.com/download/index.jsp

This site contains updates for firmware and drivers, as well as CD-ROM `.iso` images.

Contacting Sun Technical Support

If you have technical questions about the Sun Blade X6220 server module that are not answered in this document, go to:

http://www.sun.com/service/contacting

See the Support menu for links to the Knowledgebase.

If you need to contact Sun technical support, please have the following information available so that we can best assist you in resolving problems:

- Description of the problem, including the situation where the problem occurs and its impact on your operation

- Machine type, operating system version, and product version, including any patches and other software that might be affecting the problem
- Detailed steps on the methods you have used to reproduce the problem
- Any error logs or core dumps

Related Documentation

For a description of the document set for the Sun Blade X6220 server module, see the *Where To Find Sun Blade X6220 Server Module Documentation* sheet that is packed with your system and also posted at the product's documentation site at this URL:

http://docs.sun.com/app/docs/prod/blade.x6220

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

Solaris and other software documentation is available at:

http://docs.sun.com

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Sun Blade X6220 Server Module Release Notes for Software Releases 1.x, 2.x and 3.x, 820-2507

CHAPTER 1

Software Release Features

The Sun Blade modular system chassis management module (CMM) and server module service processors must all be upgraded to the latest firmware release. Make sure to update the server modules first, then the chassis CMM to the latest firmware, using ILOM CLI, GUI, or IPMI interfaces.

The following topics are included in this chapter:

Software Release Firmware Versions

The following table describes the firmware versions for each of the Sun Blade X6220 server software release:

TABLE 1-1 Software Release Firmware Versions

Software Release	ILOM Firmware Version	ILOM Firmware Build	BIOS Version	LSI Firmware/BIOS Version
3.0	3.0.3.34	44528	0ABJT114	1.26.92/6.24.01
2.1	2.0.3.10	36968	0ABJT110	1.24.93/6.20.03
2.0	2.0.3.3	34514	0ABJT110	1.23.95/6.18.01
1.2	FW 2.0.3.2	30997	0ABJT106	1.22.01/6.16.00
1.1a	FW 2.0.3.1	26140	0ABJT030	1.22.01/6.16.00

TABLE 1-1 Software Release Firmware Versions

Software Release	ILOM Firmware Version	ILOM Firmware Build	BIOS Version	LSI Firmware/BIOS Version
1.1	FW 2.0.3.1	23240	0ABJT030	1.22.01/6.16.00
1.0.1	FW 1.1.8	18640	0ABJT025	1.20.00/6.14.00
1.0.2			0ABJT026	
1.0	FW 1.1.6	16671	0ABJT025	1.20.00/6.14.00

Specific Release Features

The following sections describe the features contained in the available software updates.

Software Release 2.x and 3.0

The following sections describe the features of the software 2.x releases:

- "Software Release 3.0" on page 2
- "Software Release 2.1" on page 3
- "Software Release 2.0" on page 5

Software Release 3.0

Firmware Updates

The Sun Blade X6220 server module SW 3.0 release contains the following firmware versions:

- ILOM firmware version 3.0.3.34
- Service processor build 44081
- BIOS version 0ABJT114
- LSI firmware Phase 14

Software Updates

The Tools and Drivers CD 3.0 also contains software updates as shown in Table 1-2.

TABLE 1-2 Utiltites, Drivers and CD Updates for SW 3.0

Operating System Affected	Tools and Utilities	Tools and Drivers CD Drivers	Sun Installation Assistant Updates
Solaris		• Solaris 10 10/O8	
Red Hat Enterprise Linux (RHEL)	• HERD 2.0 • IPMItool/IPMIflash • MSM 2.88	• RHEL5.3 64bit • RHEL 4.7 (32bit and 64bit)	• SIA v2.2.17
SUSE Linux Enterprise Server (SLES)	• Herd 2.0 • MSM 2.88	• SLES9 SP4 64bit • SLES10 SP2 64bit	• SIA v2.2.17
Windows	• MSM-IR v2.88	• Windows Server 2008 Data Center (32-bit and 64-bit) • Windows 2003 R2 (32-bit and 64-bit)	• SIA v2.2.17
VMware		• VMware esx 3.0.3 • Vmware 3.5 U3, 3.5u2	

Software Release 2.1

Firmware Updates

The Sun Blade X6220 server module SW 2.1 release contains the following firmware versions:

- ILOM firmware version 2.0.3.10
- Service processor build 36968
- BIOS version 0ABJT110
- LSI firmware Phase 12

Software Updates

The Tools and Drivers CD 2.1 also contains software updates as shown in TABLE 1-3

TABLE 1-3 Utilities, Drivers, and CD Updates for SW 2.1

Operating System Affected	Tools and Utilities	Tools and Drivers CD Drivers	Sun Installation Assistant Updates
Solaris	• LSI cfggen v2.00.21 • ipmitool and ipmiflash v1.8.9.4	• Solaris 10 5/08	
Red Hat Enterprise Linux (RHEL)	• Herd v1.9.2 • MSM-IR v2.63 • LSI SNMP v3.14.0.1 • LSI cfggen v2.00.21 • ipmitool and ipmiflash v1.8.9.4	• RHEL 4.6 (32-bit and 64-bit) • RHEL 5.1 64-bit • RHEL 5.2 64-bit	• SIA CD v2.1.9
SUSE Linux Enterprise Server (SLES)	• Herd v1.9.2 • MSM-IR v2.63 • LSI SNMP v3.14.0.1 • LSI cfggen v2.00.21 • ipmitool and ipmiflash v1.8.9.4	• SLES 9 SP4 (64-bit) • SLES 10 SP1 (64-bit) • SLED 10 SP2 (64-bit)	• SIA CD v2.1.9
Windows	• AMD PowerNow • Power Monitor v1.2.3 • MCA tool v1.1.4 • MSM-IR v2.63 • LSI SNMP v3.14.0.1 • LSI cfggen v2.00.21 • ipmitool and ipmiflash v1.8.9.4	• Windows Server 2008 Data Center (32-bit and 64-bit) • Windows 2003 R2 (32-bit and 64-bit)	• SIA CD v2.1.9
VMware		• VMware 3.5 U1 • VMware ESX v3.0.2 U1	

LSI Phase 12 Features

LSI Phase 12 firmware upgrade includes firmware version 1.24.93 and BIOS version 6.20.03.

TABLE 1-4 Phase 12 LSI BIOS Features List

Feature Title	Firmware	Hardware	Description	Application
Ability to perform link reset or hard reset on SATA drives	IT*	106*x*, 1078	This feature provides the ability to send LINK RESET or HARD RESET in the SMP PHY CONTROL message to SATA drives.	Generic
Initiator removal events	IT	106*x*, 1078	This feature adds the ability in firmware to generate events when initiators are added or removed from the topology.	Multi-initiator configuration; generic feature
IR support for dual-ported devices	IR\	106*x*, 1078	This feature brings in IR firmware support for dual ported devices within a volume or hot spare.	Generic
Do not re-sync when volumes are re-enabled	IR	106*x*, 1078	This feature provides functionality to stop resync when volumes are enabled.	Generic

* IT: Initiator target—no RAID function

\ IR: Integrated RAID—supports limited RAID

Software Release 2.0

The Sun Blade X6220 server module (SW 2.0 release contains:

- ILOM firmware version 2.0.3.3
- Service processor build 34514
- BIOS version 0ABJT110
- LSI firmware Phase 11

Software Support

Tools and Drivers CD 2.0 (SW 2.0) includes updated OS support for:

- SLES 9 64-bit
- Windows Server 2008 Data Center 32-bit and 64-bit
- Solaris 10 5/08

- VMware 3.5 U1

TABLE 1-5 shows which utilities and drivers are specific to operating systems.

TABLE 1-5 Utilities, Drivers, and CD Updates

Operating System Affected	Tools and Utilities	Tools and Drivers CD Drivers	Sun Installation Assistant Updates
Solaris	• LSI cfggen v2.00.19 • ipmitool and ipmiflash v1.8.9.4	• Solaris 10 5/08	
Red Hat Enterprise Linux (RHEL)	• Herd v1.9.2 • MSM-IR v2.29 • LSI SNMP v3.13-0004 • LSI cfggen v2.00.19 • ipmitool and ipmiflash v1.8.9.4	• RHEL 4.6 (32-bit and 64-bit)	• SIA CD v2.1.3
SUSE Linux Enterprise Server (SLES)	• Herd v1.9.2 • MSM-IR v2.29 • LSI SNMP v3.13-0004 • LSI cfggen v2.00.19 • ipmitool and ipmiflash v1.8.9.4	• SLES 9 SP3 (64-bit) • SLES 10 SP1 (64-bit)	• SIA CD v2.1.3
Windows	• AMD PowerNow • Power Monitor v1.2.3 • MCA tool v1.1.4 • MSM-IR v2.29 • LSI SNMP v3.13-0002 • LSI cfggen v2.00.19 • ipmitool and ipmiflash v1.8.9.4	• Windows Server 2008 Data Center (32-bit and 64-bit) • Windows 2003 R2 32-bit and 64-bit	• SIA CD v2.1.3
VMware		• VMware 3.5 U1 • VMware ESX v3.0.2 U1	

LSI Phase 11 Information

LSI Phase 11 firmware upgrade includes firmware version 1.23.95 and BIOS version 6.18.01, which provides fixes for CR #6714628, #6686473, and #6715797.

TABLE 1-6 Phase 11 LSI BIOS Features List

Feature Title	Firmware	Hardware	Description	Application
Support for enable/disable of hiding of drives with DDF metadata	Integrated RAID	106*x*, 1078	Disable to expose drives to BIOS or OS (Phase 8). Enable to hide drives (Phase 9 and 10).	Systems with DDF compliant drives as well as IR volumes.
Ability to delete DDF metadata from all drives using a RAID command	Integrated RAID	106*x*, 1078	When DDF-compliant metadata is found, the BIOS presents the user with the option to delete the metadata from all drives.	Systems with DDF-compliant drives, as well as IR volumes.

1.x Software Releases

The following sections describe the features of the software 1.x releases:

- "Software Release 1.0.1" on page 7
- "Software Release 1.0.2" on page 8
- "Software Release 1.1a" on page 8
- "Software Release 1.2" on page 10

Software Release 1.0.1

The Sun Blade X6220 server module software release 1.0.1 contains the following updates:

- New Sun Installation Assistant CD image to support RHEL 5
- ILOM FW version 1.1.8, which includes service processor (SP) build 18640 and BIOS 25
- Tools and Drivers CD contains updated drivers for Red Hat Enterprise Linux (RHEL) 5

The Tools and Drivers CD contains updated drivers for RHEL 4 Update 5 and RHEL 5. Driver and PXE files that support RHEL 4 Updates 4 and 5 have been modified to cover all supported RHEL 4 distributions. See the Tools and Drivers CD Read Me for specific file names.

Software Release 1.0.2

Software release 1.0.2 contains the same features as in software 1.0.1, except that the BIOS has been updated from version 25 (0ABJT025) to version 26 (0ABJT026). The following changes have been made to the BIOS:

- Memory timings have been updated to avoid uncorrectable memory errors under certain configurations when using PowerNow!
- NVIDIA PXE ROM has been updated to version 243.0538, which fixes a problem with reversed MAC address under the Windows Preinstall Environment

Software Release 1.1a

The Sun Blade X6220 server module software release 1.1a contains ILOM firmware version 2.0.3.1, service processor build 26140, BIOS version 30, and LSI firmware version 1.22.01 and BIOS version 6.16.00.

TABLE 1-7 shows which utilities and drivers are specific to operating systems:

TABLE 1-7 Utilities, Drivers, and CD Updates

Operating System Affected	Tools and Utilities	Tools and Drivers CD Drivers	Sun Installation Assistant Updates
Solaris	• LSI cfggen 2.00.18 • suncfg 1.05 • ipmiflash	• Solaris 10 8/07	
Red Hat Enterprise Linux (RHEL)	• Herd (v1.6) • MSM-IR 2.18 • LSI SNMP 3.11 • LSI cfggen 2.00.18 • suncfg 1.05	• RHEL 4.5 (64-bit)	• RHEL 4.5 (64-bit)
SUSE Linux Enterprise Server (SLES)	• Herd (v1.6) • MSM-IR 2.18 • LSI SNMP 3.11 • LSI cfggen 2.00.18 • suncfg 1.05 • ipmiflash	• SLES 9 SP3 (64-bit) • SLES 10 SP1 (64-bit)	• SLES 9 SP3 (64-bit) • SLES 10 SP1 (64-bit)
Windows	• MSM-IR 2.18 • LSI SNMP 3.13 • LSI cfggen 2.00.18 • suncfg 1.05 • ipmitool		

LSI Firmware Phase 10 Release

TABLE 1-8 lists the features that are part of the LSI BIOS Phase 10 release. Phase 10 corresponds with LSI firmware version 1.22.01 and BIOS version 6.16.00.

TABLE 1-8 Phase 10 LSI BIOS Features List

Feature Title	Firmware	Hardware	Description	Application
8MB Flash Part Support	IX	1068E	Allows the support of 8 MB flash parts. Flash layout is being modified to support 8 MB parts.	Any customer using 8MB flash parts.
Self Configuring Expander Support: Self Configuring	IT	106*X*	When the expander reports that it is a self-configuring expander, MPT firmware will not program route tables on that expander.	Topologies with self-configuring expanders. (General market)
Self Configuring Expander Support: Configure Others	IT	106*X*	When the expander reports that it will configure others in the topology, MPT firmware will not program route tables in the topology where applicable.	Topologies with self-configuring expanders. (General market)
Self Configuring Expander Support: Table-to-Table Routing	IT	106*X*	If the expander reports that table-to-table connections are allowed, do not flag it as an error or report it to the host.	Topologies with expanders that allow table-to-table connections.
Update Drive Firmware	IR	106*X*	Allows the user to prepare to update drive firmware via a new RAID Action Request.	General market.
Change LED Behavior With SMART Filtering Enabled in BIOS	IR	106*X*	Allows control of SMART polling in firmware for IR volumes.	General market.
Protocol Specific Write-Cache Enable	IR	106*X*	Allows control of write cache on protocol basis.	General market.
Support for Enable and Disable of Hiding of Drives With DDF Metadata	IR	106*X*	n/a	n/a

Table Legend:

- IT: Initiator target—no RAID function
- IR: Integrated RAID—supports limited RAID
- IX: Both IT and IR
- 1068E: Version of the LSI chip for the Sun Blade X6220 modular system
- 106*X*: All other 106 chips used in Sun Fire and Sun Blade systems

The following bug is fixed with the LSI phase 10 update:

RAID-1 System Fails to Boot Solaris if Primary Disk on `Slot 0` *is Removed (6534659)*

When a RAID 1 system with a hotspare is created, the system might fail to boot the Solaris OS and will keep attempting to reboot after the primary disk on `slot 0` is removed.

Software Release 1.2

The Sun Blade X6220 server module software release 1.2 contains ILOM firmware version 2.0.3.2, service processor build 30997. The BIOS version is 0ABJT106. The LSI firmware version is the same as the Release 1.1.

In addition:

- The Tools and Drivers CD contains updated drivers for the following operating systems: RHEL4.6 (32-bit and 64-bit) and RHEL5.1 (64-bit).
- HERD has been updated to version 1.8.
- suncfg 1.05 will not be part of SW 1.2.

CHAPTER 2

Flash Upgrading Your Server

This chapter contains procedures and information for upgrading Sun Blade X6220 server module to the current software release. See the following sections:

How to Flash Upgrade Your Server

This section shows a summary of the steps you should perform to update your server to the current software release.

1. **Review Chapter 3 for known issues and considerations regarding the flash upgrade.**
2. **Determine the version of the firmware that you currently have.**

   See "How to Determine The Firmware Version of Your Server" on page 16.

Updating the BIOS and ILOM Firmware

1. **Download the flash image `.ima` file by following links from the URL below:**

   `http://www.sun.com/download/`

   a. **Locate the Hardware Drivers section.**

   b. **Click the X64 Servers and Workstations.**

c. **Click the link for the Sun Blade X6220 Server Module release that you want to upgrade to.**

d. **Click Download.**

e. **Enter your Username and Password.**

Tip – If you do not have a Username and Password, you can register free of charge by clicking Register Now.

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f. **Click Accept License Agreement.**

g. **Click the on the appropriate file name:**

SW 1.0.1: `ilom.X6220-1.1.8.ima`

SW 1.0.2: `ilom.X6220-1.1.8-BIOS26.ima`

SW 1.1a: `ilom.X6220-2.0.3.1-r26140.ima`

SW 1.2: `ilom.X6220-2.0.3.2-r30997.ima`

SW 2.0: `ilom.X6220-2.0.3.3-r34514.ima`

SW 2.1: `ilom.X6220-2.0.3.10-r36968.ima`

SW 3.0: `ilom.X6220-3.0.3.34-r44801.ima`

2. **Perform the flash upgrade by using one of the following:**

- ILOM GUI
- ILOM CLI `load` command
- N1 System Manager

Tip – Because of the increased memory usage during web-based GUI operations, you might need to use N1 System Manager or the ILOM CLI `load` command to upgrade the ILOM firmware.

For details on firmware flashing, see the document appropriate to the method you are using:

- N1 System Manager:

  http://docs.sun.com/app/docs/prod/n1.sysmgr#hic

- ILOM GUI or CLI: *Integrated Lights Out Manager 2.0 User's Guide*

  http://docs.sun.com

  For Example, from the ILOM CLI, use the following command:

```
load -source tftp://tftpserver/firmware.ima
```

  Where *tftpserver* is a trivial file-transfer protocol (TFTP) server and *firmware.ima* is one of the following image files:

  SW 1.0.1:`ilom.X6220-1.1.8.ima`

  SW 1.0.2: `ilom.X6220-1.1.8-BIOS26.ima`

  SW 1.1a: `ilom.X6220-2.0.3.1-r26140.ima`

  SW 1.2: `ilom.X6220-2.0.3.2-r30997.ima`

  SW 2.0: `ilom.X6220-2.0.3.3-r34514.ima`

  SW 2.1: `ilom.X6220-2.0.3.10-r36968.ima`

  SW 3.0: `ilom.X6220-3.0.3.34-r44801.ima`

Caution – To ensure a successful flash upgrade, do *not* attempt to modify the ILOM configuration, or use other ILOM GUI, CLI, SNMP, or IPMI interfaces during the flash upgrade process. Wait until after the flash upgrade succeeds to make further ILOM configuration changes. Note that the ILOM upgrade procedure might reset the service processor if it detects recent ILOM configuration changes, or multiple ILOM users or connections.

Note – A firmware upgrade causes the server and ILOM to reset. An upgrade takes about 20 minutes to complete. ILOM will enter a special mode to load new firmware. No other tasks can be performed in ILOM until the firmware upgrade is complete and the ILOM is reset.

3. **(Optional) If you cannot get output to your serial console after the flash upgrade, you might have to clear CMOS settings. This is because your default CMOS settings might have been changed by the new BIOS upgrade.**

   To clear CMOS settings, use the following commands (in this example, the default username, root, and the default password, changeme, are used):

```
ipmitool -U root -P changeme -H SP-IP chassis power off
ipmitool -U root -P changeme -H SP-IP chassis bootdev disk clear-
cmos=yes
```

   Where *SP-IP* is the IP address of the service processor.

4. **(Optional) If you have any problems with the flash upgrade, refer to the section** "Recovering From a Failed Flash Update" on page 20**.**

Updating the LSI Firmware

Caution – During an update, never power off the system.

In order to update the LSI firmware, you must boot the system from a special CD or CD image. There are two ways you can do this:

- Use Remote Console to interact with the system and to mount a CD image. This method does not require physical access to the system. See "Remote Console Method" on page 14.
- Reboot the system from a CD inserted into a USB CD/DVD drive attached to the server module. This methods requires physical access to the system. See "Local Method" on page 15.

Remote Console Method

1. **Download the LSI firmware** `.iso` **file from the Sun Fire X64 servers web site to the remote system.**
2. **Using a web browser, connect to the ILOM and open the ILOM GUI.**

   `https://`*sp_ip_address*

   Where *sp_ip_address* is the IP address of the service processor.
3. **Select Remote Control –> Redirection.**
4. **Select 8-bit or 16-bit color.**
5. **Select Launch Redirection.**
6. **Respond to all prompts.**
7. **At the login prompt for the JavaRconsole window, type** `root`**, and then type the root password.**
8. **In the JavaRconsole window, select Devices.**
9. **Attach the LSI firmware update image** `.iso` **file.**

   a. **Select the CD-ROM Image.**

   b. **At the pop-up screen navigate to the ISO file you downloaded in** Step 1 **and click Open.**

10. **From the main SP ILOM GUI, select Remote Control -> Remote Power Control**
11. **Select Power –> Action –> Reset.**
12. **When the system reboots, select "1" (*Perform the Update*) from the JavaRconsole window.**

    The update proceeds. When complete, the console responds with a new prompt.
13. **In the JavaRConsole window select Devices -> CDROM Image to detach the LSI firmware update `.iso` file.**
14. **Select JavaRConsole Keyboard -> Control Alt Delete.**
15. **On system boot, you will notice the new LSI firmware version.**

Local Method

1. **Download the LSI firmware `.iso` file from the Sun Fire X64 servers web site and burn it to a bootable CD.**

Note – The bootable CD will appear blank when viewed using the operating system. This is expected behavior (CR6554839).

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2. **Attach a USB CD or DVD drive to the server module USB port.**
3. **Insert the bootable CD and reboot the server.**
4. **When the system reboots, select "1" to perform the update.**

   The firmware is upgraded.
5. **Reboot the system and you will see that the LSI firmware version has been updated.**

More on Updating the LSI Firmware

For information about the LSI firmware and BIOS, see the documentation files that accompany the LSI download. For LSI firmware versions included in this release, see "Software Release Firmware Versions" on page 1.

How to Determine The Firmware Version of Your Server

This section provides three methods of determining your firmware version build number:

Determining the Firmware Version Using the CLI Through the Management Ethernet Port

See the *Integrated Lights Out Manager 3.0 User's Guide* for more detailed information on this procedure.

1. **Connect an RJ-45 Ethernet cable to the NET MGT Ethernet port on the chassis CMM.**

2. **Establish an SSH connection using the following command:**

```
# ssh -l root SP-IP
```

   Where *SP-IP* is the IP address of the server module service processor.

3. **Enter the default password when you are prompted:**

   changeme

   After you have successfully logged in, the SP displays its default command prompt:

   ->

4. **Type the `version` command, which will return output similar to the following:**

```
-> version
SP firmware version: 1.x.x
SP firmware build number: 18640
SP firmware date: Tue Sep 13 12:50:37 PDT 2006
SP filesystem version: 0.1.13
```

The ILOM firmware is the `build number` listed above.

Determining the Firmware Version Using the CLI Through the Serial Port

1. **Configure your terminal device or the terminal emulation software running on a laptop or PC to the following settings:**
   - 8,N,1: eight data bits, no parity, one stop bit
   - 9600 baud
   - Disable hardware flow control (CTS/RTS)
   - Disable software flow control (XON/XOFF)
2. **Connect a dongle cable to the server module.**
3. **Connect a serial cable from the RJ-45 SER MGT port on the server module dongle to your terminal device or PC.**
4. **Press Enter on the terminal device to establish a connection between that terminal device and the server's SP.**

   The SP displays a login prompt.

   SUNSP*0003BA84D777* `login:`

   In this example login prompt, *0003BA84D777* is the Ethernet MAC address of the SP. This will be different for each server.
5. **Log in to the ILOM SP and type the default user name (`root`) with the default password (`changeme`).**

   After you have successfully logged in, the SP displays its default command prompt:

   ->

6. **Type the `version` command, which will return output similar to the following:**

```
-> version
SP firmware version: 1.x.x
SP firmware build number: 18640
SP firmware date: Tue Sep 13 12:50:37 PDT 2006
SP filesystem version: 0.1.13
```

The ILOM firmware build version is the `build number` listed above.

Determining the Firmware Version Using the Web Interface

1. **Connect to the ILOM web GUI by typing the IP address of the server's SP into your browser's URL field. For example:**

   `https://129.146.53.150`

2. **Log in to the ILOM SP and type the default user name (`root`) with the default password (`changeme`).**

   The first web page that is presented is the System Information -> Versions page, which includes the Build Number.

Locating ILOM Service Processor Addresses

Use one of the three methods listed here to locate the ILOM SP and IP address:

- DHCP server - See "ILOM Initial Setup" in the *Integrated Lights Out Manager 2.0 User's Guide*, for instructions on how to determine the IP address of a single server.
- Linux and Solaris open-source `nmap` command - The open-source `nmap` command provides a `-p` port option to scan for port 623, which can be used to quickly detect IPMI-enabled devices on a network. For example:

```
nmap -p 623 10.6.154.1/24
```

How to Reset the SP

To reset the ILOM SP, you can do any of the following:

- From the ILOM SP graphical web interface, navigate to the Maintenance tab, then use the Reset SP action.
- From the ILOM CLI, use the following command:

```
reset /SP
```

- Using IPMItool, use the following command:

```
ipmitool -U root -P password -H SP-IP bmc reset cold
```

  Where *SP-IP* is the IP address of the service processor.

- You can also reset the ILOM SP by shutting down the host, then removing and restoring AC power cords to the system.

For complete details, see the *Integrated Lights Out Manager 2.0 User's Guide*.

Recovering From a Failed Flash Update

This section contains instructions for recovering from a failed Sun Blade X6220 ILOM firmware upgrade. Several issues have been identified with the firmware upgrade, which could result in a failed or incomplete firmware upgrade.

Use the following procedure to recover from a failed firmware upgrade. Note that in a small percentage of cases (such as when no output is displayed on the SP serial port), the Graphics Redirect and Service Processor (GRASP) board must be replaced.

Caution – The last ILOM firmware released for Sun Blade X6220 server module must be used to recover from a failed flash update.

Prerequisites:

- A trivial file-transfer protocol (TFTP) server is required to reload the ILOM firmware.
- The host system must also remain powered off for the duration of the recovery process.

Note – Numbers printed below are in hexidecimal unless otherwise noted.

Recovery Steps:

1. **Determine if the ILOM SP first-level booter (referred to in this procedure as U-Boot) is intact. Follow documented procedures to connect to the SP serial port, apply power to the system, and observe the initial ILOM boot messages.**

   See the *Sun Blade X6220 Server Module Installation Guide* for details.

   - If no screen output is displayed, stop here. The SP board must be replaced. Refer to the *Sun Blade X6220 Server Module Service Manual* for instructions.
   - If screen output is displayed, continue to the next step.

2. **Enter the ILOM SP U-Boot command interpreter with `xyzzy`.**

   When the message, `Booting linux in 2 seconds...` is displayed, during ILOM initial boot, type **`xyzzy`** to enter the U-Boot command interpreter.

Note – The characters typed will not echo. Cutting and pasting the characters improves the chance of success. You might try cycling power to the system and entering **xyzzy** several times.

3. **Set the phy speed as follows:**

   a. **Type the following command to confirm the phy number:**

      mii info

   b. **Now set the speed to 100 mbit, using the phy number in the following command:**

      mii write *phy number* **0 2000**

      For example:

      mii write 4 0 2000

   4. **Disable automatic reboot.**

      Set the U-Boot environment variable, `bootretry`, to `-1` to temporarily disable automatic reboot:

```
set bootretry -1
```

   5. **Configure the network for TFTP access.**

      a. **Copy the ILOM SP firmware image to a TFTP server that is accessible on the same IP subnet as the ILOM SP network port.**

      b. **Set the network variables using the dhcp command or set the static IP address for the ILOM SP, TFTP server, gateway, and netmask as shown in the following example:**

```
set ipaddr n.n.n.n
set serverip n.n.n.n
set gatewayip n.n.n.n
set netmask n.n.n.n
```

   6. **Use the U-Boot tftp command to download the ILOM firmware image.**

      tftp 100000 *firmware.ima*

      Where *firmware.ima* is the name of the image file, such as, `ILOM.X6220-1.1.`*x*`.ima`.

Note – If the TFTP server or filename is incorrect, you might need to enter Control-C to halt the `tftp` command, then repeat this recovery procedure.

You should see a message similar to:

```
=> tftp 100000 ilom.XX6220-x.x.x.ima
Using FCC1 ETHERNET device
TFTP from server 10.6.154.8; our IP address is 10.6.154.99
Filename 'ilom.X6220-x.x.x.ima'.
Load address: 0x100000
Loading:
#################################################################
#################################################################
#################################################################
#################################################################
##########################
done
Bytes transferred = 13107200 (e00000 hex)
```

7. Confirm that the download succeeded:

a. Confirm that the `tftp` command output ends with:

```
Bytes transferred = ByteCount
```

b. Check the *ByteCount* number against the file size.

c. Use the `md` command and confirm that its output displays strings from the beginning of the firmware image file. For example:

```
=> md 100000
00100000: 244d4f44 554c4524 01004000 00000200    $MODULE$..@.....
00100010: 00000000 000000f2 67726173 70000000    ........grasp...
00100020: 01000200 40000000 61000000 0000ffff    ....@...a.......
00100030: ffff0000 00000100 00000000 0000aa55    ...............U
00100040: 46575f56 45525349 4f4e3d31 2e302e31 FW_VERSION=1.0.1
00100050: 0a46575f 44415445 3d4d6172 20203320 .FW_DATE=Mar  3
00100060: 32303036 0a46575f 4255494c 4454494d    2006.FW_BUILDTIM
00100070: 453d3130 3a35363a 30370a46 575f4445    E=10:56:07.FW_DE
00100080: 53433d57 41524e49 4e47203a 20554e4f    SC=WARNING : UNO
00100090: 46464943 49414c20 4255494c 44212120    FFICIAL BUILD!!
001000a0: 0affffff ffffffff ffffffff ffffffff    ................
```

8. **Erase the existing ILOM flash image:**

Caution – Interrupting the flash recovery process from this point onwards, or entering an incorrect U-Boot command, might result in a disabled service processor, which will require replacement. DO NOT stop or remove power from the system from this point onward.

   a. **Erase the exiting flash image with the `erase fe020000 ffffffff` command.**

      A series of dots will be displayed indicating the progress of the erase. For example:

```
=> erase fe020000 ffffffff
.....................................................................
.................Erased 200/200 sectors
```

   b. **If you see the error message:** `Step Warning: protected sectors will not be erased!` **remove the protection first with the following commands:**

```
protect off fe020000 ffffffff
erase fe020000 ffffffff
```

Note – If a persistent failure occurs, the service processor is not flash-upgradable, and must be replaced. Refer to the *Sun Blade X6220 Server Module Service Manual* for details on replacing the SP board.

9. **Use the U-Boot `cp.b` command to copy the new ILOM firmware image as follows:**

```
cp.b 10000 StartAddress ByteCount
```

- Calculate the *StartAddress* as follows:

  The `.ima` file needs to be loaded so that it fits right up against the highest available memory address. You need to start copying the image to flash at different addresses, depending on the size of the `.ima` file.

  To correctly position the image, compute the image *StartAddress* as follows:

  0xffffffff - image size + 1

  See the following examples of the *StartAddress* calculation:

  11M image (11534336 bytes): 0xffffffff - 11534336 + 1 = 0xff500000

  12.5M image (13107200 bytes): 0xff380000.

  14M image (14680064, or 0xe00000 bytes): 0xff200000

- Calculate the *ByteCount* as follows:

  The *ByteCount* should match the output of the `tftp` command, which should be just the hex representation of the `.ima` file size. It must be a hex value though, since U-Boot doesn't understand decimal numbers.

  For example:

```
=> cp.b 100000 ff380000 c80000
Copy to Flash
................................................................
................................................................
............done
```

c. **Use the `fmh` command to verify the new ILOM firmware image.**

   Before resetting, make sure the copy succeeded, using the `fmh` command, which should display firmware sections. For example

```
=> fmh
Listing FMH Modules
Flash Size : 32768 KB
Erase Size : 128 KB
Sector Count : 256
FMH Located at 0xff200000 of Size 0x00020000
Name    : grasp
Ver     : 1.1
Type    : 0x0002
Flags   : 0x0000
Size    : 0x000001ad
Location: 0xff200040
LoadAddr: 0xffffffff
CheckSum: Not Computed
-------------------------------------------------
FMH Located at 0xff220000 of Size 0x00120000
Name    : sysbios
Ver     : 1.25
Type    : 0x0000
Flags   : 0x0100
Size    : 0x00100000
Location: 0xff240000
LoadAddr: 0xffffffff
CheckSum: Valid
-------------------------------------------------
FMH Located at 0xff340000 of Size 0x00020000
Name    : bob-strm
Ver     : 1.0
Type    : 0x0000
Flags   : 0x0101
Size    : 0x0000c0eb
Location: 0xff340040
LoadAddr: 0xffffffff
CheckSum: Valid
-------------------------------------------------
FMH Located at 0xff360000 of Size 0x000c0000
Name    : osimage
Ver     : 1.0
Type    : 0x0006
Flags   : 0x0119
Size    : 0x000aaf27
Location: 0xff360040
LoadAddr: 0x00c00000
CheckSum: Valid
-------------------------------------------------
```

```
FMH Located at 0xff420000 of Size 0x00800000
Name    : root
Ver     : 1.0
Type    : 0x0007
Flags   : 0x0101
Size    : 0x007c5040
Location: 0xff440000
LoadAddr: 0xffffffff
CheckSum: Valid
-------------------------------------------------

FMH Located at 0xffc20000 of Size 0x00160000
Name    : www
Ver     : 1.0
Type    : 0x0007
Flags   : 0x0101
Size    : 0x00121000
Location: 0xffc40000
LoadAddr: 0xffffffff
CheckSum: Valid
-------------------------------------------------

FMH Located at 0xffd80000 of Size 0x00140000
Name    : params
Ver     : 1.0
Type    : 0x0011
Flags   : 0x0001
Size    : 0x00120000
Location: 0xffda0000
LoadAddr: 0xffffffff
CheckSum: Not Computed
-------------------------------------------------

FMH Located at 0xffee0000 of Size 0x00060000
Name    : boot
Ver     : 1.0
Type    : 0x0001
Flags   : 0x0000
Size    : 0x0003cb6c
Location: 0xfff00000
LoadAddr: 0xffffffff
CheckSum: Not Computed
-------------------------------------------------
```

Note – If the **fmh** command doesn't show anything, you may have entered an incorrect memory address somewhere. Start again from step 5. Do not reset the SP in this state.

10. **Reset the ILOM service processor.**

    Once you are certain that the service processor firmware image has been recovered, you can restart the service processor with the **reset** command.

```
=> reset
```

    The SP should boot correctly.

    - If the SP doesn't boot correctly, but it gets to the "Booting linux in 2 seconds...", message, restart this procedure from the beginning.
    - If it doesn't get as far as the "Booting linux.." message, contact your Sun representative.

Note – The sunservice account is not supported in ILOM 3.0. Contact your sunservice representative if you want to enable your sunservice account in ILOM 3.0.

11. **When the SP has booted all the way to the linux login prompt, log in with the following**

    - Username: **sunservice**
    - Password: **changeme**

    Remember, you will have lost all configuration data after performing the flash update.

12. **Restore the** `/coredump` **partition with this command:**

```
/usr/local/bin/format_coredump
```

    The format_coredump program might be named something like: `format_coredump.galaxy.2M`, but there is only one such program in `/usr/local/bin`. Enter **ls /usr/local/bin** to see a list of programs and run whichever one is there.

13. **Recover the system BIOS.**

Note – This manual ILOM SP recovery process does *not* reflash the system BIOS. Repeat the firmware upgrade process, using the ILOM GUI or CLI procedures as described in "How to Flash Upgrade Your Server" on page 11 and the *Integrated Lights-Out Manager 2.0 User's Guide*.

14. **Reset your service processor and BIOS configuration settings as needed, because they might be lost during this recovery.**

CHAPTER 3

Special Considerations for Specific Firmware Releases

This chapter describes issues that might affect the firmware upgrade. See the following sections for special considerations for the following ILOM releases:

ILOM Firmware 3.0.3.34 Update

This section describes considerations that might affect the firmware upgrade. See the *Sun Integrated Lights Out Manager 3.0 User's Guide*. For general issues on ILOM and issues that have been fixed with this release of the firmware, see the *Sun Blade X6220 Server Module Product Notes*.

KCS Channel Does Not Work When Upgrading From 2.0.3.10 to 3.0.3.34 (6829799)

Due to an error in the 2.0.3.10 code, the KCS channel does not work when upgrading from 2.0.3.10 to 3.0.3.34.

Workaround

Do not use the KCS channel when upgrading from release 2.0.3.10 to 3.0.3.34.

ILOM Firmware 2.0.3.2 Update

This section describes considerations that might affect the firmware upgrade. See the *Sun Integrated Lights Out Manager 2.0 User's Guide*. For general issues on ILOM and issues that have been fixed with this release of the firmware, see the *Sun Blade X6220 Server Module Product Notes*.

Coordinated ILOM Upgrade of Sun Blade 6000 and Sun Blade 6048 CMM and X6220 Server Modules.

The Sun Blade 6000 CMM and Sun Blade 6048 CMM (Chassis Management Module) and X6220 server module service processors must all be upgraded to the latest ILOM 2.0.3.2 release.

Please upgrade the Sun Blade X6220 server modules, then the Sun Blade 6000 and Sun Blade 6048 CMM, to ILOM 2.0.3.2, using ILOM CLI, GUI, or IPMI interfaces.

ILOM Firmware 2.0.3.1 Update

This section describes considerations that might affect the firmware upgrade. See the *Sun Integrated Lights Out Manager 2.0 User's Guide*. For general issues on ILOM and issues that have been fixed with this release of the firmware, see the *Sun Blade X6220 Server Module Product Notes*.

FRU ID Data Correction for ILOM 2.0.3.1 (6631275)

Software 1.1 for the Sun Blade X6220 server module contains a build of ILOM 2.0.3.1 with a serious bug. Upgrading to this ILOM version causes some FRU data to be lost. Because of this, Software 1.1 has been withdrawn and replaced by Software 1.1a.

If you *have not* yet upgraded to the ILOM provided with Software 1.1, this issue does not affect you. Simply discard any copies of Software 1.1 and obtain Software 1.1a which contains ILOM firmware with the fix.

If you *have* upgraded to the ILOM provided with Software 1.1, you must install the ILOM firmware provided with software 1.1a. Doing so will both remove the bug and recover some of the FRU data that was previously not viewable. The remaining FRU data must be re-entered manually.

Caution – If you have installed the ILOM firmware included in Software 1.1 *do not downgrade to an older version of the ILOM firmware*. Doing so will prevent any of the lost data from being recovered. The only recovery mechanism is to install the ILOM build provided with Software 1.1a.

Identifying your ILOM Firmware

You can identify your ILOM firmware using the ILOM CLI or WebGUI:

- From the CLI, enter the `version` command.
- From the WebGUI, bring up the System Information/Versions tab.

In the information you obtain, find the "Firmware Version" (just "Firmware" in the CLI) and "Firmware Build Number". Depending on the values you obtain, you should take one of the following actions:

- If the "Firmware Version" is 2.0.3.1 and the "Firmware Build Number" is 23240, then you have installed the ILOM firmware included in Software 1.1. You must install the replacement ILOM firmware in Software 1.1a and re-enter some lost data, as described in "Lost FRU Data and How To Fix It" on page 31
- If the "Firmware Version" is 2.0.3.1 and the "Firmware Build Number" is 26140, then you have already installed the ILOM firmware included in Software 1.1a. No further action is required.
- If you downgraded from Firmware Version 2.0.3.1 to Firmware Version is 1.1.x with any build number, you will must install the replacement ILOM firmware in Software 1.1a. You must then re-enter the FRU ID data that was lost as described in "Lost FRU Data and How To Fix It" on page 31.

Lost FRU Data and How To Fix It

The ILOM bug causes the following FRU data to be lost:

- Product Part Number
- Product Serial Number
- Chassis Serial Number

You can recover the Product Part Number and Product Serial Number by installing the ILOM firmware provided with Software 1.1a. If you downgraded the ILOM after observing the problem, Product Part Number and Product Serial Number must be re-entered manually.

The Chassis Serial Number will not be recovered with the Software 1.1a update and must be re-entered in any case.

Follow these steps to re-enter the lost FRU data:

1. **Use SSH to log in to the "sunservice" ILOM account. From the Solaris or Linux command line:**

   `ssh -l sunservice` *ipaddress*

   where *ipaddress* is the Service Processor IP address.

2. **Enter one of the following commands.**
   - If you only need to re-enter the chassis serial number, enter:

     `servicetool --fru_chassis_serial_number`

   - If you need to re-enter all three corrupted FRU values, enter:

     `servicetool --fru_product_part_number`
     `--fru_product_serial_number --fru_chassis_serial_number`

3. **Enter the FRU ID numbers when prompted.**

Upgrade Notes

Note the following considerations before upgrading your server module to ILOM 2.0.3.1 firmware:

- If you plan to install a Sun Blade x6220 server module into a chassis that is running 2.0.3.1 firmware, you must upgrade the server module to ILOM 2.0.3.1.
- If you plan to upgrade a chassis running an earlier firmware version to ILOM 2.0.3.1, upgrade the server module to 2.0.3.1 first, then the upgrade chassis CMM firmware.

ILOM Firmware 1.1.8 Update

This section describes considerations that might affect the firmware upgrade. For general issues on ILOM and issues that have been fixed with this release of the firmware, see the *Sun Blade X6220 Server Module Product Notes*.

Refer also, to the *Integrated Lights Out Manager Administration Guide for ILOM 1.1.1*, and *Integrated Lights Out Manager (ILOM) Supplement for Sun Blade X6220 Server Module*.

FRU Information Appears Empty After Updating the ILOM Firmware and the BIOS (6406138)

The host CPU and DIMM FRU information shown by the service processor is provided to the service processor during each BIOS power-on-self-test (POST). Therefore, after a BIOS/ILOM upgrade, this FRU information is empty until the first host BIOS POST.

Workaround

This is expected behavior. Reboot the server and allow it to complete POST during bootup to repopulate the FRU lists.

Serial Console on Host System Might Stop Working After BIOS Update Until CMOS Settings Are Cleared (6489959)

After updating the system BIOS, you might need to clear CMOS settings to get serial console output from the host. This is because CMOS defaults might be changed from your existing settings in the new BIOS.

Workaround

If you cannot get serial console output, clear the CMOS settings. To clear CMOS settings, use the following commands (in this example, the default username, `root`, and the default password, `changeme`, are used):

```
ipmitool -U root -P changeme -H SP-IP chassis power off
ipmitool -U root -P changeme -H SP-IP chassis bootdev disk clear-
cmos=yes
```

ILOM 1.0.*x* Upgrade Might Fail BIOS Flash (6499287)

ILOM service processor might not successfully update the BIOS version, if a previous flash upgrade has failed. If the BIOS version is not correct after ILOM flash upgrade completes, use the `-f` force flag on the ILOM CLI `load` command, to force BIOS flash upgrade.

User Cannot Login to ILOM GUI Sometimes After Flashing New Image (6513809)

Sometimes after flashing an image on SP, the ILOM GUI will not allow you to log in and gives an `Authentication fail` error. Clearing the cache and cookies of the web browser enables you to log in as usual.

JavaRConsole Does Not Support Some Non-US Keyboard Types (6492584)

ILOM 1.1.*x* releases provide limited support for non-UN keyboards. Keys above the normal US keyboard range are transmitted to the server.

However, key remapping between US and non-US keyboards is not automatically performed, and there are keys which do not function, which results in limitations in internalization support in Java Web Start.

Workaround

Use the key and character remapping capabilities of the installed server OS to work around this issue.