



Sun Fire™ X4600 M2 Server Release Notes For Software Releases 2.1, 2.1.2, 2.2, 2.3 and 3.0

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Preface

This document contains procedures and special information for upgrading your Sun Fire X4600 M2 server to the Release 3.0 software upgrade bundle.

Related Documentation

For a description of the document set for the Sun Fire X4600 server, see the *Where To Find Documentation* sheet that is packed with your system and also posted at the product's documentation web page:

<http://docs.sun.com/app/docs/prod/sf.x4600m2>

Translated versions of some of these documents are available in French, Simplified Chinese, Traditional Chinese, Korean, and Japanese.

<http://docs.sun.com/app/docs/prod/sf.x4600m2?l=fr>

<http://docs.sun.com/app/docs/prod/sf.x4600m2?l=zh>

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English documentation is revised more frequently and might be more up-to-date than the translated documentation.

For all Sun software and hardware manuals, go to:

<http://docs.sun.com>

For other documentation, go to:

<http://www.sun.com/documentation>

Product Updates

For product updates that you can download for the Sun Fire X4600 server, please follow the links from the following Web site:

<http://www.sun.com/download/>

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 Fire X4600 server 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

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Sun Fire X4600 M2 Server Release Notes for Software Releases 2.1, 2.1.2, 2.2, 2.3 and 3.0,
part number 820-5637-16

Description of Software Releases

This chapter describes the contents of the following releases:

- Software 2.1
- Software 2.1.2
- Software 2.2
- Software 2.3
- Software 3.0

It has the following sections:

- [“Important Changes” on page 1](#)
- [“Software 2.2 and 2.3” on page 3](#)
- [“Software Versions and Enhancements” on page 4](#)
- [“Component Versions By Release” on page 7](#)
- [“LSI Firmware Features” on page 9](#)
- [“Firmware Upgrade Special Considerations” on page 16](#)

Important Changes

Software 3.0

Software 3.0 adds support for the following:

- LSI MPT SAS firmware 1.27.0 0 and MPT BIOS 6.26.00
- BIOS 132 (OABIT132)
- ILOM Service Processor firmware 3.0.3.31.a build 50707

Software 2.3

Software 2.3 includes the following enhancements:

- An upgrade of the service processor firmware to Integrated Light-Out Manager (ILOM) 3.0.3.31. After the upgrade, refer to ILOM 3.0 documentation rather than ILOM 2.0 documentation.
- Support for VMware ESX 3.5 Update 3.
- Support for VMware ESXi 3.5.

Software 2.2

Software 2.2 adds support for the following:

- CPU modules with the new enhanced quad-core Opteron processor.
- Use of 8-GB DIMMs with all supported OSs.

Software 2.1.2

Software 2.1.2 adds support for the following:

- 8-GB DIMMs. However, software issues prevent the use of 8-GB DIMMs with systems running the following operating systems:
 - Red Hat Enterprise Linux 5U1.
 - Red Hat Enterprise Linux 4U6.
 - Red Hat Enterprise Linux 3U9.
 - VMware ESX 3.5 U1.

Software 2.1

Software 2.1 adds support for VMware ESX 3.5 U1 and AMD Errata 326.

Operating System Support

Software 3.0

Software 3.0 adds support to the following operating systems:

- Red Hat Enterprise Linux 4 Update 8
- Red Hat Enterprise Linux 5 update 3 and update 4 (64-bit only)
- Oracle Enterprise Linux 4
- Oracle Enterprise Linux 5 (64-bit only)
- SUSE Linux Enterprise Server 11 (64-bit only)
- SUSE Linux Enterprise Server 10 SP3 (64-bit only)
- Solaris 10 OS 10/08S
- OpenSolaris 2009.06
- VMware ESX 3.5 Update 4
- VMware ESXi 3.5 Update 4
- VMware ESX 4.0
- VMware ESXi 4.0
- Windows 2008 Server R2 (64-bit only)
- Windows 2003 Server SP2 (both 32-bit and 64-bit; Standard and Enterprise editions)

Software 2.2 and 2.3

Software 2.2 and 2.3 adds support to the following operating systems:

- Red Hat Enterprise Linux 5, Update 1 and Update 2 (64-bit only)
- Red Hat Enterprise Linux 4 Update 6 and Update 7 (both 32-bit and 64-bit)
- Red Hat Enterprise Linux 3 Update 9 (64-bit only; Quad-Core AMD Opteron processors not supported)
- Solaris 10 OS 10/08
- SUSE Linux Enterprise Server 10 SP1 and SP2 (64-bit only)
- SUSE Linux Enterprise Server 9 SP3 and SP4 (64-bit only; SP3 is supported only with dual-core Opteron)

- Windows 2003 Server SP2 (both 32-bit and 64-bit; Standard and Enterprise editions)
- Windows 2008 Server (both 32-bit and 64-bit; Standard, Enterprise, and Datacenter editions)
- VMware ESX 3.5 Update 3
- VMware ESXi 3.5 Update 2

Software 2.1 and 2.1.2

Software 2.1 and Software 2.1.2 support the following operating systems:

- Red Hat Enterprise Linux 5 Update 1 (64-bit only; 8-GB DIMMs not supported)
- Red Hat Enterprise Linux 4 Update 6 (both 32-bit and 64-bit; 8-GB DIMMs not supported)
- Red Hat Enterprise Linux 3 Update 9 (64-bit only; Quad-Core AMD Opteron processors not supported; 8-GB DIMMs not supported)
- Solaris 10 OS 5/08
- SUSE Linux Enterprise Server 10 SP1 (64-bit only)
- SUSE Linux Enterprise Server 9 SP3 (64-bit only; Quad-Core AMD Opteron processors not supported)
- Windows 2003 Server SP2 (both 32-bit and 64-bit; Standard and Enterprise editions)
- Windows 2008 Server (both 32-bit and 64-bit; Standard, Enterprise, and Datacenter editions)
- VMware ESX 3.5 Update 1 (8-GB DIMMs not supported).

Updated OS Support Information

For a current list of supported operating systems, refer to this web page:

<http://www.sun.com/servers/x64/x4600/os.jsp>

Software Versions and Enhancements

The following sections describe software versions and enhancements:

Software 3.0

Software 3.0 includes the following software:

- LSI MPT SAS firmware 1.27.00 MPT BIOS 6.26.00 (Phase 15)
- BIOS 132
- ILOM Service Processor firmware 3.0.3.31.a, Build 50707
- Bootable Diagnostics CD, which includes SunVTS 7.0 ps6
- Sun Installation Assistant (SIA) for Linux and Windows CD version 2.3.13.0
- Tools and Drivers CD version 3.0
- MSM 2.9 for Linux and Windows
- IPMItool 1.8.10.1 and IPMIflash 1.8.9.4
- HERD 2.0
- LSI SNMP agent 3.16
- LSI cfggen utility 2.04 (DOS version) for configuration of RAID arrays on internal disks
- Support for all CPU modules with AMD Opteron Series 8000 CPUs, both dual-core and quad core

Software 2.3

Software 2.3 includes the following software:

- LSI MPT SAS firmware 1.26.90 and MPT BIOS 6.24.01 (Phase 14)
- BIOS 126 (0ABIT126)
- ILOM Service Processor firmware 3.0.3.31, Build 42822
- Bootable Diagnostics CD, which includes SunVTS 7.0 ps4
- Sun Installation Assistant (SIA) for Linux and Windows CD version 2.2.13
- Tools and Drivers CD version 2.3
- MSM 2.88 for Linux and Windows
- LSI SNMP agent 3.16
- LSI cfggen utility (DOS version) for configuration of RAID arrays on internal disks
- IPMItool and IPMIflash 1.8.9.4
- SunCFG 1.12
- HERD 2.0
- Support for all CPU modules with AMD Opteron Series 8000 CPUs, both dual-core and quad core

Software 2.2

Software 2.2 includes the following software:

- LSI MPT SAS firmware 1.23.90 and MPT BIOS 6.18.01 (Phase 11 with Phase 14 drivers)
- BIOS 114 (0ABIT114)
- ILOM Service Processor firmware 2.0.2.10, Build 38791
- Bootable Diagnostics CD, which includes SunVTS 7.0 ps4
- Sun Installation Assistant (SIA) for Linux and Windows CD version 2.2.2
- Tools and Drivers CD version 2.2
- MSM 2.88 for Linux and Windows
- LSI SNMP agent 3.16
- LSI cfggen utility (DOS version) for configuration of RAID arrays on internal disks
- IPMItool and IPMIflash 1.8.9
- SunCFG 1.12
- HERD 1.9
- Support for all CPU modules with AMD Opteron Series 8000 CPUs, both dual-core and quad core

Software 2.1.2

Software 2.1.2 includes the same software as 2.1, except that the BIOS has been upgraded to BIOS 101 (0ABIT101).

Software 2.1

Software 2.1 includes the following software:

- LSI MPT SAS firmware 1.23.90 and MPT BIOS 6.18.01 (Phase 11)
- BIOS 96 (0ABIT96)
- ILOM Service Processor firmware 2.0.2.5, Build 32591
- Bootable Diagnostics CD, which includes SunVTS 7.0ps2
- Sun Installation Assistant (SIA) for Linux and Windows CD version 2.1.1
- Tools and Drivers CD version 2.1
- MSM 2.29 for Linux and Windows

- LSI SNMP agent 3.13
- LSI cfggen utility (DOS version) for configuration of RAID arrays on internal disks
- IPMItool and IPMiflash 1.8.9
- SunCFG 1.12
- Support for all CPU modules with AMD Opteron Series 8000 CPUs, both dual-core and quad core

Component Versions By Release

This section lists the component versions for the various releases of the Sun Fire X4600 M2 server software.

TABLE 1-1 Software Release 3.0 Component Versions

Component Name	Sun Fire X4600 M2 Server Version
ILOM FW 3.0.3.31.a	SP build 50707
BIOS	0ABIT132 (BIOS 132)
LSI firmware	fw1.27.00_bios6.26.00)

TABLE 1-2 Software Release 2.3 Component Versions

Component Name	Sun Fire X4600 M2 Server Version
ILOM FW 3.0.3.31	SP build 42822
BIOS	0ABIT126 (BIOS 126)
LSI firmware	fw1.26.90-bios6.24.01

TABLE 1-3 Software Release 2.2 Component Versions

Component Name	Sun Fire X4600 M2 Server Version
ILOM FW 2.0.2.10	SP build 3871
BIOS	0ABIT114 (BIOS 114)
LSI firmware	fw1.23.90-bios6.18.01

TABLE 1-4 Software Release 2.1.2 Component Versions

Component Name	Sun Fire X4600 M2 Server Version
ILOM FW 2.0.2.10	SP build 3871
BIOS	0ABIT114 (BIOS 114)
LSI firmware	fw1.23.90-bios6.18.01

TABLE 1-5 Software Release 2.1 Component Versions

Component Name	Sun Fire X4600 M2 Server Version
ILOM FW 2.0.2.5	SP build 32591
BIOS	0ABIT096 (BIOS 96)
LSI firmware	fw1.23.90-bios6.18.01

TABLE 1-6 Software Release 2.0 Component Versions

Component Name	Sun Fire X4600 M2 Server Version
ILOM FW 2.0.2.5	SP build 29771
BIOS	0ABIT087 (BIOS 87)
LSI Firmware	fw1.23.90-bios6.18.01

TABLE 1-7 Software Release 1.3a Component Versions

Component Name	Sun Fire X4600 M2 Server Version
ILOM FW 1.0.6	SP build 26075
BIOS	0ABIT050 (BIOS 50)
LSI firmware	fw1.16.40-bios6.14.04

TABLE 1-8 Software Release 1.2 Component Versions

Component Name	Sun Fire X4600 M2 Server Version
ILOM 1.1.8	SP build 18244
BIOS	0ABIT050 (BIOS 50)
LSI Firmware	fw1.16.40-bios6.14.04

TABLE 1-9 Software Release 1.1 Component Versions

Component Name	Sun Fire X4600 M2 Server Version
ILOM	SP build 15632
BIOS	0ABIT043 (BIOS 43)
LSI Firmware	fw1.16.00-bios6.06.10

TABLE 1-10 Software Release 1.0.1 Component Versions

Component Name	Sun Fire X4600 M2 Server Version
ILOM	SP build 14023
BIOS	0ABIT036 (BIOS 36)
LSI Firmware	fw1.10.00-bios6.06.06

TABLE 1-11 Software Release 1.0 Component Versions

Component Name	Sun Fire X4600 M2 Server Version
ILOM	SP build 14023
BIOS	0ABIT035 (BIOS 35)
LSI Firmware	fw1.10.00-bios6.06.06

LSI Firmware Features

The following tables summarize LSI HBA firmware by phase. A software release contains LSI firmware features for its designated phase and all previous phases.

[“LSI Firmware Phase 16 Features” on page 10](#)

[“LSI Firmware Phase 15 Features” on page 10](#)

[“LSI Firmware Phase 14 Features” on page 11](#)

[“LSI Firmware Phase 13 Features” on page 12](#)

[“LSI Firmware Phase 12 Features” on page 13](#)

[“LSI Firmware Phase 11 Features” on page 14](#)

TABLE 1-12 LSI Firmware Phase 16 Features

Feature	Description
PhyVacant bit	Added to PhyInfo SAS Expander Page 1. Value 1 when expander reports PHY_VACANT for this phy.
Dynamically enable and disable Phys	Changes in the PhyDisable bit take effect immediately upon issuing a Write Current action on SAS IOUnit Page 1. Any devices attached to phys dynamically disabled will be removed normally through discovery.
Ability to wait for boot device to be present prior to replying to PortEnable	Boot Device Wait Time field in SAS IO Unit Page #2 that specifies maximum delay for the PortEnable response until the boot device specified in BIOS Page #2 is located.
SCSI to SATA Write Long command translation	SCSI Write Long command translated to SATA Write Uncorrectable EXT command.

TABLE 1-13 LSI Firmware Phase 15 Features

Feature	Description
Firmware resource availability	Target-mode driver can determine available resources.
Support for increased SATA drive NCQ depth	Firmware can now utilize 16-command and 32-command queue depths on drives that support them.
Configure initial AWT advertised.	Whenever the IOC attempts to open an end device or expander, the OPEN address frame contains an ARBITRATION WAIT TIME (AWT) value that is used to resolve deadlocks occurring when another device in the topology attempts to open the IOC at the same time. The initial value programmed into this field is now configurable via NVDATA.
Optionally disable phy lockup Workaround	The phy lockup workaround periodically examines each direct-attached phy and resets the link if it detects that an in-progress data transfer has stalled for too long. Now, it is possible to disable the phy lockup workaround for direct-attached phys with end devices, expanders, or both (which effectively disables the workaround altogether).

TABLE 1-13 LSI Firmware Phase 15 Features

Feature	Description
Enable/Disable Integrated RAID data scrub on SSDs	SSDScrubDisable flag (off by default) disables data scrub on RAID 1 and RAID 1E volumes consisting of SSDs.
Support for Sun StorageTek 2500 Series	Supports new CONNECTOR TYPE field in SMP DISCOVER Response
Increase minimum supported target ports to 2444	Keeps 10 bus/target IDs reserved for foreign volumes. This increases the number of supported foreign volumes from 2 to 5 since foreign volumes can consume 2 bus/target IDs per volume.

TABLE 1-14 LSI Firmware Phase 14 Features

Feature	Description
Internal Device Reset Completion Event	Internal TARGET RESET request during various error conditions instead of a host notification event. Sends MPI_EVENT_SAS_DEVICE_STATUS_CHANGE (0x0F) with a reason code of MPI_EVENT_SAS_DEV_STAT_RC_CMPL_INTERNAL_DEV_RESET (0x0E)
Inaccessible Initiator Reason Code for SAS Initiator Device Status Change Event	Communicates that target-mode IOC has reached maximum number of supported devices.
SATA Init Failure Bit	New bit in DiscoveryStatus field of SAS Discovery Error Events to indicate SATA Init failure.

TABLE 1-14 LSI Firmware Phase 14 Features

Feature	Description
SGPIOType 3 to Modulate Activity LED with Disk I/O	New event identical to SGPIOType 4, except that IOC's SGPIO Initiator modules the activity bit when I/O's are outstanding.
MPT FWUpload Support for Entire Flash Image	Previously, an MPT FWUploadrequest with the ImageTypefield set to MPI_FW_UPLOAD_ITYPE_COMPLETE (0x0A) would immediately fail back to the host with an IOCLogInfoof 0x3003E003 (IOP_LOGINFO_CODE_FWUPLOAD_ENTIRE_FLASH_UPLOAD_FAILED). Now, the request is processed and firmware will upload the entire contents of flash to host memory.
Large Drive Count (LDC) for Mixed SAS and SATA	Expands existing LDC support from SAS-only to both SAS and SATA.

TABLE 1-15 LSI Firmware Phase 13 Features

Feature	Description
SATA Drive Temperature Reading	Provides ability to get temperature reading from SATA drives that support the SCT feature set.
Ability to reset direct-attached I2C backplane PSoC	Support for new GPIO type.
Support for PHY VACANT returned by SAS2 Zoned Expander	Allows dynamic change of phy status between "vacant" and "not vacant".
GPIO Enhancements for Link Speed Indication	Implements CNFG_GPIO_FUNCTION_PORT_SPEED (0x10)
User-settable RAID volume names	New RAID Action Request "Set Volume Name".
Large Drive Count (LDC)	Extends maximum target support from 242 to 512 (SAS only).

TABLE 1-16 LSI Firmware Phase 12 Features

Features	Description
Link Reset or Hard Reset on SATA drives	Generates LINK RESET or HARD RESET in SMP PHY CONTROL message to SATA drives.
Initiator Removal Events	Generates events when initiators are added to or removed from topology.
Integrated RAID support for implementations with both Flash & PBRAM memories	Supports increased number of devices
Integrated RAID support for implementations with both Flash & PBRAM memories	Supports increased number of devices
Integrated RAID support for dual-ported devices	Supports dual-ported devices within a volume or hot spare.
Optional Resync	Bit in RAID Action Data word can be set to prevent resync on Volume Disable.

TABLE 1-17 LSI Firmware Phase 11 Features

Feature	Description
SMP Configure Route Information optimization	When wide ports are detected in expander connections, route table programming is optimized, resulting in fewer SMP requests.
New MPI event for multiple paths on the same domain	Configurable mode detects multiple controller ports wired into the same domain Useful with storage enclosures that have dedicated "in" and "out" ports cabled together.
Generate Discover Error Event for SATA Init Fail	When Firmware SATA Initialization fails, an MPI event notifies host that device is not accessible.
Timestamp Logging Functionality	When enabled, host periodically receives an MPI Log Data event with current time stamp information. This supports synchronization between host logs and firmware ring buffers. Currently only implemented as a 128-second periodic event.
Support for enable/disable of hiding of drives with DDF metadata	Allow control of hiding drives with DDF metadata via NVDATA setting. When enabled, drives are not visible to BIOS or OS (same behavior as in Phases 9 and 10). When disabled, drives are visible (same behavior as in Phase 8).
Ability to clear any DDF metadata from the foreign drives via RAID command	When DDF compliant metadata is found, the BIOS presents the user with the option to delete the metadata from all drives. There is no capability to list drives with DDF metadata.

TABLE 1-18 LSI Firmware Phase 10 Features

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

Firmware Upgrade Special Considerations

This section describes bugs, unexpected behavior, and other considerations that might affect an upgrade to the firmware included in this release.

Current Issues

ILOM Upgrade Using ipmiflash Not Supported With 2.0.2.1(6668957)

The ipmiflash utility cannot be used to upgrade the ILOM software from 2.0.2.1 to later versions.

Workaround

Use the ILOM command line interface, as described in “Updating the BIOS and ILOM Firmware” on page 19.

New ILOM Flash Update Layout

Starting with ILOM 1.1.1, the firmware uses a new, more reliable flash layout. Because of the layout changes, special steps might be required to downgrade to previous ILOM 1.0.x releases.

You might have to perform the flash downgrade to 1.0.x process 2 times, to reformat the flash layout to the old format. If the flash downgrade through GUI, CLI, or N1 System Manager, does not succeed the first time, retry a second time to complete the process.

The new ILOM flash process only powers off the host if a new BIOS version is needed. The ILOM CLI load command provides the `-f` option to force update of all components. Use the following command to force updating all firmware components:

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

where *tftpserver* is a trivial file-transfer protocol (TFTP) server and *firmware* is the name of the image file, such as `ilom.x4600m2-1.1.1.ima`.

ILOM CD Appears Blank (6554839)

The CD used to upgrade the ILOM appears blank when viewed from the OS. This is expected behavior.

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. Reset the server and allow it to complete POST during bootup to repopulate the FRU lists.

Performing Update From CLI Might Result in Keyboard Redirection Error Dialog Box in JavaRConsole (6485951)

If you use the CLI to perform the update and JavaRConsole is active, a dialog box might appear in JavaRConsole with the following message and an OK button:

```
Keyboard redirection error: an established connection was
aborted by the software in your host machine
```

Workaround

This is expected behavior. Click OK in the dialog box to continue. It is possible that clicking the OK button will not close the dialog box. In that case, terminate the JavaRConsole process. For example, on a Windows platform, press Control+Alt+Delete to bring up the list of open processes, then terminate the JavaRConcole process.

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. For details, see “New ILOM Flash Update Layout” on page 13.

When Downgrading from Quad-Core to Dual-Core, No Firmware Downgrade is Necessary (6732882)

If you downgrade from quad-core to dual-core, no firmware downgrade is necessary. An upgrade to the latest firmware is recommended.

SIA Upgrade of BIOS/LSI Firmware Not Supported (6681743)

(Fixed in Software 2.2.)

Upgrading the BIOS and LSI firmware using the Sun Installation Assistant (SIA) utility is not supported in Software 2.1. Upgrading the Service Processor (ILOM) firmware is supported.

For more information on SIA, refer to the Sun Installation Assistant for Windows and Linux User's Guide.

ILOM in Software 1.3 Causes FRU Data to be Lost (6631275)

(Fixed in Software 1.3a.)

Software 1.3 for the Sun Fire X4600 M2 contains a build of ILOM 2.0.2.1 with a serious bug. Upgrading to this ILOM version causes FRU data to be lost. Because of this, Software 1.3 has been withdrawn and replaced by Software 1.3A.

If you *have not* yet upgraded to the ILOM provided with Software 1.3, this issue does not affect you. Simply discard any copies of Software 1.3 and obtain Software 1.3A, which contains ILOM firmware with the fix.

If you *have* upgraded to the ILOM provided with Software 1.3, you must install the ILOM firmware provided with Software 1.3A. Doing so will both remove the bug and recover some of the lost FRU data. The remaining FRU data must be re-entered manually.



Caution – If you have installed the ILOM firmware included in Software 1.3 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 1.3A.

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 2.0.2.1 and the “Firmware Build Number” is 23233, then you have installed the ILOM firmware included in Software 1.3. You must install the replacement ILOM firmware in Software 1.3A and re-enter some lost data, as described in “Lost FRU Data and How To Recover it.” on page 16
- If the “Firmware Version” is 2.0.2.1 and the “Firmware Build Number” is 26075, then you have already installed the ILOM firmware included in Software 1.3A. No further action is required.
- If the “Firmware Version” and “Firmware Build Number” are any other values, then this issue does not affect you.

▼ Lost FRU Data and How To Recover 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 1.3A. If you downgraded the ILOM after observing the problem, Product Part Number and Product Serial Number are lost permanently, and must be re-entered. Chassis Serial Number 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 FRU values, enter:

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

3. Enter the FRU information when prompted.

Cannot Log in to WebGUI After Flashing New Image (6513809)

(Fixed in Software 1.3a.)

After flashing a new image, you may not be able to log in to the WebGUI. This can happen if the WebGUI is open when the new image is flashed.

Workaround

Clear the browser's cache and cookies.

Cannot Log in to the Service Processor with 16-Character Passwords using ILOM Web GUI or CLI (6286187)

(Fixed in Software 1.3a.)

If your password contains exactly 16 characters, you will not be able to log in to the service processor (SP) using either the ILOM web GUI or CLI.

Workaround

Choose a password containing fewer than 16 characters.

ILOM Upgrade Might Fail BIOS Flash (6499287)

(Fixed in Software 1.1.)

ILOM service processor might not successfully update the BIOS version if a previous flash upgrade has failed.

This issue applies only up to ILOM 1.1.1.

Workaround

If the BIOS version is not correct after ILOM flash upgrade completes, force the BIOS flash upgrade using the -f force flag on the ILOM CLI load command.

Update Procedures

This chapter describes how to update your server to Software Release 2.0 . See the following sections:

- [“Updating Your Server Firmware” on page 21](#)
 - [“Recovering from a Failed Flash Update” on page 26](#)
-

Updating Your Server Firmware

The Integrated Lights Out Manager (ILOM) firmware and BIOS are tightly coupled and are always updated together. The LSI firmware is usually updated at the same time as the BIOS and ILOM; LSI firmware can be updated before or after the BIOS and ILOM firmware.

▼ Updating the BIOS and ILOM Firmware



Caution – To ensure a successful update, do *not* attempt to modify the ILOM configuration, or use other ILOM GUI, CLI, SNMP, or IPMI interfaces, during the flash update process. Wait until after the update succeeds before making further ILOM configuration changes. The update requires a system server, and takes about 20 minutes.

1. **Determine the current version of the ILOM firmware.** See [“Verifying the ILOM Firmware Version” on page 24](#).
2. **Review the section “Firmware Upgrade Special Considerations” on page 16 for known issues and considerations regarding the flash update.**

3. Download the latest flash image at:

<http://www.sun.com/servers/x64/x4600/downloads.jsp>

Be sure to download the image for M2 server.

4. Use the ILOM GUI, the ILOM CLI `load` command, or N1 System Manager to perform the firmware update.

Note – Due to the increased memory use during Web GUI operations, you might need to use N1 System Manager or the ILOM CLI `load` command to update the ILOM firmware.

From the ILOM CLI, use the following command:

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

where *tftpserver* is the server that contains the update and *ilom.firmware.ima* is the image file. For example: *ilom.x4600.1.1.1-r15632.ima*.

If you have any problems with the flash update, refer to the section “[Recovering from a Failed Flash Update](#)” on page 26.

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 JavaRConsole to interact with the system and to mount a CD image. This method does not require physical access to the system. See “[JavaRConsole Method](#)” on page 22.
- Reboot the system from a CD inserted into the system’s optical drive. This method requires physical access to the system. See “[Local Method](#)” on page 23.

JavaRConsole Method

1. 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.

2. Select Remote Control → Redirection.

3. Select 8-bit or 16-bit color.
4. Select Launch Redirection.
5. Respond to all prompts.
6. At the login prompt for the JavaRconsole window, type `root`, and then type the root password.
7. In the JavaRconsole window, select Devices.
8. Attach to the LSI firmware update image `.iso` file. At the pop-up screen, select the CD-ROM Image.
A check mark is displayed on the drop-down menu selection.
9. Select Remote Control -> Remote Power Control in the ILOM GUI.
10. Select Power -> Action -> Reset.
11. 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.
12. In the JavaRConsole window select Devices -> CDROM Image to detach the LSI firmware update `.iso` file.
13. Select JavaRConsole Keyboard -> Control Alt Delete.
14. 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 website 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).

2. Insert the bootable CD and reboot the server.
The firmware is upgraded.
3. Reboot the system.

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 [“Component Versions By Release”](#) on page 7.

Verifying the ILOM Firmware Version

There are three alternate procedures in this section that you can use:

- [“Verifying the Firmware Version Using the CLI Through the Management Ethernet Port”](#) on page 24
- [“Verifying the Firmware Version Using the CLI Through the Serial Port”](#) on page 25
- [“Verifying the Firmware Version Using the Web GUI”](#) on page 25

▼ Verifying the Firmware Version Using the CLI Through the Management Ethernet Port

1. Connect an RJ-45 Ethernet cable to the NET MGT Ethernet port on the back panel.

2. Establish an SSH connection using the following command, then enter the default password (*changeme*) when you are prompted:

```
# ssh -l root sp_ip_address
```

```
changeme
```

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

```
->
```

3. Type the `version` command, which returns output similar to the following:

```
-> version  
SP firmware version: 1.0  
SP firmware build number: 10644  
SP firmware date: Tue Sep 13 12:50:37 PDT 2006  
SP filesystem version: 0.1.13
```

The ILOM firmware build is listed above.

▼ Verifying 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:**
 - 8N1: 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 serial cable from the RJ-45 SER MGT port on your server's back panel to your terminal device or PC.**

3. **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.

```
SUNSP0003BA84D777 login:
```

In this example login prompt, *0003BA84D777* is the Ethernet MAC address of the SP. This will be different for each server.

4. **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:

```
->
```

5. **Type the `version` command, which returns output similar to the following:**

```
-> version
```

```
SP firmware version: 1.0
```

```
SP firmware build number: 10644
```

```
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.

▼ Verifying the Firmware Version Using the Web GUI

1. **Connect to the ILOM Web GUI by typing the IP address of the server's SP into your browser's address 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 presented is the System Information -> Versions page, which includes the Build Number.

Recovering from a Failed Flash Update

Several issues have been identified with the firmware update, which could result in a failed or incomplete firmware update. This section describes how to recover from a failed ILOM firmware update.

Use the following procedure to recover from a failed firmware update.

Note – 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.

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 hexadecimal unless otherwise noted.

▼ Recovery Steps

1. Determine whether 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.

Refer to the *Sun Fire X4600 M2 Server Installation Guide* for details.

- If no screen output is displayed, stop here. The GRASP board must be replaced. Refer to the *Sun Fire X4600 and Sun Fire X4600 M2 Servers 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 need to try the process of applying power to the system and entering **xyzzy** several times.

3. Disable automatic reboot.

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

```
set bootretry -1
```

4. 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 IP address for the ILOM SP and the TFTP server IP address by setting the `ethaddr` and `serverip` U-Boot variables.

```
set ipaddr n.n.n.n  
set serverip n.n.n.n
```

5. Use the U-Boot `tftp` command to download the ILOM firmware image.

```
tftp 100000 ilom.firmware.ima
```

where `ilom.firmware.ima` is the image file, for example, `ilom.x4100.1.1.1-r15632.ima`.

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

Be sure that the complete flash image is actually downloaded successfully before proceeding. You should see a message similar to:

```
=> tftp 100000 r10644.rom.ima
Using FCC1 ETHERNET device
TFTP from server 10.6.154.8; our IP address is 10.6.154.99
Filename 'r10644.rom.ima'.
Load address: 0x100000
Loading:
#####
#####
#####
#####
#####
done
Bytes transferred = 13107200 (c80000 hex)
```

6. Confirm that the download succeeded:

a. Confirm that the tftp command output ends with

Bytes transferred = *ByteCount*

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

```
=> tftp 100000 r15028.rom.ima
Using FCC1 ETHERNET device
TFTP from server 10.6.154.8; our IP address is 10.6.154.99
Filename ?r10644.rom.ima?.
Load address: 0x100000
Loading:
#####
#####
#####
#####
#####
done
Bytes transferred = 13107200 (c80000 hex)
```

7. 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. Enter the following commands:

```
=> erase ff200000 ffffffff
```

```
=> erase fe000000 fefffffff
```

A series of dots will appear, indicating the progress of the erasure.

b. If a failure occurs, retry the erase command repeatedly until it succeeds.

Note – If a persistent failure occurs, the service processor is not flash-upgradable, and must be replaced. Refer to the *Sun Fire X4600 and Sun Fire X4600 M2 Server Service Manual* 819-4342, for details on replacing the GRASP board.

8. Program the new ILOM firmware image:

a. Use the U-Boot `cp.b` command to copy the new ILOM firmware image from the download location at 100000 to ff380000, until end address ffffffff.

For example:

```
=> cp.b 100000 ff380000 ffffffff
```

```
Copy to Flash
```

```
.....  
.....  
.....done
```

b. 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 : 64 KB
```

```
Sector Count : 512
```

```
FMH Located at 0xff380000 of Size 0x00020000
```

```
Name : grasp
```

```
Ver : 1.0
```

```
Type : 0x0002
```

```
Flags : 0x0000
```

```
Size : 0x00000061
```

```
Location: 0xff380040
```

```
LoadAddr: 0xffffffff
```

```
Checksum: Not Computed
-----
FMH Located at 0xff3a0000 of Size 0x00120000
Name : sysbios
Ver : 1.31
Type : 0x0000
Flags : 0x0100
Size : 0x00100000
Location: 0xff3c0000
Flash Upgrading Your Server to Release 1.1 13
LoadAddr: 0xffffffff
Checksum: Valid
-----
FMH Located at 0xff4c0000 of Size 0x000c0000
Name : osimage
Ver : 1.0
Type : 0x0006
Flags : 0x0119
Size : 0x000ac9c8
Location: 0xff4c0040
LoadAddr: 0x00c00000
Checksum: Valid
...1
```

Note – If the command output does not show anything, you may have entered an incorrect memory address. Repeat the `tftp`, `erase` and `cp.b` commands until the image is properly copied. Note that you must erase the existing firmware image before attempting to copy a new image.

9. 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**

10. 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 [“Updating Your Server Firmware” on page 21](#).

Be sure to reset your service processor and BIOS configuration settings as needed, because they might be lost during this recovery.