



Sun Fire™ X4100 M2/X4200 M2 Servers Release Notes for Software Release 1.2

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Preface

This document contains information specifically related to the software release, including relevant component version numbers, the procedure for upgrades, and issues related to upgrades.

Related Documentation

To find related documentation, go to:

http://www.sun.com/products-n-solutions/hardware/docs/Servers/x64_servers/x4100m2/index.html

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.

For all Sun hardware documentation, go to:

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

For Solaris and other software documentation, go to:

<http://docs.sun.com>

Product Updates

For product updates that you can download for the server, please follow the links from 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.

Typographic Conventions

Typeface	Meaning	Examples
AaBbCc123	The names of commands, files, and directories; onscreen computer output	Edit your <code>.login</code> file. Use <code>ls -a</code> to list all files. % You have mail.
AaBbCc123	What you type, when contrasted with onscreen computer output	% su Password:
<i>AaBbCc123</i>	Book titles, new words or terms, words to be emphasized. Replace command-line variables with real names or values.	Read Chapter 6 in the <i>User's Guide</i> . These are called <i>class</i> options. You <i>must</i> be superuser to do this. To delete a file, type <code>rm filename</code> .

Note – When viewing HTML documents, the settings on your browser might differ from the typeface settings described in the table.

Contacting Sun Technical Support

If you have technical questions about the 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 X4100 M2/X4200 M2 Servers Release Notes for Software Release 1.2, 820-0827-13

Upgrading Your Software to Software Release 1.2

This chapter describes how to upgrade your Sun Fire X4100 M2 or Sun Fire X4200 M2 server to software release 1.2. It has the following sections:

- [“New Features” on page 1](#)
- [“Component Versions By Release” on page 2](#)
- [“Software Release Special Considerations” on page 4](#)
- [“Updating Your Server” on page 5](#)
- [“Recovering from a Failed Flash Update” on page 13](#)
- [“Downgrading to a Previous ILOM Release” on page 18](#)

New Features

This software release contains the following enhancements:

- New OS support for the following:
 - RHEL5

Note – Some RHEL5 drivers are not available. For details, see [page 4](#).

- Windows 2003 Server SP2 (32- and 64-bit)
- Existing OS support for the following:
 - Solaris 10 11/06
 - RHEL4_U4 (32- and 64-bit)
 - RHEL3_U8 (64-bit only)
 - SLES10 (64-bit only)

- SLES9_SP3 (64-bit only)
- Windows 2003 Server SP1 (32- and 64-bit)
- VMware ESX 3.0.1
- PXE support for supported Linux operating systems
- New downloadable image containing PXE support for Linux operating systems, software tools, and drivers
- New MegaRAID Storage Manager – Integrated RAID utility with a SAS-IR SNMP agent for Linux and Windows. For details, refer to *X64 Servers Utilities Reference Manual*, 820-1120.
- New support for Sun Installation Assistant (SIA) on Linux and Windows. The SIA CD prepares the system and helps you to install a supported Linux or Windows OS on your server. It installs a set of Sun-supported drivers that have been tested for quality assurance.
- Tools and Drivers CD now available with:
 - Linux: HERD utility, MSM IR and LSI SNMP Agent; PXE files for RHEL5
 - Windows: WinPE cfggen utility, DOS suncfg utility, Latest release of ATI Rage driver contains hibernation bug fix

For a current list of supported operating systems for these servers, refer to the following web sites:

<http://www.sun.com/servers/entry/x4100/os.jsp>

<http://www.sun.com/servers/entry/x4200/os.jsp>

Component Versions By Release

This section lists the component versions for the various releases of the Sun Fire X4100 M2/X4200 M2 servers.

TABLE 1 Server Release 1.2 Component Versions

Component Name	Version and Build	
	X4100 M2 Server Version	X4200 M2 Server Versions
ILOM	Version 1.1.8	Version 1.1.8
BIOS	Version 39 (0ABJX039)	Version 39 (0ABJX039)
LSI Firmware	Version 1.16.40, Build 6.14.04	Version 1.16.40, Build 6.14.04
Motherboard	501-7668-0X	501-7590-0X

TABLE 2 Server Release 1.1 Component Versions

Component Name	Version and Build	
	X4100 M2 Server Version	X4200 M2 Server Versions
ILOM	Version 1.1.1, Build 16057	Version 1.1.1, Build 16057
BIOS	Version 34	Version 34
LSI Firmware	Version 1.16, Build 6.10.00b	Version 1.16, Build 6.10.00b
Motherboard	501-7668-0X	501-7590-0X

TABLE 3 Server Release 1.0 and 1.0.1 Component Versions

Component Name	Version and Build	
	X4100 M2 Server Version	X4200 M2 Server Versions
ILOM	Version 1.0.7, Build 13141	Version 1.0.7, Build 13141
BIOS	Version 24	Version 24
LSI Firmware	Version 1.16, Build 6.06.06	Version 1.16, Build 6.06.06

Software Release Special Considerations

Caution – Solaris Users: Refer to Product Notes for critical issues 6556867 and 6490454.

RHEL5: Some Drivers Not Available (6558529)

Drivers for Red Hat Enterprise Linux 5 are not available for the following Sun option cards:

- Sun Multithreaded 10-GbE Networking Card (X1027A-z)
- Sun Dual Port 4x IB Host Channel Adapter PCI-E (X1236A-Z)
- Sun 10-GbE, 133-MHz PCI-X (X5544A-4)
- Sun Dual Port 4x IB Host Channel Adapter PCI-X (X1333A-4)

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

After flashing a new image, you may not be able to log in to the WebGUI. This can happen if the Web GUI is open during the flash upgrade. Therefore, it is best that the GUI and all other functions related to the firmware be shut down before a firmware upgrade is performed.

Workaround

Clear the browser's cache and cookies.

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

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.

Flash Downgrade Might Require Special Steps

If you downgrade the flash, you might be required to repeat the process. If this becomes necessary, a message will prompt you. This does not indicate a problem; simply repeat the procedure as instructed and it will succeed.

If the flash downgrade using the 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 does not power off the host unless a new BIOS is required. To force the updating of all components (including the BIOS) and therefore power off the host, use the CLI load command with the `-f` option, as shown below:

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

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

Fixed: ILOM Upgrade Might Fail BIOS Flash (6499287)

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

This issue applies only to up to ILOM 1.1.1.

Workaround

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

Updating Your Server

This chapter describes how to update your server to Release 1.2 from earlier releases. See the following sections:

- [“Updating Your Server Firmware” on page 6](#)
- [“Methods for Updating the LSI Firmware” on page 7](#)
- [“More on Updating the LSI Firmware” on page 9](#)
- [“Verifying the Firmware Version” on page 9](#)
- [“Locating ILOM SP Addresses” on page 11](#)
- [“How to Reset the SP” on page 12](#)



Caution – Be sure that you apply only M2 updates to your M2 server. If your server is not an M2 server, be sure to get the correct downloads and documentation. For details on how to tell whether you have an M2 server or an earlier Sun Fire X4100/X4200 family server, refer to *Methods to Differentiate Sun Fire X4100 and X4200 from Sun Fire X4100 M2 and X4200 M2 Servers*, 820-0373.

Updating Your Server Firmware

The Integrated Lights Out Manager (ILOM) firmware (FW) and BIOS are tightly coupled and are always updated together. This release update contains new ILOM FW and BIOS updates, plus a number of optional enhancements to software shipped with earlier releases.

There are two major steps to updating your server firmware:

- [“Updating the BIOS and ILOM Firmware” on page 7](#)
- [“Methods for Updating the LSI Firmware” on page 7](#)

Note – You can perform the BIOS/ILOM and LSI firmware updates in any order.

Note – The LSI firmware version and the BIOS version must be from the same software release.

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 Firmware Version](#)” on page 9.
 2. Review the section “[Software Release Special Considerations](#)” on page 4 for known issues and considerations regarding the flash update.
 3. Download the latest flash image from the following location:
<http://www.sun.com/servers/entry/x4100/downloads.jsp>
 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-based GUI operations, you might need to use N1 System Manager or the ILOM CLI `load` command to update the ILOM firmware. For details, refer to the N1 System Manager documentation or the *Integrated Lights-Out Manager Administration Guide*.

From the ILOM CLI, use the following command:

```
load -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.x4100.1.1.1-r15632.ima*.

Online documentation for Sun N1 System Manager can be found at:

<http://docs.sun.com/coll/1283.2>

For more details on performing the update, see “[Methods for Updating the LSI Firmware](#)” on page 7.

5. If you have any problems with the flash update, refer to the section “[Recovering from a Failed Flash Update](#)” on page 13.

Methods for Updating the LSI Firmware

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

Remote Method

1. **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 up, 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, but that 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 FW 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 2.

Verifying the 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 9
- [“Verifying the Firmware Version Using the CLI Through the Serial Port”](#) on page 10
- [“Verifying the Firmware Version Using the Web GUI”](#) on page 11

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.

Locating ILOM SP Addresses

There are several methods you can use to locate ILOM SPs and their IP addresses.

- Sun N1 System Manager. Sun N1 System Manager provides the capability to display the ILOM SP addresses of managed systems with the `n1sh` command.
For example, the following command can be used to create a list of Sun Fire X4100/X4200 servers:
- DHCP server. See "ILOM Initial Setup" in the *Integrated Lights Out Manager (ILOM) Administration 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:

```
n1sh show server | grep 'X4[12]00'
```

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

How to Reset the SP

To reset the ILOM SP:

- 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_address bmc reset cold
```

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

For more on this topic, refer to the *Integrated Lights Out Manager (ILOM) Administration Guide for ILOM 1.1.1*.

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 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.

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 X4100/X4100 M2 and X4200/X4200 M2 Servers Installation Guide*, 819-1155, for details.

- If no screen output is displayed, stop here. The GRASP board must be replaced. Refer to the *Sun Fire X4100/X4100 M2 and X4200/X4200 M2 Servers Service Manual*, 819-1157, 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:

```
=> 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
.....
```

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. Erase the exiting flash image using the following commands:

```
erase ff380000 ffffffff
erase 0xfe200000 0xff37ffff
```

You will a series of dots showing progress, followed by a confirmation:

```
.....
.....Erased 200/200 sectors
```

- 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-updatable, and must be replaced. Refer to the *Sun Fire X4100/X4100 M2 and X4200/X4200 M2 Servers Service Manual*, 819-1157, 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
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

...

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 update process, using the ILOM GUI or CLI procedures as described in [“Updating Your Server Firmware” on page 6](#) and the refer to the *Integrated Lights Out Manager (ILOM) Administration Guide for ILOM*.

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

Downgrading to a Previous ILOM Release

The ILOM flash update in this release has a very new and different structure that is designed to be more reliable. However, should you use this update and later find that you need to downgrade to a previous release, you may need perform the flash downgrade twice to reformat the flash layout to the old format. If so, a message will prompt you. This is not a failure. Just repeat the procedure as instructed and the process will succeed.