Sun Fire™ X4600 M2 Server Release Notes For Software Release 1.0.1

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Preface

This document contains procedures and special information for upgrading your Sun Fire X4600 M2 server to the Release 1.0.1 software upgrade bundle.

Related Documentation

For a description of the document set for the Sun Fire X4600 M2 server, see the *Where To Find Documentation* sheet that is packed with your system and also posted at the product's documentation site. See the following URL:

http://www.sun.com/products-n-solutions/hardware/docs/Servers/x64_servers/x4600m2/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, see the following URL:

http://www.sun.com/documentation

For Solaris and other software documentation, see the following URL:

http://docs.sun.com

Product Updates

For product updates that you can download for the Sun Fire X4600 M2 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.

Contacting Sun Technical Support

If you have technical questions about the Sun Fire X4600 M2 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

Flash Upgrading Your Server to Release 1.0.1

This chapter contains procedures and information for upgrading Sun Fire™ X4600 M2 server to Release 1.0.1 from earlier releases. See the following sections:

- "What Is New in Release 1.0.1" on page 2
- "Summary of ILOM SP/BIOS Flash Upgrade Steps" on page 3
- "How to Determine The Firmware Version of Your Server" on page 5
- "Special Considerations Regarding the ILOM Firmware 1.0.6 Update" on page 9
- "Recovering From a Failed Flash Update" on page 11
- "Upgrading LSI Firmware and BIOS" on page 16
- "Component Versions By Release" on page 17

What Is New in Release 1.0.1

The Integrated Lights Out Manager (ILOM) firmware (FW) and BIOS are tightly coupled and are always updated together. The Release 1.0.1 Upgrade software bundle contains new ILOM FW and BIOS upgrades, plus a number of optional enhancements to the software that was shipped with earlier releases:

- ILOM FW version 1.0.6, which includes service processor (SP) build 14023 and new BIOS 36
- New BIOS support for VMware® ESX Server 3.0.1
- New support for Red Hat Enterprise Linux 4 U4 32-bit
- New Sun Installation Assistant CD image, which includes new support:
  - RHEL4U4 32-bit installation support
  - SLES9 SP3 64-bit installation support
  - Option card drivers for RHEL4 U4 32-bit are included

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

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

The following section shows a summary of the steps you should perform to update your server from Release 1.0 to Release 1.0.1.

Summary of ILOM SP/BIOS Flash Upgrade Steps

1. Determine which version of the ILOM firmware that you currently have. See "How to Determine The Firmware Version of Your Server" on page 5.

Release Version	Firmware version	Firmware Build
Release 1.0.1	FW 1.0.6	14023
Release 1.0	FW 1.0.6	14023

2. Review the section "Special Considerations Regarding the ILOM Firmware 1.0.6 Update" on page 9 for known issues and considerations regarding the flash upgrade.

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

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

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

   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. See the N1 System Manager documentation or the *Integrated Lights-Out Manager Administration Guide*, 819-1160 for details of firmware flashing. For example:

   From the ILOM CLI, use the following command

   `load -source tftp://`*<tftpserver>***`/`***<firmware.ima>*

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

   `http://docs.sun.com/coll/1283.2`

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.

For instructions on performing a flash upgrade, see the section, "How to Upgrade the ILOM Firmware" in the *Integrated Lights Out Manager (ILOM) Administration Guide*, 819-1160. You can find the document at this URL:

`http://www.sun.com/products-n-solutions/hardware/docs/Servers/x64_servers/x4600m2/index.html`

5. Optional step: 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 defaultpassword, 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`**

6. Optional step: If you have any problems with the flash upgrade, refer to the section"Recovering From a Failed Flash Update" on page 11.

How to Determine The Firmware Version of Your Server

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

- "Determining the Firmware Version Using the CLI Through the Management Ethernet Port" on page 5
- "Determining the Firmware Version Using the CLI Through the Serial Port" on page 6
- "Determining the Firmware Version Using the Web GUI" on page 7

Determining 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 will return output similar to the following:**

   ```
   -> version
   SP firmware version: 1.0.6
   SP firmware build number: 14023
   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 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.

   `SUNSP`*`0003BA84D777`* `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 will return output similar to the following:**

   ```
   -> version
   SP firmware version: 1.0.6
   SP firmware build number: 14023
   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 GUI

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

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 X4600 servers:

  `n1sh show server | grep 'X4600'`

- DHCP server. See "ILOM Initial Setup" in the Integrated Lights Out Manager Administration Guide (819-1160) 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, there are several methods you can use (for complete details, see the *Integrated Lights-Out Manager Administration Guide*, 819-1160):

- 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_ipaddress*> **`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.

Special Considerations Regarding the ILOM Firmware 1.0.6 Update

This section describes considerations that might affect the firmware upgrade.

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.

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 defaultpassword, 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**

Recovering From a Failed Flash Update

This section contains instructions for recovering from a failed 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.

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 Fire X4600 Server Installation Guide*, 819-4341 for details.

   - If no screen output is displayed, stop here. The GRASP board must be replaced. Refer to the *Sun Fire X4600 Server Service Manual*, 819-4342 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` *<firmware image>*

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 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)
```

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 with the `erase ff380000 ffffffff` **command.**

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

```
=> erase ff380000 ffffffff
.....................................................................
.............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-upgradable, and must be replaced. Refer to the *Sun Fire X4600 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
```

```
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 upgrade process, using the ILOM GUI or CLI procedures as described in "What Is New in Release 1.0.1" on page 2 and the *Integrated Lights-Out Manager Administration Guide*, 819-1160.

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

Upgrading LSI Firmware and BIOS

Note – There is no update to the LSI firmware and BIOS for this release.

To update the LSI firmware and BIOS, use the following steps:

1. **Download the** `FW110_B60606A.iso` **image file and burn it to a CD.**
2. **Boot from the CD you just created, then select option 1 from the list that is displayed:**

```
Press 1 to update
Press 2 to exit to DOS
```

Component Versions By Release

The service processor (SP) and BIOS software and the LSI firmware versions might be updated in each new release.

TABLE 1 lists the component versions for Release 1.0.1 of the Sun Fire X4600 M2 server.

TABLE 1 Server Release 1.0.1 Component Versions

Component Name	Sun Fire X4600 M2 Server Version
ILOM FW 1.0.6	SP build 14023
BIOS	0ABIT036
LSI Firmware	fw1.10.00-bios6.06.06

TABLE 2 lists the component versions for the initial release (Release 1.0) of the Sun Fire X4600 M2 server.

TABLE 2 Server Release 1.0 Component Versions

Component Name	Sun Fire X4600 M2 Server Version
ILOM FW 1.0.6	SP build 14023
BIOS	0ABIT035
LSI Firmware	fw1.10.00-bios6.06.06

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