



ELOM-to-ILOM Migration User's Guide

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www.sun.com

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Preface

The *ELOM-to-ILOM Migration User's Guide* provides information and detailed procedures for converting Sun Fire X4150 and Sun Fire X4450 servers and Sun Blade X6250 and Sun Blade X6450 server modules from an Embedded Lights Out Manager (ELOM)-based system to an Integrated Lights Out Manager (ILOM)-based system. This document also provides information and procedures for migrating these servers from an ILOM-based system to an ELOM-based system. This document is written for technicians, system administrators, authorized service providers (ASPs), and users who have experience upgrading server hardware, software, and firmware.

Typographic Conventions

Typeface	Meaning	Examples
AaBbCc123	The names of commands, files, and directories; on-screen 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 on-screen 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 – Characters display differently depending on browser settings. If characters do not display correctly, change the character encoding in your browser to Unicode UTF-8.

Related Documentation

For a description of the document set for your server, see the *Where To Find Documentation* sheet that is packed with your server and also posted at the product's documentation site.

- Navigate to the x64 server documentation at:
<http://docs.sun.com/app/docs/prod/server.x64#hic>
- Navigate to the blade server documentation at:
<http://docs.sun.com/app/docs/prod/blade.srvr#hic>

Translated versions of some of these documents are also available at <http://docs.sun.com>. Select a language from the drop-down list, and navigate to your server's document collection using the High-End Servers and x64 Server or Blade Server category links. Available translations might include Simplified Chinese, Traditional Chinese, French, Japanese, and Korean.

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

Documentation, Support, and Training

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ELOM-to-ILOM Migration User's Guide, 820-4930-12.

Overview and Preparation

This chapter provides an overview of the ELOM-to-ILOM migration process and details the preparatory steps that you need to perform for a successful upgrade of your Sun Fire X4150 and X4450 servers and Sun Blade X6250 and X6450 server modules. While the migration procedures are similar for all four servers, some differences exist, particularly between the Sun Fire and Sun Blade server groups. The differences are noted, and when necessary, the procedures are separated.

The information and procedures in this chapter pertain to both Sun Fire X4150 and X4450 servers and Sun Blade X6250 and X6450 server modules.

- [“FAQs About the ELOM-to-ILOM Migration”](#) on page 2
- [“ILOM Features List”](#) on page 3
- [“Choosing Not to Migrate From ELOM to ILOM”](#) on page 5
- [“Understanding the ELOM-to-ILOM Migration Process”](#) on page 5
- [“Preparing for the Migration Process”](#) on page 6

FAQs About the ELOM-to-ILOM Migration

The following is a list of questions about the ELOM-to-ILOM migration.

Question: Why should I migrate my servers to ILOM?

Answer: Sun has consolidated and focused its resources on supplying a single server and server module management utility that best meets the needs of our customers. Sun is committed to supporting and developing ILOM as the server management utility of choice.

Question: Does this mean Sun no longer supports ELOM?

Answer: Sun continues to support ELOM. However, Sun no longer provides updates to ELOM. Additionally, future updates to your server or server module hardware might depend on ILOM compatibility for functionality.

Question: Does upgrading to ILOM involve changing my server's hardware?

Answer: Upgrading to ILOM is a firmware-only update and does not require changing or modifying your server's hardware.

Question: When should I migrate my system?

Answer: Sun recommends that you migrate your servers to ILOM as soon as possible.

Question: Can I upgrade multiple systems using scripts?

Answer: Yes. See ["Migrating to ILOM Using the Command-Line Interface \(CLI\) and Upgrade Scripts"](#) on page 15.

Question: What is the minimum version of ELOM that I should have installed before beginning the migration process?

It is recommended that you upgrade your server or server module to the latest available version of ELOM before beginning this process.

Question: To which version of ILOM will I migrate my servers?

Answer: You need to upgrade your servers to a temporary (transitional) version of ELOM first and then migrate to ILOM. When the migration process is finished, your server or server module will have ILOM version 2.0.3.6.

Question: Can I use the transitional version of ELOM without migrating to ILOM?

Answer: No. The transitional ELOM version is not supported for normal use. It should only be used when migrating to ILOM.

Question: How to do I migrate my servers from ELOM to ILOM?

Answer: See [“The Migration Process”](#) on page 6.

Question: What if I do not want to migrate to ILOM right now?

Answer: See [“Choosing Not to Migrate From ELOM to ILOM”](#) on page 5.

ILOM Features List

ILOM Upgrade Features

ILOM includes the following features that ELOM does not:

-
- More consistency with other x64 and SPARC servers
 - SNMP trap support with the SUN-HW-TRAP_MIB
 - User authentication using LDAP and RADIUS
 - Single sign-on from the CMM to the SP (Blade servers only)
 - Improved drill-down from the CMM to the SP (Blade servers only)
 - Auditing of configuration changes
-

ILOM Features

ILOM Features

- IPMI v2.0
 - SNMP V1, V2c, V3 (Fully compliant SNMP Trap export)
 - DMTF style CLI
 - SSH v2.0
 - Web GUI or browser user Interface (BUI)
 - DNS support*
 - Remote hardware monitoring:
 - System status and event logs
 - CRUs and FRUs (PSU, fans, disks, CPU, memory, motherboards)
 - Environmentals (temperature)
 - Sensors (voltage, current, power)
 - Indicators (LEDs)
 - Alerting:
 - SNMP traps, IPMI PETs, email, and email and SMTP alerts
 - Remote syslog
 - Hardware FRU inventory and presence:
 - FRU presence and status
 - Part numbers, version numbers, and serial numbers
 - NIC card MAC addresses
 - Remote access:
 - Remote storage
 - System serial console redirection through serial port and LAN
 - Remote KVM
 - Redirect the OS graphical console to a remote client browser
 - Remote storage
 - Connect a remote CD/DVD to the system
 - System power control and monitoring:
 - Power on, power off, power reset, voltage/current/power
 - Auditing and managing of ILOM user accounts
 - Authentication:
 - LDAP, RADIUS, ADS (2.0)
 - Error/fault management
-

ILOM Features (Continued)

- Monitor system BIOS/POST and sensors
 - Chassis Management Module (CMM) features (server modules only):
 - Drill down
 - Single sign-on
 - Physical view
 - NEM proxy access and hot plug
-

* Planned availability in ILOM 3.0

For more information about ILOM features and capabilities, go to:

<http://www.sun.com/systemmanagement/ilom.jsp>

Choosing Not to Migrate From ELOM to ILOM

Sun recommends that you migrate your servers to ILOM as soon as possible. However, you might find it more convenient to downgrade your ILOM-based servers to ELOM and perform the ELOM-to-ILOM migration at a later date. For information about downgrading a server or server module from ILOM to ELOM, see [Chapter 6](#).

Understanding the ELOM-to-ILOM Migration Process

This section provides an overview of the ELOM-to-ILOM migration process and details the steps that you need to perform for a successful upgrade of your server.

Upgrading from ELOM to ILOM is very similar to upgrading to a newer version of firmware. You can use the same interfaces, and the process is functionally the same. For example, you can use the web GUI or the CLI to upgrade your servers using a combined firmware image file that upgrades both the BIOS and service processor (SP) at the same time. Additionally, if you would like to upgrade multiple servers, you can use the CLI with scripting languages to create scripts that will perform the upgrade.

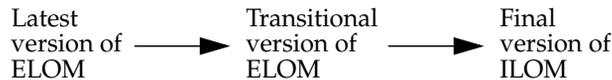
When upgrading from ELOM to ILOM, you can use the following methods:

- Web GUI
- CLI
- CLI and upgrade scripts

The Migration Process

The migration process requires that you perform *at least* two upgrades. First, you must upgrade your server from the latest version (recommended) of ELOM to a temporary or *transitional* version of ELOM. Then you must upgrade from the transitional version of ELOM to the final version of ILOM. [FIGURE 1](#) shows the basic migration process.

FIGURE 1 The Basic Migration Process



Note – The transitional version of ELOM is not supported for normal system management. The transitional version of ELOM should only be used in the process of migrating to ILOM.

Preparing for the Migration Process

You need to perform several preparatory steps *before* you upgrade your servers to the transitional version of ELOM, including reviewing the Product Notes, accessing the BIOS Setup Utility to record custom settings, and downloading the necessary firmware files. The [Migration Task Table](#) lists all the steps, tasks, and relevant sections.



Caution – The procedures in this document require multiple power cycles, resulting in SP reboots. The SP might lose its Gateway address after a power cycle. Before starting the migration process power cycle the server or server module and verify that your SP's Gateway address is retained. If the address is not retained, you must set the Gateway address using the CLI after each power cycle. For more information, see the *Product Notes* for your server.

Migration Task Table

The following table lists the steps and relevant sections and procedures:

Step	Task	Section or Procedure
1.	Review the <i>Product Notes</i> and ELOM and ILOM documentation for your server.	“Reviewing Product Notes and ELOM and ILOM Documentation” on page 8
2.	Access the BIOS and record any customized settings.	“Accessing the BIOS and Recording Customized Settings” on page 9
3.	Obtain the IP Gateway Address	“Recording the Gateway IP Address” on page 10
4.	Download and copy the firmware files for your server.	“Downloading and Copying the Firmware Upgrade Files for Your Server” on page 11
5.	Retain configuration settings.	“Retaining Configuration Settings” on page 14
6.	Begin the migration process: <ul style="list-style-type: none">• Upgrade to the transitional version of ELOM using the web GUI or the CLI. <p>–or–</p> <ul style="list-style-type: none">• Use CLI and upgrade scripts for the migration process.	Chapter 2 “Migrating to ILOM Using the Command-Line Interface (CLI) and Upgrade Scripts” on page 15
7.	Migrate from ELOM to ILOM.	Chapter 3
8.	If necessary, recover from a failed upgrade: <ul style="list-style-type: none">• REcover Sun Fire X4150 and X4450 servers• Recover Sun Blade X6250 and X6450 server modules	Chapter 4 Chapter 5

Reviewing Product Notes and ELOM and ILOM Documentation

This section describes how to access your server's documentation collection so that you can review the *Product Notes* and obtain the latest version of ELOM and ILOM documents. The *Product Notes* document contains the most up-to-date information about your server, including Tools and Drivers CD version information and issues related to hardware, software, the BIOS, and the SP.

Additionally, ELOM and ILOM documentation is available with your server's document collection. Because of the differences between the versions of ELOM, it is recommended that you use your server's *Embedded Lights Out Manager Administration Guide* as a reference when performing the steps in the upcoming procedures.

Use the following procedure to access the *Product Notes* and determine:

- The version of the Tools and Drivers CD that contains the transitional ELOM (SP) version
- Additional server-specific ELOM-to-ILOM migration requirements
- Any ILOM-specific requirements or information for your server

▼ To Review Product Notes and ELOM and ILOM Documentation

1. Open your browser and go to one of the following:

Server	Online Document Collection
Sun Fire X4150	http://docs.sun.com/app/docs/prod/sf.x4150#hic
Sun Fire X4450	http://docs.sun.com/app/docs/prod/sf.x4450#hic
Sun Blade X6250	http://docs.sun.com/app/docs/prod/blade.x6250#hic
Sun Blade X6450	http://docs.sun.com/app/docs/prod/blade.x6450#hic

2. Click to expand the documentation collection for your server or server module.

3. Choose to view or download the *Product Notes*.

4. Review the document for Tools and Drivers CD version information, ELOM-to-ILOM migration-related information, and ILOM-specific information and issues.

5. Download the ELOM and ILOM documentation for your server.

The web GUI screens and CLI commands and namespaces differ between versions of ELOM. Therefore, the commands and references in the procedures in this document might not be the same for your server. Use the *Embedded Lights Out Manager Administration Guide* for your server or server module as a reference when performing the steps in the upcoming procedures.

Accessing the BIOS and Recording Customized Settings

The migration process does not preserve the BIOS settings. If you customized (changed) the BIOS settings from the default value, you might need to access the BIOS Setup Utility, review the settings, and, if necessary, record these values so that you can enter them again at the end of the migration process.

Before You Begin

You need the following:

- A serial terminal or a computer running terminal emulation software
- A method for recording custom settings

▼ To Access the BIOS and Record Customized Settings

1. Set up your server or server module to respond to POST and boot messages.

Use the serial terminal or computer running terminal-emulation software. For information about how to set up your server or server module to respond to POST and boot messages, using a keyboard, video, and mouse, see the *Installation Guide* or the *Embedded Lights Out Manager Administration Guide* for your server.

2. Reboot the server and watch the screen for the BIOS prompt.

A prompt appears requesting you to press F2 to enter the BIOS Setup Utility.

3. When prompted, press F2 to enter the BIOS Setup Utility.

The BIOS Setup Utility main screen appears.

4. Use the arrow keys to navigate the BIOS Setup Utility menus and view the BIOS settings.

For a description of the BIOS screens, see the *Service Manual*.

5. Step through each menu and record the customized (non-default) server or site-specific settings.
6. To exit the BIOS Setup Utility press the Esc key (or the F10 key).
The server boots.

Recording the Gateway IP Address

The procedures in this section require SP reboots. After a reboot, the SP might lose its Gateway address. Before starting the migration process record the Gateway address, and power cycle the server or server module and verify that your SP Gateway address is retained. If the address is not retained, you need set the Gateway address using the CLI after each power cycle.

▼ To Record the Gateway IP Address Using the Web GUI

1. Start your browser, and type the IP address of the server's SP:

http://xxx.xxx.xxx.xxx

where xxx.xxx.xxx.xxx is the IP address of the SP.

The ELOM web GUI login screen appears.

2. Log in as root or as an account with administrator privileges.

The ELOM web GUI main screen appears.

3. Click the Configuration tab.

The Configuration submenu screen appears.

4. Click the Network tab and record the Gateway IP address in the table below:

Gateway IP address=

5. To exit the ELOM web GUI, click log out.

▼ To Record the Gateway IP Address Using the CLI

1. Log in to the CLI.

For CLI access options and login instructions, see the *Embedded Lights Out Manager Administration Guide* for your server.

The CLI prompt appears:

```
->
```

Note – The CLI commands, syntax, and namespaces in this section might be different from the commands, syntax, and namespaces used for your server; see the *Embedded Lights Out Manager Administration Guide* for your server or server module for the appropriate commands, syntax, and namespaces.

2. Navigate to the network directory, and enter the `show` command. For example:

```
-> cd /SP/network
```

```
-> show
```

The network settings appear.

3. Record the Gateway IP address in the table below.

Gateway IP address=

4. To exit the CLI, use the `exit` command:

```
-> exit
```

Downloading and Copying the Firmware Upgrade Files for Your Server

To migrate your servers to ILOM, you need to download and copy the necessary firmware files. The files are available online at the product's Sun download site. You can download the appropriate Tools and Drivers CD ISO image, or you can download the files as a .zip file.

Note – The instructions in this manual assume that you are working from either the mounted ISO image file or a physical CD.

▼ To Download and Copy the Firmware Upgrade Files for Your Server

1. Start your browser and go to the Sun product page for your server:

Server or Server Module	Product Page URL
Sun Fire X4150	http://www.sun.com/servers/x64/x4150/downloads.jsp
Sun Fire X4450	http://www.sun.com/servers/x64/x4450/downloads.jsp
Sun Blade X6250	http://www.sun.com/servers/blades/downloads.jsp
Sun Blade X6450	http://www.sun.com/servers/blades/downloads.jsp

2. Do one of the following to navigate to the Download link for your server or server module:

- For the Sun Fire X4150 and X4450 servers:
 - a. From the product page, click the Support tab and scroll down to the ELOM-to-ILOM transitional update section.
 - b. Under the Downloads heading, click Latest Drivers and Firmware.

The download page for your server or server module appears.
 - c. To access the relevant files for your server, locate the version listed below and click Download.
 - For the Sun Fire X4150 download Tools and Drivers CD v2.0
 - For the SunFire X4450 download Tools and Drivers CD v2.0.0
 - d. Agree to terms and login to the download page.
 - e. At the download page, do one of the following:
 - Download the Tools and Drivers CD ISO image file, and burn a CD of the file.

–or–
 - Download the `elom_to_ilom.zip` file and extract the files.

Note – The procedures in this manual assume that you are working from a CD or mounted ISO image.

- f. Proceed to [Step 3](#).
 - For the Sun Blade X6250 and the X6450 server modules:

- a. From the downloads list, locate the latest version of the Tools and Drivers CD for your server.

Note – Sun recommends that you always update your server to the latest version of firmware.

- b. Click Download.
- c. Agree to terms and login to the download page.
- d. Download the latest Tools and Drivers CD ISO image file.
- e. Burn a CD of the file.
- f. Proceed to [Step 3](#).

3. Copy the transitional ELOM firmware file from the Tools and Drivers CD (or copy the extracted file) to a device that is accessible to your server:

Tip – If you are using the CLI to perform the upgrade, copy the files to your TFTP server.

The directory structure and file naming convention varies according to the server:

Server or Server Module	Path on Tools and Drivers CD to the Transitional ELOM Firmware File
Sun Fire X4150	\remoteflash\elom_to_ilom\X4150-026_450
Sun Fire X4450	\remoteflash\elom_to_ilom\X4450-450_3B17
Sun Blade X6250	\firmware\elom_to_ilom\Telom_X6250-xxx_xxx.ROM
Sun Blade X6450	\firmware\elom_to_ilom\Telom_X6450-xxx_xxx.ROM

where *xxx_xxx* is the latest version of the transitional ELOM firmware file.

4. Copy the combined ILOM firmware image file from the Tools and Drivers CD (or copy the extracted file) to a device that is accessible to your server:

The combined ILOM firmware image file is a .bin file. The directory structure and file naming convention varies according to the server:

Server	Path on Tools and Drivers CD to the Combined ILOM Firmware Image File
Sun Fire X4150	\remoteflash\elom_to_ilom\X4150-2.0.2.6.bin
Sun Fire X4450	\remoteflash\elom_to_ilom\X4450-2.0.2.6.bin

Server Module

Server	Path on Tools and Drivers CD to the Combined ILOM Firmware Image File
Sun Blade X6250	\firmware\elom_to_ilom\6250ixx.bin
Sun Blade X6450	\firmware\elom_to_ilom\6450ixx.bin

where *xx* is the latest version of the combined ILOM firmware image file.

Retaining Configuration Settings

You can choose to preserve ELOM configuration settings for the ELOM-to-ILOM migration process. If you want to preserve ELOM configuration settings when migrating from ELOM to ILOM, then you *must* select to preserve the settings when upgrading to the transitional version of ELOM, and again when upgrading to ILOM. Otherwise, all ELOM configuration settings are lost. However, because of differences between ELOM and ILOM, some ELOM features are not supported by ILOM, and therefore, not retained.

The following is a list of the *unsupported* configuration settings that are *not* retained during the migration process:

-
- User names and user passwords with *user* or *callback* privilege settings*
 - Active Directory Services (ADS)
 - Power Control PEF actions triggered by a sensor event
 - Host NMI actions triggered by a sensor event
 - PEF filtering by sensor type
 - System event log (SEL)
 - SMTP sender email address

* As a workaround, you can change *user* and *callback* account privileges to either *operator* or *administrator* account privileges. See [“Retaining User Accounts With user or callback Privileges”](#) on page 15

The following is a list of the configuration settings that *are retained* during the migration process:

-
- User names and user passwords with *administrator* privilege settings
 - User names and user passwords with *operator* privilege settings
 - Network settings
 - Hostname
 - PET configuration
 - SMTP configuration
 - Email alert configuration
 - NTP configuration
 - Syslog configuration
 - SNMP agent configuration
 - SNMP communities
 - SNMP v3 users
 - SSH keys
 - SSL certificate
-

Retaining User Accounts With *user* or *callback* Privileges

When migrating to ILOM, ELOM user accounts with *user* and *callback* privilege settings are not retained. If you would like to retain these user accounts, you can change the privilege settings in ELOM to either *operator* or *administrator* before you perform the upgrade. However, changing privilege settings for user accounts might present a security risk.

For more information about how to manage user accounts and upgrade (change) user account privileges, see the *Embedded Lights Out Manager Administration Guide* for your server.

Migrating to ILOM Using the Command-Line Interface (CLI) and Upgrade Scripts

You can use upgrade scripts to perform the migration process. Using scripts enables you to upgrade multiple servers to ILOM consecutively. Upgrade scripts are located on the Tools and Drivers CD:

- For Sun Fire X4150 and Sun Fire X4450 servers, the upgrade script is located in the following directory: `\remoteflash\elom_to_ilom\example\`

The Sun Fire X4150 and X4450 example script is a working script that you can use as a template for performing multiple server upgrades. The script was developed from information in this document. For more information about the example script, see the `readme.txt` file in the same directory.

- For Sun Blade X6250 and Sun Blade X6450 server modules, the upgrade batch file name is: `\firmware\elom_to_ilom\dos\3B14.bat`

Upgrading Your Server or Server Module to the Transitional Version of ELOM

Before you can migrate your server or server module to ILOM, you must first upgrade to the transitional version of ELOM. The transitional ELOM is a *temporary* version that contains the functionality that enables you to perform the migration to ILOM.

Use this chapter to upgrade the Sun Fire X4150, Sun Fire X4450, Sun Blade X6250, and Sun Blade X6450 servers and server modules from the latest version of ELOM to the transitional version of ELOM.



Caution – Do *not* operate the server or server module with the transitional version of ELOM for any period of time beyond the time needed to perform the upgrade.

Before You Begin

You must first:

- Review the *Product Notes* for migration-related information and download ELOM and ILOM documentation. See [“Reviewing Product Notes and ELOM and ILOM Documentation”](#) on page 8.
- Access the BIOS and record the customized settings. See [“Accessing the BIOS and Recording Customized Settings”](#) on page 9.
- Download and copy the firmware files from the download site. See [“Downloading and Copying the Firmware Upgrade Files for Your Server”](#) on page 11.

- Decide whether to retain configuration settings and whether to upgrade user accounts with user and callback privileges (optional). See [“Retaining Configuration Settings”](#) on page 14.
- Review the procedures in this section.
- For a CLI-based upgrade, set up your server or server module to access the CLI. For CLI access options, see the *Embedded Lights Out Manager Administration Guide* for your server.

You have the following options for upgrading to the transitional version of ELOM:

Upgrade Method	See this section or procedure:
Use the ELOM web GUI.	“To Upgrade to the Transitional Version of ELOM Using the Web GUI” on page 18
Use the ELOM CLI.	“To Upgrade to the Transitional Version of ELOM Using the Command-Line Interface (CLI)” on page 20
Use the ELOM CLI and upgrade scripts (Sun Fire X4150 and X4450 only).	“Migrating to ILOM Using the Command-Line Interface (CLI) and Upgrade Scripts” on page 15



Caution – If the media containing the migration software is located on the target system (the system to which the migration is applied), do not use the Remote Keyboard and Virtual Mouse (RKVM) CD or diskette mount feature of the ELOM Remote Control - Redirection facility. You must use a local keyboard and mouse. The mounting functionality will not work during the update.

Alternatively, use the web GUI or the CLI as described later in this document, and perform the firmware update, using the firmware update binaries that are located on a system other than the target system.

▼ To Upgrade to the Transitional Version of ELOM Using the Web GUI

Note – Do *not* operate the server or server module with the transitional version of ELOM for any period of time beyond the time needed to perform the upgrade.

1. Use one of the following steps to perform a *clean shutdown* and place the server or server module in standby power mode.



Caution – Do not power off the server during a BIOS POST (power on system test). Powering off the server during a BIOS POST might corrupt and lock the BIOS chip, rendering the server inoperable. To avoid corrupting and locking the BIOS chip always perform a clean shutdown of the OS. To recover from a corrupt BIOS chip, see the recovery procedures in [Chapter 4](#) and [Chapter 5](#).

- For servers that have an OS installed:
 - a. **Use the OS-specific shutdown procedure to power off the system normally.**
The server powers off to standby power mode.
 - b. **Proceed to [Step 2](#).**
- For servers that do not have an OS installed:
 - a. **Start your browser, and type the IP address of the server's SP:**
http://xxx.xxx.xxx.xxx
where *xxx.xxx.xxx.xxx* is the IP address of the SP.
The ELOM web GUI login screen appears.
 - b. **Log in as root or as an account with administrator privileges.**
The ELOM web GUI main screen appears.
 - c. **Click the Remote Control tab.**
The Remote Control submenu tabs appear.
 - d. **Click the Remote Power Control tab.**
The Remote Power Control submenu screen appears.
 - e. **Select the Power Off radio button and click the Submit (or Save) button.**
The server powers off to standby power mode. Proceed to [Step 4](#).
- 2. **Start your browser, and type the IP address of the server's SP.**
For example:
http://xxx.xxx.xxx.xxx
where *xxx.xxx.xxx.xxx* is the IP address of the SP.
The ELOM web GUI login screen appears.
- 3. **Log in as root or as an account with administrator privileges.**
The ELOM web GUI main screen appears.
- 4. **From the main menu, click the Maintenance tab.**
The Maintenance submenu tabs appear.

5. Click the Firmware Upgrade tab.

The Firmware Upgrade screen appears.

6. Click the Enter Firmware Upgrade Mode button.

7. Locate the firmware upgrade file.

a. Click Browse.

b. Browse for the transitional ELOM firmware file that you copied in Chapter 1 (see “[Downloading and Copying the Firmware Upgrade Files for Your Server](#)” on page 11).

The file name convention varies according to platform:

Server	File Name
Sun Fire X4150	X4150-026_450
Sun Fire X4450	X4450-450_3B17
Sun Blade X6250	Telom_X6250-xxx_xxx.ROM
Sun Blade X6450	Telom_X6450-xxx_xxx.ROM

c. Select the file, and then click Open.

8. Accept the Clear BIOS CMOS default setting, and to start the firmware upgrade, click the Update Firmware button.

The firmware upgrade process updates both the BIOS and SP firmware. After the upgrade is finished, the transitional version of ELOM boots, and the web session is restarted.

9. When the SP reboots, proceed directly to [Chapter 3](#).

▼ To Upgrade to the Transitional Version of ELOM Using the Command-Line Interface (CLI)

Note – Do not operate the server or server module with the transitional version of ELOM for any period of time beyond what is needed to perform the upgrade.

1. Use the following steps to perform a clean shutdown of the OS and place the server in standby power mode:



Caution – Do not power off the server during a BIOS POST (power on system test). Powering off the server during a BIOS POST might corrupt and lock the BIOS chip, rendering the server inoperable. To avoid corrupting and locking the BIOS chip always perform a clean shutdown of the OS. To recover from a corrupt BIOS chip, see the recovery procedures in [Chapter 4](#) and [Chapter 5](#).

- a. **Start the operating system.**
- b. **Use the OS-specific shutdown procedure to power off the system normally.**
The server powers off to standby power mode.

2. Copy the transitional ELOM firmware file to your TFTP server.

Server	Transitional ELOM Firmware File Name
Sun Fire X4150	X4150-026_450
Sun Fire X4450	X4450-450_3B17
Sun Blade X6250	Telom_X6250-xxx_xxx.ROM
Sun Blade X6450	Telom_X6450-xxx_xxx.ROM

3. Log in to the CLI.

For CLI access options and login instructions, see the *Embedded Lights Out Manager Administration Guide* for your server.

Note – The CLI commands, syntax, and namespaces in this section might be different from the commands, syntax, and namespaces used for your server; see the *Embedded Lights Out Manager Administration Guide* for your server or server module for the appropriate commands, syntax, and namespaces.

4. Navigate to the `TftpUpdate` directory. For example:

```
-> cd /SP/TftpUpdate
```

5. Use the `set` command to set the IP address of the TFTP server. For example:

```
-> set ServerIP=xxx.xxx.xxx.xxx
```

where `xxx.xxx.xxx.xxx` is the IP address of the TFTP server.

6. Use the `set` command to set the file name for the transitional ELOM firmware image file.

```
-> set Filename=filename
```

where *filename* is the name of the transitional ELOM firmware image file.

For example for Sun Fire X4150:

```
-> set Filename=X4150-026_450
```

7. Use the `set` command to start the TFTP download:

```
-> set Update=action
```

Note – A network failure during the file upload results in a time out. This causes the SP to reboot with the prior version of the firmware.

8. Select Yes to continue.

The update process starts.

X4150 output sample:

```
-> cd /SP/TftpUpdate  
-> set ServerIP=xxx.xxx.xxx.xxx  
-> set FileName=X4150-026_450  
-> set Update=action  
getting image...  
getting image successfully.  
prepare to update...  
Prepare OK!  
Update Successful  
starting update...
```

The firmware upgrade process updates both the BIOS and SP firmware. After the upgrade is finished, the transitional version of the ELOM boots.

9. When the SP reboots, proceed directly to [Chapter 3](#).

Migrating Your Server or Server Module to ILOM

Use this chapter to upgrade Sun Fire X4150, Sun Fire X4450, Sun Blade X6250, and Sun Blade X6450 servers and server modules from the transitional version of ELOM to ILOM.

The migration procedure is functionally the same as a standard ELOM firmware upgrade procedure. You can use the web GUI or the CLI to migrate to ILOM, and a combined firmware image file is used to upgrade both the BIOS and SP at the same time. However, unlike a standard ILOM upgrade, which uses a `.pkg` file, you *must* use the `.bin` combined firmware image file.



Caution – Do not use the `.pkg` combined firmware image file found on the Tools and Drivers CD. The `.pkg` file is used *only* for ILOM-to-ILOM updates.

Before You Begin

- You must have already updated your server or server module to the transitional version of ELOM (see [Chapter 2](#)).

You have the following options for upgrading the firmware to ILOM:

Upgrade Method	See this section or procedure:
Use the ELOM web GUI	“To Migrate to ILOM Using the Web GUI” on page 24
Use the ELOM CLI	“To Migrate to ILOM Using the Command-Line Interface (CLI)” on page 26
Upgrade Sun Blade X6250 and X6450 servers using a USB flash drive	“To Upgrade Sun Blade X6250 and X6450 Server Modules to ILOM Using a DOS-Bootable USB Flash Drive” on page 30

▼ To Migrate to ILOM Using the Web GUI



Caution – Do not power off the server during a BIOS POST (power-on system-test). Powering off the server during a BIOS POST might corrupt and lock the BIOS chip, rendering the server inoperable. To avoid corrupting and locking the BIOS chip always perform a clean shutdown of the OS. To recover from a corrupt BIOS chip, see the recovery procedures in [Chapter 4](#) and [Chapter 5](#).

Note – The transitional ELOM is *not* compatible with Firefox version 3.0.1. Use a different version, a different browser, or the CLI to perform these steps.

1. **If necessary, use the OS shutdown procedures to perform a clean shut down of the OS.**
2. **Ensure that the server or server module is in standby power mode.**
3. **In your browser's address bar, type the IP address of the server's SP.**
For example:
http://xxx.xxx.xxx.xxx
where xxx.xxx.xxx.xxx is the IP address of the SP.
The ELOM web GUI login screen appears.
4. **Log in as root or as an account with administrator privileges.**
The ELOM web GUI main screen appears.
5. **From the main menu, click the Maintenance tab.**
The Maintenance submenu tabs appear.
6. **Click the Firmware Upgrade tab.**
The Firmware Upgrade screen appears.
7. **Click the Enter Firmware Upgrade Mode button.**
8. **To locate the firmware upgrade file, click Browse.**

9. Browse for the combined ILOM firmware image file that you copied (see [Chapter 1](#))

Server	Combined ILOM Firmware Image Filename
Sun Fire X4150	X4150-2.0.2.6.bin
Sun Fire X4450	X4450-2.0.2.6.bin
Server Module	
Sun Blade X6250	6250ixx.bin
Sun Blade X6450	6450ixx.bin

where *xx* is the latest version of the combined ILOM firmware image file.



Caution – Do not use the .pkg combined firmware image file found on the Tools and Drivers CD. The .pkg file is used only for ILOM-to-ILOM updates.

10. Select the .bin file, and then click Open.

11. Select Preserve BIOS CMOS.

Only the default BIOS values are loaded at this time.



Caution – Do not interrupt the firmware update process. The process can take up to five minutes to finish. Interrupting the process can corrupt the BIOS and SP (recovery procedures are available in [Chapter 4](#) and [Chapter 5](#)).

12. To start the firmware upgrade, click the Update Firmware button.

The firmware upgrade process starts. The process takes *about five minutes* to upgrade both the BIOS and the SP. The following message appears:

```
Prepare to update Service Processor.
```

After the upgrade is finished, the following message appears:

```
File uploaded successfully.
```

After a successful upgrade, the ILOM/SP boots, and the following message appears:

```
SP is booting.
```

Note – If you do *not* receive confirmation of a successful update, see [“Resolving a Failed ILOM Upgrade” on page 29](#).

The SP takes 6-10 minutes to boot. Boot progress messages appear on the console, and at the end of the boot, the following message might appear.

```
-> /etc/ssh/ssh_host_dsa_key already exists.  
Overwrite (y/n)?
```

Type Y, but you can safely ignore this message. After the SP boots the web session is restarted. The server boots twice. During the first boot no function key prompts appear. The BIOS version information is updated once the server is powered on.

13. **When the process finishes, power cycle and boot the server.**
14. **Verify that the server module is now ILOM-based by logging in to the web GUI or the CLI.**
For information about how to view ILOM version information, see the *Integrated Lights Out Manager 2.0 User's Guide*.
15. **If necessary, enter the BIOS Setup Utility to customize the settings.**

▼ To Migrate to ILOM Using the Command-Line Interface (CLI)



Caution – Do not power off the server during a BIOS POST (power on system test). Powering off the server during a BIOS POST might corrupt and lock the BIOS chip, rendering the server inoperable. To avoid corrupting and locking the BIOS chip always perform a clean shutdown of the OS. To recover from a corrupt BIOS chip, see the recovery procedures in [Chapter 4](#) and [Chapter 5](#).

1. **If necessary, use the OS shutdown procedures to perform a clean shut down of the OS.**
2. **Ensure that the server or server module is in standby power mode.**

Note – The CLI commands, syntax, and namespaces in this section might be different from the commands, syntax, and namespaces used for your server; see the *Embedded Lights Out Manager Administration Guide* for your server for the appropriate commands, syntax, and namespaces.

3. Copy the combined ILOM firmware image file to your TFTP server.

Server	Combined ILOM Firmware Image Filename
Sun Fire X4150	x4150-2.0.2.6.bin
Sun Fire X4450	x4450-2.0.2.6.bin
Server Module	
Sun Blade X6250	6250ixx.bin
Sun Blade X6450	6450ixx.bin

where *xx* is the latest version of the combined ILOM firmware image file.

4. Log in to the CLI, and navigate to the `TftpUpdate` directory. For example:

```
-> cd /SP/TftpUpdate
```

Note – A network failure during the file upload will result in a timeout. This causes the SP to reboot with the prior version of the firmware.

5. Use the `set` command to set the IP address of the TFTP server. For example:

```
-> set ServerIP=xxx.xxx.xxx.xxx
```

where *xxx.xxx.xxx.xxx* is the IP address of the TFTP server.

6. Use the `set` command to set the file name of the combined firmware image file.



Caution – Do not use the `.pkg` combined firmware image file found on the Tools and Drivers CD. The `.pkg` file is used only for ILOM-to-ILOM updates.

```
-> set Filename=filename
```

where *filename* is the name of the `.bin` combined firmware image file.

For example for the Sun Fire X4150:

```
-> set Filename=X4150-2.0.2.6.bin
```

7. Use the `set` command to start the TFTP download:

```
-> set Update=action
```

8. Select Yes to continue.

The firmware upgrade process starts. Sample output:

```
-> cd /SP/TftpUpdate
-> set ServerIP=123.456.78.910
-> set FileName=X4150-2.0.2.6.bin
-> set Update=action
getting image...
getting image successfully.
prepare to update...
Prepare OK!
Update Successful
starting update...
```

The process takes *about five minutes* to upgrade both the BIOS and the SP. The following message appears:

```
Prepare to update Service Processor.
```

After the upgrade is finished, the following message appears:

```
File uploaded successfully.
```

After a successful upgrade, the ILOM/SP boots, and the following message appears:

```
SP is booting.
```

Note – If you do *not* receive confirmation of a successful update, see [“Resolving a Failed ILOM Upgrade” on page 29](#).

The SP takes 6-10 minutes to boot. Boot progress messages appear on the console, and at the end of the boot, the following error might appear.

```
-> /etc/ssh/ssh_host_dsa_key already exists.
Overwrite (y/n)?
```

You can safely ignore this message. After the SP boots, the session is restarted. The BIOS version information is updated when the server is powered on.

9. When the process finishes, power on and boot the server to update the BIOS version.

The server boots twice. During the first boot, function key prompts do not appear.

10. Verify that the server module is now ILOM-based by logging in to the web GUI or the CLI.

For information about how to view ILOM version information, see the *Integrated Lights Out Manager 2.0 User's Guide*.

11. If necessary, enter the BIOS Setup Utility to customize the settings.

Resolving a Failed ILOM Upgrade

If one of the following error messages appears, the firmware upgrade has *failed*:

```
Firmware size incorrect.  
Incorrect image type.  
BIOS upgrade failed.
```

▼ To Resolve a Failed ILOM Upgrade

- Try the upgrade again, and, if a failure occurs again, see the recovery procedures in the following chapters:
 - For X4150 and X4450, see [Chapter 4](#).
 - For X6250 and X6450, see [Chapter 5](#).

Upgrading Sun Blade X6250 and X6450 Server Modules to ILOM Using a DOS-Bootable USB Flash Drive

This procedure does *not* require an upgrade to the transitional ELOM, and it does *not* retain any ELOM or BIOS configuration settings. This procedure requires that you set up your server module so that you can view and respond boot and POST messages.

Before You Begin

You need the following:

- A DOS-bootable USB flash drive
- The multi-port dongle cable
- A serial terminal or a computer running terminal-emulation software

▼ To Upgrade Sun Blade X6250 and X6450 Server Modules to ILOM Using a DOS-Bootable USB Flash Drive

1. Prepare the DOS-bootable USB flash drive.
2. Copy the contents of the `\firmware\elom_to_ilom\dos\` directory from the Tools and Drivers CD to the USB flash drive.
3. Make note of the `.bin` and the `.bat` file names.
4. Connect the multi-port dongle cable to the UCP connector on the front of the server module.
5. Connect the serial terminal to the multi-port dongle cable.
6. Insert the DOS-bootable USB flash drive into a USB port on the multi-port dongle cable.
7. Power on the server module.
8. Watch the display and when prompted press F8.
9. Select to boot the server using the DOS-bootable USB flash drive.

The server boots to DOS, and a DOS prompt appears:

>

10. At the DOS prompt, use `socflash` and the server module-specific `.bin` file or run the server module-specific `.bat` (batch) file to update the SP to ILOM:

- To use `socflash` and the `.bin` file

For the Sun Blade X6250:

```
> socflash -p 1 -v -f 6250ixx.bin
```

where `xx` is BIOS version number.

For the Sun Blade X6450:

```
> socflash -p 1 -v -f 6450ixx.bin
```

where `xx` is BIOS version number.

–or–

- To run the server module-specific batch file:
 - For the Sun Blade X6250:

```
> xxxx.bat
```

where `xxxx` is BIOS version number filename.
 - For the Sun Blade X6450:

> **xxxx.bat**

where *xxxx* is BIOS version number filename.

The flash upgrade to ILOM starts. The upgrade takes approximately 5 minutes. When the upgrade finishes the DOS prompt appears.

>

11. At the DOS prompt, enter the following command to flash the BIOS:

- For the Sun Blade X6250:

> **Afudos S90_xxxx.ROM /P /B /K /X /C**

where *xxxx* is BIOS version number.

- For the Sun Blade X6450:

> **Afudos S95_xxxx.ROM /P /B /K /X /C**

where *xxxx* is BIOS version number.

The BIOS flash process begins. When the process ends, the DOS prompt returns.

12. When the DOS prompt returns, eject the server module from the chassis to remove power.

Tip – You do not have to completely remove the server from the chassis. Eject the server module far enough to disengage it from the chassis connector.

13. Wait 30 seconds.

14. After 30 seconds, insert the server module into the chassis.

15. Watch the front panel LEDs.

The green LED blinks while the SP boots. The SP boot takes about 5 minutes. After the SP boots, the blue LED lights.

16. When the blue LED lights, press the power button to power on the blade.

17. Verify that the server module is now ILOM-based by logging in to the web GUI or the CLI.

For information about how to view ILOM version information, see the *Integrated Lights Out Manager* documentation included with your server's document collection.

18. If necessary, enter the BIOS Setup Utility to customize the settings.

Recovery from a Failed ILOM Upgrade for Sun Fire X4150 and X4450 Servers

Use the procedures in this section to recover from a failed upgrade. A failed upgrade has occurred if any of the following messages appears during the upgrade process:

```
Firmware size incorrect.  
Incorrect image type.  
BIOS upgrade failed.
```



Caution – The procedures listed in this section should be used only for system recovery. These procedures do not preserve BIOS and ELOM or ILOM configuration settings.

Before You Begin

Your server should be set up to view and respond to system boot and POST messages and prompts.

To Recover	See this section or procedure
The SP firmware	“Recovering From a Corrupt SP” on page 34
The BIOS firmware	“Recovering From a Corrupt BIOS” on page 36

Recovering From a Corrupt SP

If the SP does not boot or is inaccessible, you must recover the SP firmware to ELOM and repeat the migration process. This section lists two SP firmware recovery methods for the Sun Fire X4150 and X4450 servers:

Method	Description	Procedure
1	Use the Tools and Drivers CD.	See “To Recover From a Corrupt SP Using the Tools and Drivers CD (Method 1)” on page 34.
2	Use DOS-bootable media.	See “To Recover From a Corrupt SP Using DOS-Bootable Media (Method 2)” on page 35.

▼ To Recover From a Corrupt SP Using the Tools and Drivers CD (Method 1)

Note – Use this procedure for the Sun Fire X4150 and X4450 servers only.

- 1. Set up the server to view and respond to boot and POST messages.**
- 2. Power on the server, and insert the Tools and Drivers v2.0 (or v2.0.0) CD into the server’s CD/DVD drive.**

The server boots from the Tools and Drivers CD.
- 3. Watch the POST messages, and when prompted, press F2 to enter the BIOS Setup Utility.**

The BIOS Setup Utility main screen appears.
- 4. Ensure that the CD/DVD is the primary boot device.**

Use the arrow keys to navigate the screens.
- 5. Save and exit the BIOS Setup Utility and boot the server.**

The server boots from the CD, and the Tools and Drivers main menu appears.
- 6. Select the option to exit to DOS.**

The DOS prompt appears.
- 7. Navigate to the `\recovery\elom\` directory:**

```
cd \recovery\elom\
```

8. Run the `recovery.bat` file:

`recovery.bat`

A menu appears with the following options:

1. To recover both SP and BIOS firmware
2. To recover SP
3. To recover BIOS

9. Select the option to recover the SP and BIOS firmware (option 1).

The recovery process starts.

10. When the SP recovery finishes, power on and boot the server.

The SP is recovered to the latest working version of ELOM.

11. Repeat the migration by updating to the transitional ELOM (see [Chapter 2](#)).

▼ To Recover From a Corrupt SP Using DOS-Bootable Media (Method 2)

Note – Use this procedure for the Sun Fire X4150 and X4450 servers only.



Caution – The binaries used in the recovery process are specific to the platform. The binaries for the X4150 cannot be used for the X4450. Using the binaries from the incorrect platform leads to unpredictable results.

1. Prepare the DOS-bootable media.

2. Set up the server to view and respond to boot and POST messages.

3. Copy the contents of the `/recovery/elom` directory from the Tools and Drivers CD to the DOS-bootable media.

4. Boot the server with the DOS-bootable media.

The server boots, and a DOS prompt appears.

5. To flash the SP firmware, run the `recovery.bat` file at the DOS prompt:

```
> recovery.bat
```

6. When the SP recovery finishes, power on and boot the server.

The SP is recovered to the latest working version of ELOM.

7. Repeat the migration by updating to the transitional ELOM (see [Chapter 2](#)).

Recovering From a Corrupt BIOS

If the server does not boot or if the BIOS is inaccessible, you must recover the BIOS firmware. This section describes two BIOS firmware recovery methods for the Sun Fire X4150 and X4450 servers. Use one of the following recovery methods:

Method	Description	Procedure
1	Use the remote flash file package with the web GUI or the CLI.	See “To Recover From a Corrupt BIOS Firmware Using the Remote Flash File Package (Method 1)” on page 36.
2	Use the Tools and Drivers CD.	See “To Recover BIOS Firmware From the Tools and Drivers CD (Method 2)” on page 42.

▼ To Recover From a Corrupt BIOS Firmware Using the Remote Flash File Package (Method 1)

The following procedures use the flash file package to recover the BIOS firmware. The flash file package is a combined firmware image file that flashes *both* the SP and the BIOS. Verify whether the SP has the ELOM or ILOM firmware installed, and recover the matching ELOM or ILOM BIOS firmware.

Note – Use this procedure for the Sun Fire X4150 and X4450 servers only.

1. Use the web GUI or the CLI to determine the type of SP firmware (ELOM or ILOM) installed:

- To use the Web GUI :
 - a. **Enter the SP address in a web browser.**

The login screen appears.
 - b. **Note the title of the login screen.**

If the title states, Embedded Lights Out Manager, the SP is ELOM-based.
If the title states, Integrated Lights Out Manager, the SP is ILOM-based.
 - c. **Log in to the web GUI.**

The main screen appears.
 - d. **To view version information, click the System Information tab.**

The transitional ELOM will appear as version 4.0.50.
- CLI method

a. Log into the SP via ssh.

The SP version is displayed, and the CLI prompt appears:

->

b. To view more detailed version information enter the `version` command at the CLI prompt:

-> **version**

The transitional ELOM will appear as version 4.0.50.

2. Use the following table to determine which flash file package to use.

If the SP is ELOM use the transitional ELOM BIOS, and if the SP is ILOM use the ILOM combined firmware image (.pkg) file.

Server	Transitional ELOM file:	ILOM Combined firmware image file:
Sun Fire X4150	X4150-026_450	x4150-2.0.2.6.r35128.pkg
Sun Fire X4450	X4450-450_3B17	X4450-2.0.2.6.pkg

You have the following recovery options for method 1:

Option	See this section or procedure:
Recovering the ELOM BIOS using the web GUI	"To Recover the ELOM BIOS Firmware Using the Web GUI" on page 37
Recovering the ELOM BIOS using the CLI	"To Recover the ELOM BIOS Firmware Using the CLI" on page 39
Recovering the ILOM BIOS using the web GUI	"To Recover the ILOM BIOS Firmware Using the Web GUI" on page 40
Recovering the ILOM BIOS using the CLI	"To Recover the ILOM BIOS Firmware Using the CLI" on page 41

▼ To Recover the ELOM BIOS Firmware Using the Web GUI

1. Ensure that the serv is in standby power mode.

2. Copy the transitional ELOM remote flash file from the Tools and Drivers CD to a device that is accessible to your server (see [Chapter 1](#)).

The transitional ELOM remote flash file is located on the Tools and Drivers CD at:

Server	File Name
Sun Fire X4150	\remoteflash\elom_to_ilom\X4150-026_450
Sun Fire X4450	\remoteflash\elom_to_ilom\X4450-450_3B17

3. In your browser's address bar, type the IP address of the server's SP.

For example:

http://xxx.xxx.xxx.xxx

where xxx.xxx.xxx.xxx is the IP address of the SP.

The ELOM web GUI login screen appears.

4. Log in as root or as an account with administrator privileges.

The ELOM web GUI main menu screen appears.

5. If the server is powered on, use the following steps to place the server in standby power mode.

The server *must* be powered off and in standby power mode.

- a. From the main menu, click the Remote Control tab.

- b. The Remote Control submenu tabs appear.

- c. Click the Remote Power Control tab.

The Remote Power Control submenu screen appears.

- d. Select the Power Off radio button, and click the Submit button.

This action powers off the server.

6. From the main menu, click the Maintenance tab.

The Maintenance submenu tabs appear.

7. Click the Firmware Upgrade tab.

The Firmware Upgrade screen appears.

8. Click the Enter Firmware Upgrade Mode button.

9. Locate the firmware upgrade file.

- a. Click Browse and locate the transitional ELOM file that you copied in [Step 2](#).

- b. Select the file and then click Open.

10. **Accept the default, Clear BIOS CMOS. To start the firmware upgrade, click the Update firmware button.**

The firmware upgrade process updates the BIOS and SP firmware. After the upgrade is finished, the ELOM boots and the web session starts. The BIOS version information is updated when the host is powered on.

11. **When the process finishes, power on and boot the server.**

The BIOS version information is updated once the server is powered on.

12. **Repeat the ELOM-to-ILOM migration process.**

▼ To Recover the ELOM BIOS Firmware Using the CLI

1. **Ensure that the server is in standby power mode.**
2. **Copy the transitional ELOM remote flash file from the Tools and Drivers CD to your TFTP server.**

Server	File Name
Sun Fire X4150	\remoteflash\elom_to_ilom\X4150-026_450
Sun Fire X4450	\remoteflash\elom_to_ilom\X4450-450_3B17

3. **Access the CLI.**

For CLI access options, see the *Embedded Lights Out Manager Administration Guide* for your server.

Note – The CLI commands, syntax, and namespaces in this section might be different from the commands, syntax, and namespaces used for your server; see the *Embedded Lights Out Manager Administration Guide* for your server for the appropriate commands, syntax, and namespaces.

4. **Log in to the CLI, and navigate to the TftpUpdate directory. For example:**
-> **cd /SP/TftpUpdate**
5. **Use the set command to set the IP address of the TFTP server. For example:**
-> **set ServerIP=xxx.xxx.xxx.xxx**
where xxx.xxx.xxx.xxx is the IP address of the TFTP server.
6. **Use the set command to set the file name of the ELOM remote flash file.**
For example, for the Sun Fire X4450:
-> **set Filename=X4450-418-3B17**

7. Use the `set` command to start the TFTP download:

```
-> set Update=action
```

8. Select Yes to continue.

Example:

```
-> cd /SP/TftpUpdate
-> set ServerIP=123.456.78.910
-> set FileName=X4450-418-3B17
-> set Update=action
getting image...
getting image successfully.
prepare to update...
Prepare OK!
Update successful
starting update...
```

9. The ELOM restarts.

The BIOS version information is updated once the server is powered on.

10. When the process finishes, boot the server.

11. Repeat the migration process.

▼ To Recover the ILOM BIOS Firmware Using the Web GUI

1. **Log in to the ILOM web GUI using an account that has administrator privileges.**

The ILOM main screen appears. For information about how to login in to the ILOM web GUI, see the *Integrated Lights Out Manager Administration Guide*.

2. **From the main menu, click the Maintenance tab**

The Maintenance submenu tabs appear.

3. **Click the Firmware Upgrade tab.**

The Firmware Upgrade screen appears.

4. **Click the Enter Upgrade Mode button.**

A dialog box appears asking you to confirm that you want to enter Upgrade mode.

5. **Click OK to enter Upgrade mode.**

The ILOM enters upgrade mode.

6. Click Browse to locate and select the ILOM combined firmware image file.

The ILOM combined firmware image file is located on the Tools and Drivers CD at:

Server	ILOM Image File Location
Sun Fire X4150	\remoteflash\ilom\2.0\x4150-2.0.2.6.r35128.pkg
Sun Fire X4450	\remoteflash\ilom\2.0.0\x4450-2.0.2.6.pkg

7. Click Upload.

The file is uploaded and verified as the correct image update for you SP. This process takes about two minutes.

8. When the Verify Firmware Image page appears, click OK.

9. Select Preserve Configuration to keep your ILOM settings. If not, the settings are overwritten by the firmware defaults.

10. Click Start Upgrade.

A progress screen appears. Once the update progress reaches 100%, the firmware update is complete, and the ILOM automatically restarts.

11. When the process finishes, power on and boot the system.

The BIOS version information is updated once the server is powered on.

▼ To Recover the ILOM BIOS Firmware Using the CLI

1. Ensure that the server is in standby power mode.

2. Copy the ILOM combined firmware image file from the Tools and Drivers CD to your TFTP server.

The ILOM combined firmware image file is located on the Tools and Drivers CD at:

Server	ILOM Image File
Sun Fire X4150	\remoteflash\ilom\2.0\x4150-2.0.2.6.r35128.pkg
Sun Fire X4450	\remoteflash\ilom\2.0.0\x4450-2.0.2.6.pkg

3. Log in to the CLI using an account that has administrator privileges.

The CLI prompt appears:

->

For CLI access options and login instructions, see the *Integrated Lights Out Manager Administration Guide* for your server.

4. Enter the following command to download the new ILOM firmware image:

-> **load -source tftp:URL/filename.pkg**

where *URL* is the URL of the tftp server to which you copied the ILOM combined firmware image in [Step 2](#), and *filename.pkg* is the name of the ILOM combined firmware image file.

For example:

-> **load -source tftp://123.45.678.910/x4150-2.0.2.6.r35128.pkg**

The firmware upgrade process begins, and a file load confirmation prompt appears.

Are you sure you want to load the specified file (y/n)?

5. Type Y and press Enter.

A prompt appears asking if you want to preserve the configuration.

Do you want to preserve the configuration (y/n)?

6. Type Y and press Enter.

The firmware upgrade continues. When the upgrade is finished, the following messages appear:

Firmware update is complete.

ILOM will now be restarted with the new firmware.

7. After the ILOM upgrade finishes, power on and boot the system.

The BIOS version information is updated once the server is powered on.

▼ To Recover BIOS Firmware From the Tools and Drivers CD (Method 2)

1. Set up the server to view and respond to boot and POST messages.

2. Power on the server.

To determine which SP firmware is installed, use either web GUI or the CLI method as follows:

3. Determine which type of SP firmware is installed:

- Web GUI method:
 - a. **Enter the SP address in a web browser.**
The login screen appears.
 - b. **Note the title of the login screen.**
 - If the title states, Embedded Lights Out Manager, the SP is ELOM-based.
 - If the title states, Integrated Lights Out Manager, the SP is ILOM-based.
 - c. **Log in to the web GUI.**
The main screen appears.
 - d. **To view version information, click the System Information tab.**

- CLI method
 - a. **Log into the SP using ssh.**
The SP version is displayed, and the CLI prompt appears:
->
 - b. **To view more detailed version information enter the `version` command at the CLI prompt:**
-> **version**

4. Insert the Tools and Drivers CD into the CD/DVD drive.

5. Reboot the server.

The server boots from the Tools and Drivers CD, and the Tools and Drivers main menu appears.

6. Select the option to exit to DOS (option 3).

The DOS prompt appears.

7. Navigate to the appropriate Recovery directory.

```
cd \recovery\[ilom|elom]
```

For example, if the system SP is currently ILOM-based enter the following command:

```
cd \recovery\ilom\
```

8. Run the `recovery.bat` file. Enter:

```
recovery.bat
```

A menu appears with the following options:

1. To recover both SP and BIOS firmware
2. To recover SP
3. To recover BIOS

9. Select the option to recover the BIOS (option 3).

The BIOS flash process starts.

10. When the process finishes, power on and boot the server.

11. If necessary, enter the BIOS Setup Utility to customize BIOS settings.

Recovery From a Failure During the ILOM Upgrade for Sun Blade X6250 or X6450 Server Modules

Note – Before performing these procedures, retry the upgrade.

Use the procedures in this section to recover from a failed upgrade on a Sun Blade X6250 or X6450 server module. A failed upgrade has occurred if any of the following messages appears during the upgrade process:

```
Firmware size incorrect.
Incorrect image type.
BIOS upgrade failed.
```



Caution – The procedures listed in this section should be used only for system recovery. These procedures do not preserve BIOS setting, and do not preserve ELOM or ILOM configuration settings.

You have the following recovery options:

Recovery Option	See this section or procedure
Corrupted SP	“Recovering a Corrupt SP on Sun Blade X6250 and X6450 Server Modules” on page 46
Corrupted BIOS	“Recovering a Corrupt BIOS” on page 47

Recovering a Corrupt SP on Sun Blade X6250 and X6450 Server Modules

If the SP does not boot or is inaccessible, use this procedure to recover the SP firmware on your Sun Blade X6250 or Sun Blade X6450 server module.

Before You Begin

You need the following:

- A DOS-bootable USB flash drive
- Multi-port dongle cable
- Keyboard, video and mouse

▼ To Recover a Corrupt SP on Sun Blade X6250 and X6450 Server Modules

1. **Prepare the DOS-bootable USB flash drive, and copy the following files from the Tools and Drivers CD to the USB flash drive:**
 - `\firmware\elom_to_ilom\dos\SOCFLASH.EXE`
 - `\firmware\elom_to_ilom\dos\DOS4GW.EXE`
2. **Copy the server module-specific binary (.bin) file from the Tools and Drivers CD to the USB flash drive:**

Server Module	Binary File
Sun Blade X6250	<code>\firmware\elom_to_ilom\6250ixx.bin</code>
Sun Blade X6450	<code>\firmware\elom_to_ilom\6450ixx.bin</code>

where *xx* is the version number.

3. **Connect the multi-port dongle cable to the UCP connector on the front of the server module.**
4. **Connect a keyboard, video, and mouse (KVM) to the multi-port dongle cable.**
5. **Insert the DOS-bootable USB flash drive into a USB port on the multi-port dongle cable.**
6. **Power on the server module.**

7. Watch the display and when prompted press F8.

8. Select to boot the server using the DOS-bootable USB flash drive.

The server boots to DOS, and a DOS prompt appears:

>

9. At the DOS prompt, enter the following server module-specific command:

■ For the Sun Blade X6250:

```
> socflash -p 1 -v -f 6250ixx.bin
```

■ For the Sun Blade X6450:

```
> socflash -p 1 -v -f 6450ixx.bin
```

The flash upgrade to ILOM starts. The upgrade takes approximately 10 minutes. When the upgrade finishes, the DOS prompt appears.

>

10. When the DOS prompt appears, eject the server module from the chassis backplane to remove power.

You do not have to remove the server from the chassis.

11. After 30 seconds, insert the server module fully into the chassis, and power on the server.

12. Verify that the server module is now ILOM-based by logging in to the web GUI or the CLI.

For information about how to view ILOM version information, see the *Integrated Lights Out Manager 2.0 User's Guide*.

Recovering a Corrupt BIOS

To recover a corrupt BIOS, you first must determine whether the SP is ELOM-based or ILOM-based. Once you know the status of the SP, you then need to downgrade the SP and repeat the upgrade procedure.

▼ To Determine the Status of the SP

1. Determine which type of SP firmware is installed using either the web GUI or the CLI:

■ Web GUI method:

a. Enter the SP address in a web browser.

The login screen appears.

- b. **Note the title of the login screen.**
 - If the title states, Embedded Lights Out Manager, the SP is ELOM-based.
The transitional version of ELOM is designated with red lettering.
 - If the title states, Integrated Lights Out Manager, the SP is ILOM-based.
 - c. **Log in to the web GUI.**
The main screen appears.
 - d. **To view version information, click the System Information tab.**
The System Information submenu tabs appear.
 - e. **Click the Version tab.**
Version information appears.
 - The transitional ELOM version for the X6250: 028
The transitional ELOM version for the X6450: 053
 - The ILOM version is at least: 2.0.3.6
 - CLI method
 - a. **Log into the SP via ssh.**
The SP version is displayed, and the CLI prompt appears:
->
 - b. **To view formatted version information enter the `version` command at the CLI prompt:**
-> **version**
 - The transitional ELOM version for the X6250: 028
The transitional ELOM version for the X6450: 053
 - The ILOM version is at least: 2.0.3.6
2. **Based on the status of the SP, repeat the upgrade procedure to continue the migration process:**
- If the SP is transitional ELOM:
 - a. **Return (upgrade) the SP to the *original* version of ELOM and restart the migration process.**
 - If the SP is ILOM-based:
 - a. **Downgrade the SP to the transitional version of ELOM (see [Chapter 6](#)).**

b. After downgrading to the transitional version of ELOM, migrate to ILOM using one of the following procedures:

Option:	See this section or procedure:
Upgrade using the web GUI	“To Migrate to ILOM Using the Web GUI” on page 24
Upgrade using the CLI	“To Migrate to ILOM Using the Command-Line Interface (CLI)” on page 26

Downgrading From ILOM to ELOM

Use this chapter to *downgrade* Sun Fire X4150 and Sun Fire X4450 servers and Sun Blade X6250 and Sun Blade X6450 server modules from ILOM to ELOM. While the downgrade *preparation* procedures are the same for both the Sun Fire servers and the Sun Blade server modules, the downgrade procedures are different. Use the appropriate downgrade procedure for your server or server module. This chapter contains the following sections:

- [“Preparing to Downgrade Your Server or Server Module From ILOM to ELOM” on page 51](#)
- [“Downgrading From ILOM to ELOM” on page 53](#)

Preparing to Downgrade Your Server or Server Module From ILOM to ELOM

You might find it necessary to downgrade your ILOM-based systems to ELOM-based systems first and then upgrade all the servers to ILOM at a later date. This section describes this process.

Note – Sun recommends that you migrate your servers to ILOM as soon as possible.

Step	Task	Section or Procedure
1.	Review <i>Release Notes</i> or <i>Product Notes</i> documentation.	Reviewing Product Notes and ILOM and ELOM Documentation
2.	Access the ILOM and record the configuration settings.	“Recording ILOM Configuration Settings” on page 53
3.	Downgrade from ILOM to ELOM.	“Downgrading From ILOM to ELOM” on page 53

Reviewing Product Notes and ILOM and ELOM Documentation

The *Product Notes* contains the most up-to-date information about your server, including hardware, software, and BIOS and SP issues. Review the *Product Notes* for information about downgrading from ILOM to ELOM. Use the following procedure to access and view or download the most recent versions of the *Product Notes* and ELOM and ILOM documentation.

▼ To Review Product Notes and ILOM and ELOM Documentation

1. **See the *Product Notes* for your server or server module for information about the availability of ILOM and the ELOM-to-ILOM conversion:**

a. **Open your browser and go to one of the following:**

Server	Online Document Collection
Sun Fire X4150	http://docs.sun.com/app/docs/prod/sf.x4150#hic
Sun Fire X4450	http://docs.sun.com/app/docs/prod/sf.x4450#hic
Sun Blade X6250	http://docs.sun.com/app/docs/prod/blade.x6250#hic
Sun Blade X6450	http://docs.sun.com/app/docs/prod/blade.x6450#hic

b. **Click to expand the documentation collection for your server.**

2. **Choose to view or download the *Product Notes*.**

3. Review the documentation for information specific to the ILOM-to-ELOM downgrade.

Recording ILOM Configuration Settings

The ILOM-to-ELOM downgrade process does *not* retain ILOM configuration settings. If you would like to review and record ELOM-compatible ILOM settings (for example, network information and user accounts), use the procedure in this section to access and record your ILOM configuration settings. If you do not wish to record ILOM configuration settings before downgrading to ELOM, see [“Downgrading Sun Fire X4150 and X4450 Servers From ILOM to ELOM” on page 54.](#)

▼ To Record ILOM Configuration Settings

1. In your browser’s address bar, type the IP address of the server’s SP.

For example:

http://xxx.xxx.xxx.xxx

where xxx.xxx.xxx.xxx is the IP address of the SP.

The ILOM web GUI login screen appears.

2. Log in as root or as a user with administrator privileges.

The ILOM main screen appears.

3. Record the information for any of the configuration settings that you need to note.

Downgrading From ILOM to ELOM

The downgrade procedures for the Sun Fire servers are different from the downgrade procedures for the Sun Blade server modules. Use the appropriate procedure for your server or server module:

- [“Downgrading Sun Fire X4150 and X4450 Servers From ILOM to ELOM” on page 54](#)
- [“Downgrading Sun Blade X6250 and X6450 Server Modules From ILOM to ELOM” on page 58](#)

Downgrading Sun Fire X4150 and X4450 Servers From ILOM to ELOM

The procedures in this section describe how to perform the ILOM-to-ELOM downgrade.

Before You Begin

Review the procedures in this section.

You need the following:

- Tools and Drivers CD v2.0
- A serial terminal or a computer running terminal-emulation software

Depending on the procedure you choose, you also might need the following:

- DOS-bootable USB flash drive

You have the following downgrade options:

Option	See this section or procedure:
• Downgrade using the Tools and Drivers CD (<i>recommended method</i>)	“To Downgrade From ILOM to ELOM Using the Tools and Drivers CD” on page 55
• Downgrade using a DOS-bootable USB flash drive.	“To Downgrade From ILOM to ELOM Using a DOS-bootable USB Flash Drive” on page 55
• Downgrade using <code>socflash.exe</code>	To Downgrade From ILOM to ELOM Using the Tools and Drivers CD



Caution – Do *not* use the remote keyboard and virtual mouse (RKVM) CD or diskette mount feature of the ILOM web GUI’s Remote Control - Redirection application. You must use the procedures detailed in this chapter. For recovery procedures, see the appropriate recovery chapter in this manual for your server or server module.

▼ To Downgrade From ILOM to ELOM Using the Tools and Drivers CD

1. Set up your server to respond to boot and POST messages and prompts.

Use a serial terminal or a computer running terminal-emulation software.

2. Power on the server.

3. Insert the Tools and Drivers CD.

The server boots from the CD, and the Tools and Drivers menu appears.

4. Select the option to Exit to DOS (option 3).

The DOS prompt appears:

>

5. Navigate to the `\recovery\elom\` directory:

```
> cd \recovery\elom
```

Tip – Use the DOS `dir` command to list the contents of the directory.

6. Run the `recovery.bat` file:

```
> recovery.bat
```

A menu appears with the following options:

1. To recover both SP and BIOS firmware
2. To recover SP
3. To recover BIOS

7. Select the option to recover the SP and BIOS firmware (option 1).

The flash process starts the downgrade.

8. When the downgrade to ELOM is finished, power cycle and boot the server.

The SP boots to ELOM.

▼ To Downgrade From ILOM to ELOM Using a DOS-bootable USB Flash Drive



Caution – The binaries used in the recovery process are specific to the platform. The binaries for the X4150 cannot be used for the X4450. Using the binaries from the incorrect platform leads to unpredictable results.

1. **Prepare a DOS-bootable flash drive.**
2. **Set up your server to respond to POST messages and boot prompts.**
3. **Power on and boot the server.**

Log in to the operating system.
4. **Insert and mount the DOS-bootable flash drive.**
5. **Insert and mount the Tools and Drivers CD.**
6. **Copy the contents of the \recovery\elom directory from the Tools and Drivers CD to the flash drive.**

For this procedure you need the \recovery\elom\recovery.bat file and accompanying files.
7. **Power on and boot the server.**

A message appears prompting you to Press F2 to enter the BIOS Setup Utility.
8. **Press F2 to enter the BIOS Setup Utility.**

The BIOS Setup Utility menu appears.
9. **Change the boot device priority; make the flash drive the primary boot device.**

Use the arrow keys to navigate the menus. See the Service Manual for information about the BIOS screens for your server.
10. **Save and exit the BIOS Setup Utility.**

The server boots from the flash drive and a DOS prompt appears:

>
11. **At the DOS prompt, run the recovery.bat file by entering the following command:**

> **recovery.bat**

A menu appears with the following options:

 1. To recover both SP and BIOS firmware
 2. To recover SP
 3. To recover BIOS
12. **Select the option to recover the SP and BIOS firmware (option 1).**

The flash process starts the downgrade.
13. **When the downgrade to ELOM is finished, power cycle and boot the server.**

The SP boots to ELOM.

▼ To Downgrade From ILOM to ELOM Using a DOS-Bootable USB Flash Drive and SOCFLASH.EXE



Caution – This downgrade procedure uses `socflash.exe`, which is a recovery tool. Do *not* use the `.pkg` file format for recovery procedures. Use the `.bin` recovery image instead.

1. Prepare a DOS-bootable USB flash drive.
2. Copy all the files from the `/recovery/elom/sp` directory on the Tools and Drivers CD v2.0 to the USB flash drive:
 - SOCFLASH.EXE
 - DOS4GW
 - The SP binary (`.bin`) file
3. Set up your server to respond to boot and POST messages and prompts.
Use a serial terminal or a computer running terminal-emulation software.
4. Remove AC power from the system to be flashed.
5. Insert the bootable flash drive into the USB port.
6. Connect AC power, power on the system, and watch the boot and POST messages.
 - a. A message appears stating that the BMC was not found.
The system takes up to five minutes to boot.
 - b. Press F8 to get a list of boot devices.
 - c. Choose to boot from the flash drive.
7. The server boots from the flash drive, and a DOS prompt appears:
>
8. At the DOS prompt, run the following command using the `.bin` file:
> `socflash -p 2 -f sp.bin`
where `sp` is the name of the SP `.bin` file.
For example for the X4150:
> `socflash -p 2 -f s92v410.bin`
9. After a successful flash use the `-r` option to reset the SP:
> `socflash -r`

10. **Access the BIOS Setup Utility to confirm that the BIOS does not report that the BMC was not found.**

The socflash.exe utility does not update the BIOS.

11. **To downgrade the BIOS, use the ELOM web GUI or CLI procedures in the *Embedded Lights Out Manager Administration Guide*.**

Downgrading Sun Blade X6250 and X6450 Server Modules From ILOM to ELOM

The procedure in this section describes how to perform the ILOM-to-ELOM downgrade for the Sun Blade X6250 and Sun Blade X6450 server modules. To perform the downgrade to ELOM, you must short jumpers on the motherboard (MB). Additionally, you *must* use the *ELOM socflash.exe* utility. Do *not* use the ILOM utility.

This procedure does not retain any BIOS or ILOM configuration settings.

Before You Begin

You will need:

- The blade set up for viewing and responding to POST messages and prompts
- The *Sun Blade X6250 Server Module Service Manual* or the *Sun Blade X6450 Server Module Service Manual*.
- A non-write protected, DOS-bootable medium (USB flash drive, compact flash, SATA HD, or SAS HD) containing the ELOM .bin and BIOS files for your server, and at least 10 Mbytes of extra space.
- Jumper caps: one cap for the Sun Blade X6250 server module or two caps for the Sun Blade X6450 server module
- A multi-port dongle cable



Caution – Do *not* use the remote keyboard and virtual mouse (RKVM) CD or diskette mount feature of the ILOM web GUI's Remote Control - Redirection application. You must use the procedures detailed in this chapter. For recovery procedures, see the appropriate recovery chapter in this manual for your server or server module.

▼ To Downgrade Sun Blade X6250 and X6450 Server Modules from ILOM to ELOM



Caution – The server module contains components that are extremely sensitive to static electricity. Before handling components, attach an ESD wrist strap to bare metal on the server module. To safely and properly perform the steps in this procedure, reference the Service Manual for your server.

1. Prepare a DOS-bootable USB flash drive, and copy *all* of the files from the `\firmware\ilom_to_elom\` on the Tools and Drivers CD to the USB flash drive.



Caution – For this procedure you *must* use the `socflash.exe` application that is included in the `\firmware\ilom_to_elom\` directory on the Tools and Drivers CD. Do not use the version contained in the upgrade directory.

2. Perform a graceful power off of the server module.
3. Remove the server module from the chassis (for proper removal procedures, see the *Service Manual* for your server).
4. Remove the server module cover (see the *Service Manual* for your server).
5. Do one of the following to short the jumpers on the MB:
 - For the Sun Blade X6250, use a jumper cap to short jumper J19.
 - For the Sun Blade X6450, use a jumper cap to short jumper J19 and jumper J44, and for revision 2 motherboards that do not contain low voltage DIMMs, move the jumper on J51 from pins 1 and 2 to pins 2 and 3.

For the location of the jumpers, see the service processor recovery procedures in the appropriate Service Manual.
6. With the pins shorted, install the server module cover, and insert the server into the chassis (for proper insertion procedures, see the *Service Manual* for your server).
7. Connect the multi-port dongle cable to the UCP port on the front of the server.
8. Connect the terminal or terminal-emulation device to the multi-port dongle cable.
9. Insert the DOS-bootable USB flash drive into one of the USB ports on the multi-port cable.

10. Power on the server module by pressing the Power button.

You *must* press the power button when the server module is jumpered. The server module will not automatically power on when jumpered. Additionally, when the jumpers are in place and the server module powered on, the amber Fault LED is lit.

11. Watch the screen, and when the prompted, press F8.

12. Select to boot the server using the DOS-bootable USB flash drive.

The server boots to DOS, and a DOS prompt appears:
>

13. At the DOS prompt, enter the following command to downgrade the SP:

- For the Sun Blade X6250:
> **socflash elom-v054.bin backup.bin**
- For the Sun Blade X6450:
> **socflash elom-v028.bin backup.bin**

14. When the DOS prompt returns, enter the following command to flash the BIOS:

- For the Sun Blade X6250:
> **Afudos 1ADPI040.ROM /P /B /K /X /C**
- For the Sun Blade X6450:
> **Afudos S95_3A08.ROM /P /B /K /X /C**

15. When the DOS prompt returns, remove the multi-port cable from the UCP connector.

16. Remove the server module from the chassis.

17. Remove the server module cover.

Use ESD protection.

18. Remove the jumper caps.

19. Install the cover, and insert the server module into chassis.

The server module does not contain any configuration settings. To access and configure your server module, see the *Embedded Lights Out Manager Administration Guide*.

20. Before you can use the server, you must use the web GUI to clear the event log:

- a. **Log in to the web GUI using a browser.**
- b. **Click the System Monitoring tab.**

- c. The System Monitoring submenu screen appears.
- d. Click the Event Logs tab.
- e. Select the option to clear event logs.
- f. To exit the web GUI, click the logout button.

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