



Integrated Lights Out Manager (ILOM) Supplement for Sun Fire™ X4600 and Sun Fire X4600 M2 Servers

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Preface

This supplement contains information for using Integrated Lights Out Manager (ILOM) with the Sun Fire X4600/X4600 M2 server.

Introduction

Note – The information in this chapter applies to the original Sun Fire X4600 server, and to the Sun Fire X4600 M2 server, unless otherwise noted in the text.

ILOM documentation is divided into two categories:

- Generalized ILOM information, located in the *Integrated Lights Out Manager (ILOM) Administration Guide*, 819-1160.
- Information specific to the Sun Fire X4600/X4600 M2 server, located in this supplement.

This document provides information about the following server hardware topics:

- [“Server Locate LED” on page 1](#)
- [“Hardware Port Locations” on page 1](#)
- [“How to Reset the Service Processor and BIOS Passwords” on page 3](#)
- [“Temperature, Voltage, and Fan Sensors” on page 3](#)

Before You Read This Document

It is important that you review the safety guidelines in the *Sun Fire X4600 and Sunfire X4600 M2 Server Safety and Compliance Guide* (819-4348).

Documentation and Updates

This section describes the documentation and updates available for the Sun Fire X4600/X4600 M2 server.

Product Updates

For product updates that you can download for the Sun Fire X4600/X4600 M2 server, go to the following URL, and then navigate to the page for this product:
<http://www.sun.com/servers/index.jsp>

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

Related Documentation

For a description of the document set for the Sun Fire X4600/X4600 M2 servers, 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 URLs:

For the Sun Fire X4600:

http://www.sun.com/products-n-solutions/hardware/docs/servers/x64_servers/x4600/index.html

For the Sun Fire X4600 M2:

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>

Using UNIX Commands

This document might not contain information about basic UNIX® commands and procedures such as shutting down the system, booting the system, and configuring devices. Refer to the following for this information:

- Software documentation that you received with your system
- Solaris™ Operating System documentation, which is located at:

<http://docs.sun.com>

Typographic Conventions

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

* The settings on your browser might differ from these settings.

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Hardware Information

This section provides information about the system hardware.

Server Locate LED

The Server Locate LEDs are a pair of small lights that you turn on to help you identify a specific server among many in a data center. One light is positioned on the front of the server in the upper-left corner, and the other light is on the back of the server in the lower-center section.

Hardware Port Locations

The ILOM communicates through the server's serial management port and through a dedicated Ethernet management port.

- [FIGURE 1](#) shows the location of the serial port and the Ethernet management port.
- [FIGURE 2](#) shows the serial port pin locations.
- [FIGURE 3](#) shows the Ethernet management port pin locations.

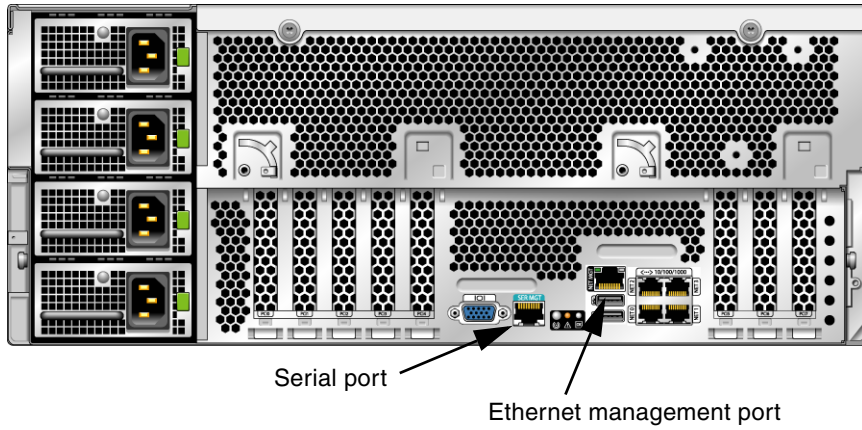


FIGURE 1 Sun Fire X4600/X4600 M2 Servers Rear Panel With Port Locations

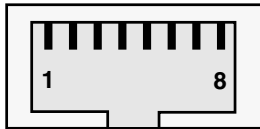


FIGURE 2 Serial Port Pin Locations

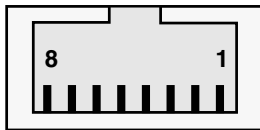


FIGURE 3 Ethernet Management Port Pin Locations

How to Reset the Service Processor and BIOS Passwords

A procedure in the *Sun Fire X4600 Server Service Manual*, 819-4342 causes the Service Processor to reset the administration password and to clear the BIOS password.

- The administration (root) password becomes `changeme`.
- The BIOS password is cleared, so that when you attempt to access the BIOS setup utility, it does not prompt for a password.

See the *Sun Fire X4600 Server Service Manual*, 819-4342 for further details about resetting these passwords.

Temperature, Voltage, and Fan Sensors

The Sun Fire X4600/X4600 M2 servers include a number of sensors that generate entries in the system event log (SEL) when the sensor crosses a threshold. Many of these readings are used to adjust the fan speeds and perform other actions, such as illuminating LEDs and powering off the chassis.

These sensors can also be configured to generate IPMI PET traps as described in the *Integrated Lights Out Manager (ILOM) Administration Guide 819-1160*.

Caution – Do not use any interface other than the ILOM CLI or WebGUI to alter the state or configuration of any sensor or LED. Doing so could void your warranty.

This section describes the sensors and provides details about their operation.

Chassis Sensors

sys.intsw

This sensor indicates the state of the Chassis Intrusion switch. When the chassis cover to the CPU area is opened this sensor logs an event.

Reading	State	Event	Description
0x0001	General chassis intrusion	Yes	The chassis intrusion switch has been activated.
0x0000		No	The chassis intrusion switch is inactive and has not been tripped.

sys.psfail

This sensor shows the current state of the Power supply fault LED on the front panel. It does not generate any events.

Reading	State	Event	Description
0x0001	Predictive Failure Deasserted	No	This state indicates that the front panel Power supply fault LED is OFF.
0x0002	Predictive Failure Asserted	No	This state indicates that the front panel Power supply fault LED is ON.

sys.tempfail

This shows the current state of the System overheat fault LED on the front panel. It does not generate any events.

Reading	State	Event	Description
0x0001	Predictive Failure Deasserted	No	This state indicates that the front panel System overheat fault LED is OFF.
0x0002	Predictive Failure Asserted	No	This state indicates that the front panel System overheat fault LED is ON. When active this means a temperature sensor is reading over critical threshold and the system might fail if the temperature continues to rise.

sys.fanfail

This shows the current state of the Front fan fault LED on the front panel. It does not generate any events.

Reading	State	Event	Description
0x0001	Predictive Failure Deasserted	No	This state indicates that the Front fan fault LED is OFF.
0x0002	Predictive Failure Asserted	No	This state indicates that the Front fan fault LED is ON. When active this means a front-accessible fan has failed and needs to be replaced. To determine which fan has failed, look for the fan with the amber fault LED that is ON.

Front and Back Panel Sensors

fp.prsnt

This sensor monitors the presence of the front panel indicator board.

Reading	State	Event	Description
0x0001	Device Absent	No	This state indicates that the front panel indicator board is absent.
0x0002	Device Present	No	This state indicates that the front panel indicator board is present.

sys.power

This shows the immediate state of the Power/OK LED on the both the front and back panels. It does not generate any events.

Reading	State	Event	Description
0x0001	State Deasserted	No	This state indicates that the front panel Power/OK LED is OFF.
0x0002	State Asserted	No	This indicates that the front panel Power/OK LED is ON.

sys.locate

This shows the immediate state of the Locate LED on both the front and back panels. It does not generate any events.

Reading	State	Event	Description
0x0001	State Deasserted	No	This state indicates that the Locate LED is OFF.
0x0002	State Asserted	No	This state indicates that the Locate LED is ON.

sys.locate.btn

This sensor monitors whether the front and back panel locate buttons have been pushed.

Reading	State	Event	Description
0x0001	State Deasserted	No	This state indicates that both the front and back panel Locate button are not pushed.
0x0002	State Asserted	Yes	This state indicates that either the front or back Locate button is pushed.

sys.alert

This shows the immediate state of the Service action required LED on both the front and back panels. It does not generate any events.

Reading	State	Event	Description
0x0001	State Deasserted	No	This state indicates that the front panel Service action required LED is OFF.
0x0002	State Asserted	No	This state indicates that the front panel Service action required LED is ON.

Motherboard Temperature Sensors

mb.t_amb0, mb.t_amb1 and mb.t_amb2

These three sensors monitor the ambient temperature from the internal temperature sensor chip on the corresponding motherboard.

These temperature sensors are monitored and will affect the state of the front panel LEDs. However, they are not used to control fan speed and are not used to turn off system power when they are non-recoverable.

Threshold	Direction	Event	Description	Action
Upper Non-Critical	Assert	No	Temperature has increased above non-critical threshold	System overheat fault LED is OFF. Service action required LED is OFF.
Upper Non-Critical	Deassert	No	Temperature has returned to normal from non-critical	System overheat fault LED is OFF. Service action required LED is OFF.
Upper Critical	Assert	Yes	Temperature has returned to non-critical from critical	System overheat fault LED is ON. Service action required LED is SLOW.
Upper Critical	Deassert	Yes	Temperature has increased above critical threshold	System overheat fault LED is OFF. Service action required LED is OFF.
Upper Non-Recoverable	Assert	Yes	Temperature has increased above non-recoverable threshold	System overheat fault LED is ON. Service action required LED is SLOW.
Upper Non-Recoverable	Deassert	Yes	Temperature has returned to critical from non-recoverable	System overheat fault LED is ON. Service action required LED is SLOW.

Power Supply Sensors

Because the Sun Fire X4600/X4600 M2 servers can include four power supplies, there are four of each power supply sensor. *X* indicates a power supply number from 0 to 3.

psX.prsnt

This sensor indicates whether the corresponding power supply is present.

Reading	State	Event	Description
0x0001	Device Absent	Yes	Power Supply 0 is absent.
0x0002	Device Present	Yes	Power Supply 0 is present.

psX.vinok

This sensor indicates whether the corresponding power supply is connected to AC power.

Reading	State	Event	Description	Action
0x0001	State Deasserted	Yes	Power supply is disconnected from AC power.	Power supply fault LED is ON. Service action required LED is SLOW.
0x0002	State Asserted	Yes	Power supply is connected to AC power.	Power supply fault LED is OFF. Service action required LED is OFF.

psX.pwrok

This sensor indicates whether the corresponding power supply is turned on and powering the system.

Reading	State	Event	Description
0x0001	State Deasserted	Yes	Power supply is off. If this supply is off while <i>psX.pwrok</i> is on then, it is considered a fault and: - Power supply fault LED is ON. - Service action required LED is SLOW.
0x0002	State Asserted	Yes	Power Supply <i>X</i> is ON.

I/O Sensors

io.prsnt

This sensor monitors the 4-disk HDD backplane presence signal.

Reading	State	Event	Description
0x0001	Device Absent	No	This state indicates that the 4-disk HDD backplane is not present.
0x0002	Device Present	No	This state indicates that the 4-disk HDD backplane is present.

io.hddX.fail

This sensor shows the state of the corresponding hard disk drive fault LED.

Because the Sun Fire X4600/X4600 M2 servers can include four hard drives, there are four sensors. *X* indicates a hard drive number from 0 to 3.

Reading	State	Event	Description
0x0001	Predictive Failure Deasserted	No	This state indicates that the corresponding HDD Fault LED is OFF.
0x0002	Predictive Failure Asserted	Yes	This state indicates that the corresponding HDD Fault LED is ON.

Fan Sensors

Because the Sun Fire X4600/X4600 M2 servers can include four fan trays, there are four sensors. X indicates a fan tray number from 0 to 3.

ftX.fm0.prsnt

This sensor indicates the presence of the corresponding fan tray.

Reading	State	Event	Description
0x0001	Device Absent	Yes	This state indicates that the corresponding fan tray is absent.
0x0002	Device Present	Yes	This state indicates that the corresponding fan tray is present.

ftX.fm0.f0.speed

All top-accessible fan speed sensors are configured to generate the same events, and all faults are handled in the same way. They are not monitored when the server is powered off.

This sensor monitors the speed of the fan at the corresponding fan tray module, Fan Module 0, Fan 0.

Threshold	Direction	Event	Description	Action
Lower Non-Recoverable	Assert	Yes	Fan speed has decreased below lower non-recoverable threshold. This indicates that the fan has failed or has been removed.	Front fan fault LED is ON. Service action required LED is SLOW.
Lower Non-Recoverable	Deassert	Yes	Fan speed has returned to normal from lower non-recoverable. This indicates that the fan has returned to normal or has been replaced.	Front fan fault LED is OFF. Service action required LED is OFF.

ftX.fm0.fail

This is an LED indicator sensor that shows the state of the corresponding fan tray's fault LED. It is illuminated for fan threshold events.

Reading	State	Event	Description
0x0001	Predictive Failure Deasserted	No	This state indicates that the fan tray X LED is OFF.
0x0002	Predictive Failure Asserted	Yes	This state indicates that the fan tray X LED is ON. It is illuminated in response to fan threshold events.

CPU Sensors

The system can have up to eight CPUs. The corresponding sensors are numbered 0 through 7, represented in the sensor names (below) with an *X*.

Because the CPUs in the system are attached to removable CPU modules, the internal numbering assigned to the CPUs by the system BIOS and SP does not always correspond to the same physical slot lettering, depending on the number of CPU modules that are installed.

Note – See the *Sun Fire X4600 and Sun Fire X4600 M2 Servers Service Manual*, 819-4342 for physical slot lettering and CPU module numbering designations for supported configurations.

pX.prsnt

This sensor monitors the presence of the CPUs.

Reading	State	Event	Description
0x0001	Device Absent	No	This state indicates that the CPU is absent, or there is a filler card at the slot.
0x0002	Device Present	No	This state that the CPU is present.

pX.cardok

This monitors the card-ok signal from CPU module.

Reading	State	Event	Description
0x0001	State Deasserted	No	This state indicates that the CPU module is functional.
0x0002	State Asserted	No	This state indicates that the CPU module is not functional.

pX.fail

This is a LED indicator sensor that shows the state of the corresponding CPU module attention LED. It is illuminated for CPU voltage and temperature events.

Reading	State	Event	Description
0x0001	Predictive Failure Deasserted	No	This state indicates that the corresponding CPU module attention LED is OFF.
0x0002	Predictive Failure Asserted	Yes	This state indicates that the corresponding CPU module attention LED is ON. It is illuminated in response to a CPU voltage or CPU temperature event. When active, the Service action required LED should be SLOW blinking and either the Power supply fault LED or the System overheat fault LED should be ON to indicate which type of event has occurred.

pX.dY.fail

There are 4 DIMMS per CPU module. Y can be 0 through 3.

This is an LED indicator sensor that shows the state of the corresponding DIMM fault LED, which is illuminated in response to ECC errors. This DIMM is part of PAIR 0 that also includes `p0.d1.fail` as part of the same 128-bit ECC memory pair. Both LEDs in the same pair will be illuminated at the same time when one indicates a fault.

Reading	State	Event	Description
0x0001	Predictive Failure Deasserted	No	This state indicates that the corresponding DIMM Fault LED is OFF.
0x0002	Predictive Failure Asserted	Yes	This state indicates that the corresponding DIMM fault LED is ON.

CPU Module [0 through 7] Fan Control Temperature Sensors

Temperature sensors in this category are used as inputs to the fan control algorithm and will also be used to turn the system power off if they are non-recoverable. Their state also affects the state of the front panel LEDs. There are up to eight CPU modules. There are two temperature sensors on each CPU module, one for air intake and one for CPU core.

Because the CPUs in the system are attached to removable CPU modules, the internal numbering assigned to the CPUs by the system BIOS and SP does not always correspond to the same physical slot lettering, depending on the number of CPU modules that are installed.

Note – See the *Sun Fire X4600 and Sun Fire X4600 M2 Servers Service Manual*, 819-4342 for physical slot lettering and CPU module numbering designations for supported configurations.

pX.t_amb

This sensor monitors the ambient temperature from an LM87 chip on the CPU module. It is not monitored when the server is powered off. X represents a CPU module from 0 to 7.

Threshold	Direction	Event	Description	Action
Upper Non-Critical	Assert	No	Front panel ambient temperature has increased above non-critical threshold.	System overheat fault LED is OFF. Service action required LED is OFF.
Upper Non-Critical	Deassert	No	Front panel ambient temperature has returned to normal from non-critical.	System overheat fault LED is OFF. Service action required LED is OFF.
Upper Critical	Assert	Yes	Front panel ambient temperature has increased above critical threshold.	System overheat fault LED is ON. Service action required LED is SLOW.
Upper Critical	Deassert	Yes	Front panel ambient temperature has returned to non-critical from critical.	System overheat fault LED is OFF. Service action required LED is OFF.
Upper Non-Recoverable	Assert	Yes	Front panel ambient temperature has increased above non-recoverable threshold.	System overheat fault LED is ON. Service action required LED is SLOW. System Power is turned OFF.
Upper Non-Recoverable	Deassert	Yes	Front panel ambient temperature has returned to critical from non-recoverable.	System overheat fault LED is ON. Service action required LED is SLOW.

pX.t_core

These sensors monitor the CPU core temperature from LM87 chip on the CPU module. They are not monitored when the server is powered off. X represents a CPU from 0 to 7.

Threshold	Direction	Event	Description	Action
Upper Non-Critical	Assert	No	CPU die temperature has increased above non-critical threshold.	System overheat fault LED is OFF. CPU module attention LED is OFF. Service action required LED is OFF.
Upper Non-Critical	Deassert	No	CPU die temperature has returned to normal from non-critical.	System overheat fault LED is OFF. CPU module attention LED is OFF. Service action required LED is OFF.
Upper Critical	Assert	Yes	CPU die temperature has increased above critical threshold.	System overheat fault LED is ON. CPU module attention LED is ON. Service action required LED is SLOW.
Upper Critical	Deassert	Yes	CPU die temperature has returned to non-critical from critical.	System overheat fault LED is OFF. CPU module attention LED is OFF. System Alert LED is OFF.
Upper Non-Recoverable	Assert	Yes	CPU die temperature has increased above non-recoverable threshold.	System overheat fault LED is ON. CPU module attention LED is ON. Service action required LED is SLOW. System power is turned OFF.
Upper Non-Recoverable	Deassert	Yes	CPU die temperature has returned to critical from non-recoverable.	System overheat fault LED is ON. CPU module attention LED is ON. Service action required LED is SLOW.

CPU Voltage Sensors

The Sun Fire X4600/X4600 M2 servers support up to eight CPU modules numbered 0 through 7.

All CPU 0 voltage sensors are configured to generate the same events, and faults are handled in the same way.

pX.v_+2v5

This sensor monitors the CPU +2.5V core input. It is not monitored when the server is powered off.

pX.v_core

This sensor monitors the CPU core programmable output. It is not monitored when the server is powered off.

pX.v_+3v3aux_r

This sensor monitors the CPU +3.3V auxiliary (aux) input.

pX.v_+12v

This sensor monitors the CPU +12V core input. It is not monitored when the server is powered off.

pX.v_+3v3led (Sun Fire X4600)

pX.v_+0v3vtt (Sun Fire X4600 M2)

This sensor monitors the CPU +3.3v LED input. It is not monitored when the server is powered off.

pX.v_+1v2

This sensor monitors the CPU +1.2V core input. It is not monitored when the server is powered off.

pX.v_+1v25core (Sun Fire X4600)

pX.v_+1v8 (Sun Fire X4600 M2)

This sensor monitors the CPU +1.25V core input. It is not monitored when the server is powered off.

Threshold	Direction	Event	Description	Action
Lower Non-Critical	Assert	Yes	CPU voltage has decreased below lower non-critical threshold.	Power supply fault LED is ON. CPU module attention LED is ON. Service action required LED is SLOW.
Lower Non-Critical	Deassert	Yes	CPU voltage has returned to normal from lower non-critical.	Power supply fault LED is OFF. CPU module attention LED is OFF. Service action required LED is OFF.
Lower Critical	Assert	Yes	CPU voltage has decreased below lower critical threshold.	Power supply fault LED is ON. CPU module attention LED is ON. Service action required LED is SLOW.
Lower Critical	Deassert	Yes	CPU voltage has returned to lower non-critical from lower critical.	Power supply fault LED is ON. CPU module attention LED is ON. Service action required LED is SLOW.
Lower Non-Recoverable	Assert	Yes	CPU voltage has decreased below lower non-recoverable threshold.	Power supply fault LED is ON. CPU module attention LED is ON. Service action required LED is SLOW.
Lower Non-Recoverable	Deassert	Yes	CPU voltage has returned to lower critical from lower non-recoverable.	Power supply fault LED is ON. CPU module attention LED is ON. Service action required LED is SLOW.
Upper Non-Critical	Assert	Yes	CPU voltage has increased above upper non-critical threshold.	Power supply fault LED is ON. CPU module attention LED is ON. Service action required LED is SLOW.
Upper Non-Critical	Deassert	Yes	CPU voltage has returned to normal from upper non-critical.	Power supply fault LED is OFF. CPU module attention LED is OFF. System Alert LED is OFF.
Upper Critical	Assert	Yes	CPU voltage has increased above upper critical threshold.	Power supply fault LED is ON. CPU module attention LED is ON. Service action required LED is SLOW.

Threshold	Direction	Event	Description	Action
Upper Critical	Deassert	Yes	CPU voltage has returned to upper non-critical from upper critical.	Power supply fault LED is ON. CPU module attention LED is ON. Service action required LED is SLOW.
Upper Non-Recoverable	Assert	Yes	CPU voltage has increased above upper non-recoverable threshold.	Power supply fault LED is ON. CPU module attention LED is ON. Service action required LED is SLOW.
Upper Non-Recoverable	Deassert	Yes	CPU voltage has returned to upper critical from upper non-recoverable.	Power supply fault LED is ON. CPU module attention LED is ON. Service action required LED is SLOW.

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