



Sun™ Integrated Lights Out Manager (ILOM) 3.0 Supplement for Sun Fire™ X2270 Server

Sun Microsystems, Inc.
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Preface

The *Sun Integrated Lights Out Manager (ILOM) 3.0 Supplement for Sun Fire X2270 Server* provides information about using Sun™ Integrated Lights Out Manager (ILOM) with the Sun Fire™ X2270 Server.

ILOM documentation is divided into two categories:

- Generalized ILOM information, located in the Sun Integrated Lights Out Manager (ILOM) 3.0 Documentation Collection. For details, see “[Related Documentation](#)” on page vi.
- Information specific to the Sun Fire X2270 Server, located in this Supplement.

Product Updates

For product updates that you can download for the Sun Fire X2270 Server, visit the following web site:

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

Find the Hardware Drivers section and click x64 Servers & Workstations. The Sun Fire X2270 Server site contains updates for firmware and drivers, as well as CD-ROM .iso images.

Related Documentation

Refer to the following table to identify other documentation that is currently available for the Sun Fire X2270. You can access these documents online at:

<http://docs.sun.com/app/docs/prod/sf.2270>

| Title | Content | Part Number | Format |
|---|---|--------------------|-----------------------------|
| <i>Sun Fire X2270 Server Product Notes</i> | Late-breaking information about the server. | 820-5608 | PDF HTML |
| <i>Sun Fire X2270 Server Getting Started Guide</i> | Basic installation information for setting up the server. | 820-5610 | PDF Print |
| <i>Sun Fire X2270 Server Installation Guide</i> | Detailed installation information for setting up the server. | 820-5604 | PDF HTML Print option |
| <i>Sun Fire X2270 Server Linux and Solaris Operating Systems Installation Guide</i> | Installation instructions for the Linux and Solaris operating systems. | 820-5606 | PDF HTML |
| <i>Sun Fire X2270 Server Windows Operating System Installation Guide</i> | Installation instructions for the Windows Server operating system. | 820-7143 | PDF HTML |
| <i>Sun Installation Assistant for Windows and Linux User's Guide</i> | Instructions for using the Sun Installation Assistant to install Windows and Linux operating systems. | 820-3357 | PDF HTML |
| <i>Sun Fire X2270 Server Service Manual</i> | Information and procedures for maintaining and upgrading the server. | 820-5607 | PDF HTML |
| <i>Sun x64 Servers Diagnostics Guide</i> | Information for diagnosing and troubleshooting the server. | 820-6750 | PDF HTML |
| <i>x64 Servers Utilities Reference Manual</i> | Information for using applications and utilities common to x64 servers and server modules. | 820-1120 | PDF HTML |
| <i>Sun Integrated Lights Out Manager (ILOM) 3.0 Getting Started Guide</i> | Information for initial setup and login to ILOM. | 820-5523 | PDF HTML |

| Title | Content | Part Number | Format |
|--|---|--------------------|---------------|
| <i>Sun Integrated Lights Out Manager (ILOM) 3.0 Concepts Guide</i> | ILOM conceptual information for features and tasks that are common to servers and server modules that support ILOM. | 820-6410 | PDF HTML |
| <i>Sun Integrated Lights Out Manager (ILOM) 3.0 Web Interface Procedures Guide</i> | ILOM procedures that can be performed using the ILOM web interface. | 820-6411 | PDF HTML |
| <i>Sun Integrated Lights Out Manager (ILOM) 3.0 CLI Procedures Guide</i> | ILOM procedures that can be performed using the ILOM command-line interface. | 820-6412 | PDF HTML |
| <i>Sun Integrated Lights Out Manager (ILOM) 3.0 SMNP and IPMI Procedures Guide</i> | SMNP and IPMI procedures that can be performed using the ILOM web or command-line interfaces. | 820-6413 | PDF HTML |
| <i>Sun Integrated Lights Out Manager (ILOM) 3.0 Supplement for Sun Fire X2270 Server</i> | ILOM information that is specific to the server. | 821-0039 | PDF HTML |
| <i>Sun Fire X2270 Server Safety and Compliance Guide</i> | Hardware safety and compliance information for the server. | 820-5605 | PDF |
| <i>Important Safety Information for Sun Hardware Systems</i> | Multilingual hardware safety and compliance information for all Sun hardware systems. | 816-7190 | Print |

Translated versions of some of these documents are available at the web site described above in French, Japanese, and Simplified Chinese. English documentation is revised more frequently and might be more up-to-date than the translated documentation.

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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 at:

<http://docs.sun.com>

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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, enter <code>rm filename</code> . |

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

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Sun Integrated Lights Out Manager (ILOM) 3.0 Supplement for Sun Fire X2270 Server
(821-0039-10).

ILOM Feature Set

This chapter provides a brief overview about ILOM, as well as defines the purpose of ILOM's common and platform features offered in ILOM 3.0. The following topics are discussed in this chapter:

- [“ILOM Overview” on page 1](#)
 - [“Supported Platform Firmware” on page 2](#)
 - [“Supported ILOM 3.0 Feature Set” on page 2](#)
 - [“Platform-Specific Features” on page 2](#)
-

ILOM Overview

Integrated Lights Out Manager (ILOM) is system management firmware that is preinstalled on all x64-based servers and some SPARC® servers. ILOM enables you to actively manage and monitor components installed on your server. ILOM provides a browser-based interface and a command-line interface (CLI), as well as SNMP and IPMI interfaces. For general information about ILOM's use and capabilities, see the Sun Integrated Lights Out Manager (ILOM) 3.0 Documentation Collection. For details, see [“Related Documentation” on page vi](#).

Note – For information about establishing a first-time connection to ILOM on your server service processor (SP), see [“Setting Up the Sun Fire X2270 Server Software”](#) in the *Sun Fire X2270 Installation Guide* (820-5604).

Supported Platform Firmware

TABLE 1-1 identifies the supported ILOM and BIOS firmware versions supported on the Sun Fire X2270 Server.

TABLE 1-1 Supported Platform Firmware

| ILOM SP Version | Host BIOS Version | Application Hardware |
|-----------------|-------------------|-----------------------|
| 2.0.3.8 | 1.0.3 | Sun Fire X2270 Server |
| 3.0.3.35 | 1.0.5 | Sun Fire X2270 Server |

Supported ILOM 3.0 Feature Set

With the exception of chassis monitoring module (CMM) features, all ILOM 3.0 firmware features are supported on the Sun Fire X2270 Server. In addition, the server supports platform-specific features offered in ILOM as of ILOM 3.0.3.35.

For information about the use of the ILOM 3.0 feature set, see the Sun Integrated Lights Out Manager (ILOM) 3.0 Documentation Collection. For details, see [“Related Documentation” on page vi](#).

Platform-Specific Features

ILOM 3.0 operates on many platforms, supporting features that are common to all platforms. Some ILOM 3.0 features belong to a subset of platforms and not to all. This ILOM Supplement describes the features that belong to the Sun Fire X2270 Server, augmenting the set of features described in the Sun Integrated Lights Out Manager (ILOM) 3.0 Documentation Collection.

[Chapter 2](#) of this Supplement provides detailed information about the ILOM platform features supported on the Sun Fire X2270 Server.

ILOM Platform Features for Sun Fire X2270 Server

This chapter contains information about ILOM's platform-specific features supported on the Sun Fire X2270 Server.

The following topics are covered in this chapter:

- [“Hardware Information” on page 4](#)
- [“Switch Serial Port Output Between SP and Host Console” on page 5](#)
- [“Clear Server Faults” on page 7](#)
- [“ILOM Sideband Management” on page 8](#)
- [“Run IPMITool From the Host” on page 12](#)
- [“Update ILOM Firmware Using the IPMIflash Utility” on page 13](#)
- [“Sensors” on page 14](#)
- [“View Sensors From the System BIOS” on page 28](#)

Note – The platform features described in this chapter for the Sun Fire X2270 Server are supported in addition to the features supported in ILOM 3.0 that are common for all x64-based servers.

Hardware Information

This section provides information about the system hardware, including:

- “Server Locator Indicator” on page 4
- “Hardware Port Locations” on page 4

Server Locator Indicator

The Server Locator indicator comprises 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

ILOM communicates through the server’s serial management port and through a network management Ethernet port. Use [FIGURE 2-1](#) and [TABLE 2-1](#) to find the location of the serial port and the network management Ethernet port on the Sun Fire X2270 Server.

FIGURE 2-1 Sun Fire X2270 Back Panel Port Locations

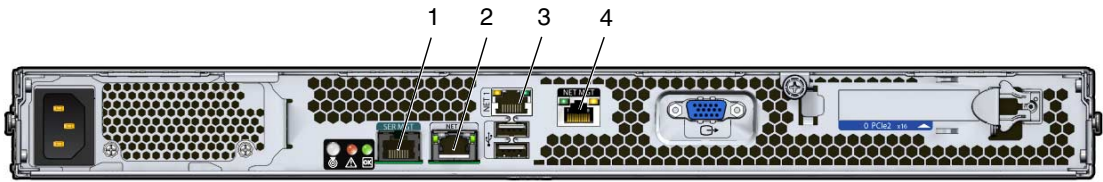


TABLE 2-1 Sun Fire X2270 Back Panel Port Locations

| Label | Connector/Slot | Label | Connector/Slot |
|-------|--|-------|--|
| 1 | Serial Management (SER MGT) / RS-232-F RJ-45 serial port | 3 | Gigabit Ethernet port (NET-1) |
| 2 | Gigabit Ethernet port (NET-0) | 4 | Network Management (NET MGT) Ethernet port (available only in systems that contain an SP module) |

Switch Serial Port Output Between SP and Host Console

You can switch the serial port output of the Sun Fire X2270 Server between the SP console (NET MGT) and the host console (COM1). By default, the SP console is connected to the system serial port. This feature is beneficial for Windows kernel debugging, as it enables you to view non-ASCII character traffic from the host console.

You can switch serial port output using either the ILOM web interface or the ILOM command-line interface (CLI). For instructions, see the following sections:

- [“Switch Serial Port Output Using the Web Interface” on page 5](#)
- [“Switch Serial Port Output Using the CLI” on page 6](#)



Caution – You should set up the network on the SP before attempting to switch the serial port owner to the host server. If a network is not set up, and you switch the serial port owner to the host server, you will be unable to connect via the CLI or web interface to change the serial port owner back to the SP. To change the serial port owner back to the SP, you must perform the procedures in “Restoring ILOM Access to the Serial Console” in the *Sun Fire X2270 Server Service Manual* (820-5607).

▼ Switch Serial Port Output Using the Web Interface

1. **Log in to the ILOM web interface.**
2. **Select Configuration → Serial Port.**
The Serial Port Settings page appears.

ABOUT

Role (User): Administrator (root) SP Hostname : SUNSP00144FCA1F6A

Sun™ Integrated Lights Out Manager

System Information System Monitoring Configuration User Management

System Management Access Alert Management Network Serial Port

Serial Port Settings

The serial port setting determines the flowrate of data from the serial port on the external c
baud rate to the same speed as serial port 0 or /dev/ttyS0 on the external device connecte
opened over the serial port.

Serial Port Sharing

⚠ This setting control whether the external serial port is electrically connected to the Hos
port. All serial port settings will be that of the Host Server.

Owner: Service Processor
Service Processor
Host Server

External Serial Host Server

Baud Rate: 9600

Flow Control: none

Save

3. Click the Owner drop-down list and select Host Server as the desired serial port owner.

The drop-down list allows you to select either Service Processor or Host Server.

By default, Service Processor is selected.

4. Click Save for your change to take effect.

▼ Switch Serial Port Output Using the CLI

1. Log in to the ILOM CLI.
2. To set the serial port owner, type:
 - > **set /SP/serial/portsharing owner=host**
 - By default, owner=SP.

Clear Server Faults

When a server component fails, the server generates a component-specific fault that is captured by the ILOM SP. Some faults are cleared automatically when the failed component is replaced, but faults generated for components that are *not* hot-pluggable have to be cleared manually. You can use either the ILOM web interface or the command-line interface (CLI) to manually clear faults.

For the Sun Fire X2270 Server, the following types of faults must be cleared manually after the faulty component is replaced:

- Fan faults
- DIMM faults
- CPU faults
- Motherboard faults
- PCIe faults

When clearing faults, give consideration to the following:

- When clearing fan faults, note that the FRU is `/SYS`, not `/SYS/Fn`, where *n* designates the component number (1, 2, 3, etc.).
- When clearing faults for memory DIMMs, note the DIMM faults can be either system wide (`/SYS/MB`) or on a per DIMM basis (`/SYS/MB/Pn/Dn`).
- PCIe faults can cover one or more of the following components: `/SYS/MB/NETn` and `/SYS/MB/RISERn/PCIEn`.

The procedure for clearing a fault differs depending on the type of fault:

- To clear DIMM, CPU, motherboard, and PCIe faults, access the server's ILOM SP and clear the fault for the failed component. For information on how to use the ILOM web interface, see the *Sun Integrated Lights Out Manager (ILOM) 3.0 Web Interface Procedures Guide* (820-6411); for information on how to use the CLI to clear server faults, see the *Sun Integrated Lights Out Manager (ILOM) 3.0 CLI Procedures Guide* (820-6412).

ILOM Sideband Management

By default, you connect to the server's service processor (SP) using the out-of-band network management port (NET MGT). The ILOM sideband management feature enables you to select either the NET MGT port or one of the server's Gigabit Ethernet ports (NET 0, 1), which are in-band ports, to send and receive ILOM commands to and from the server SP. In-band ports are also called sideband ports.

The advantage of using a sideband management port to manage the server's SP is that one less cable connection and one less network session is needed. In configurations where a great number of servers are being managed, such as data centers, sideband management can represent a significant savings in hardware and network utilization.

Note – Connectivity to the server SP might be lost when the SP management port configuration is changed while you are connected to the SP using a network connection, such as SSH, web, or Sun ILOM Remote Console.

You can configure sideband management using either the web interface or the command-line interface (CLI). For instructions, see the following sections:

- [“Configure Sideband Management Using the Web Interface” on page 9](#)
- [“Configure Sideband Management Using the CLI” on page 10](#)

Special Considerations for Sideband Management

When sideband management is enabled in ILOM, the following conditions might occur:

- In-chip connectivity between the SP and the host operating system might not be supported by the on-board host Gigabit Ethernet controller. If this condition occurs, use a different port or route to transmit traffic between the source and destination targets instead of using L2 bridging/switch.
- Server host power cycles might cause a brief interruption of network connectivity for server Gigabit Ethernet ports (NET 0, 1) that are configured for sideband management. You should configure the adjacent switch/bridge ports as host ports. Note that if the ports are configured as switch ports and participate in the Spanning Tree Protocol (STP), you might experience longer outages due to spanning tree recalculation.

▼ Configure Sideband Management Using the Web Interface

1. Log in to the ILOM web interface.
2. Select **Configuration** → **Network**.

The Network Settings page appears.

The screenshot shows the Sun Integrated Lights Out Manager web interface. At the top, there's a header with 'ABOUT', 'Role (User): Administrator (root)', and 'SP Hostname:'. Below this is the title 'Sun™ Integrated Lights Out Manager'. A navigation bar contains tabs for 'System Information', 'System Monitoring', 'Configuration', and 'User'. Under 'Configuration', there are sub-tabs for 'System Management Access', 'Alert Management', 'Network', and 'Ser'. The 'Network' sub-tab is selected, and the page title is 'Network Settings'. Below the title, there's a description: 'View the MAC address and configure network settings for the Service Processor IP address. Select the radio button next to the appropriate mode, then enter settings.' The form includes fields for 'MAC Address:', 'Obtain an IP Address Automatically (use DHCP)' (with an unselected radio button), 'Use the Following IP Address' (with a selected radio button), 'IP Address:', 'Subnet Mask:', 'Gateway:', 'Management Port:' (with a dropdown menu showing '/SYS/SP/NET0'), 'Out Of Band MAC Address:', and 'Sideband MAC Address:'. A 'Save' button is at the bottom.

3. In the Network Settings page, do the following:
 - a. Select DHCP to acquire the IP address automatically or specify the appropriate IP address.
 - b. To select a sideband management port, click the Management Port drop-down list and select the desired management port.

The drop-down list allows you to select either of the Gigabit Ethernet ports, /SYS/SP/NET n , where n is 0 or 1.

The SP NET MGT port, /SYS/SP/NET0, is the default.
4. Click **Save** for the changes to take effect.

▼ Configure Sideband Management Using the CLI

1. Log in to the ILOM CLI using the SP's serial console port.

For instructions, see the *Sun Fire X2270 Server Installation Guide* (820-5604).

The ILOM CLI prompt appears (->).

2. To show the current port settings, type:

-> **show /SP/network**

The network properties appear. For example:

```
/SP/network
Targets:
Properties:
  commitpending = (Cannot show property)
  dhcp_server_ip = none
  ipaddress = xx.xx.xx.xx
  ipdiscovery = static
  ipgateway = xx.xx.xx.xx
  ipnetmask = xx.xx.xx.xx
  macaddress = 11.11.11.11.11.86
  managementport = /SYS/SP/NET0
  outofbandmacaddress = 11.11.11.11.11.86
  pendingipaddress = xx.xx.xx.xx
  pendingipdiscovery = static
  pendingipgateway = xx.xx.xx.xx
  pendingipnetmask = xx.xx.xx.xx
  pendingmanagementport = /SYS/SP/NET0
  sidebandmacaddress = 11.11.11.11.11.87
  state = enabled
```

In the above output, the current active MAC address (macaddress) is the same as the SP's out-of-band MAC address (outofbandmacaddress), and the current active management port (managementport) is set to the default (/SYS/SP/NET0).

3. To set the SP management port to a sideband port, type the following commands:

-> **set /SP/network pendingmanagementport=/SYS/MB/NET n**

Where n equals 0 or 1.

-> **set commitpending=true**

4. To view the change, type:

-> **show /SP/network**

The network properties appear and show that the change has taken effect. For example:

```
/SP/network
Targets:
Properties:
  commitpending = (Cannot show property)
  dhcp_server_ip = none
  ipaddress = xx.xx.xx.xx
  ipdiscovery = static
  ipgateway = xx.xx.xx.xx
  ipnetmask = xx.xx.xx.xx
macaddress = 11.11.11.11.11.87
managementport = /SYS/MB/NETn
  outofbandmacaddress = 11.11.11.11.11.86
  pendingipaddress = xx.xx.xx.xx
  pendingipdiscovery = static
  pendingipgateway = xx.xx.xx.xx
  pendingipnetmask = xx.xx.xx.xx
pendingmanagementport = /SYS/MB/NETn
sidebandmacaddress = 11.11.11.11.11.87
  state = enabled
```

In the above output, the macaddress matches the sidebandmacaddress, and the managementport matches the pendingmanagementport.

Run IPMItool From the Host

The network management (NET MGT) interface enables you to use the host operating system to execute `ipmitool` commands on the ILOM service processor. Using `ipmitool` commands, you can perform server initialization, monitoring, and maintenance tasks from the host operating system.

Note – The latest version of `ipmitool` is available on the Sun Fire X2270 Server Tools & Drivers CD.

The Sun Fire X2270 Server supports in-band systems management using IPMI v1.5 or 2.0 with the NET MGT interface and the IPMI kernel driver. IPMI is an industry-supported standard for performing autonomous platform management functions.

You can run `ipmitool` commands on Solaris, Linux, and Windows Server operating systems. For a description of the `ipmitool` commands and options, see the `ipmitool` manpage on the web at:

<http://ipmitool.sourceforge.net/manpage.html>

For a listing of the present server components, SP event log entries, or SP information on the network interface card (NIC), use the following `ipmitool` commands that are appropriate for your server operating system.

- For Solaris and Linux:

```
# ipmitool -I interface sdr list
# ipmitool -I interface sel list
# ipmitool -I interface lan print 1
```

Where *interface* is `bmc` on Solaris systems and `open` on Linux systems.

- For Windows Server 2003/2008:

```
# ipmitool -I ms sdr list
# ipmitool -I ms sel list
# ipmitool -I ms lan print 1
```

If you are using a Solaris or Linux operating system, refer to *Remote Monitoring of Sun x64 Systems Using IPMITOOL and IPMIEVD* (820-1011) for `ipmitool` installation and user instructions. This document is available on the web at:

<http://www.sun.com/blueprints/0107/820-1011.pdf>

If you are using a Windows Server 2003 R2 operating system, install the optional Windows Hardware Management interface driver. For instructions on how to install this driver, refer to *Hardware Management in Microsoft Windows Server 2003 R2 RC0* and perform the procedure “How to Enable the Hardware Management Feature.” It is not necessary to perform any of the other procedures described in this document, such as “Configuration and Security.” This document is available on the web at:

<http://www.microsoft.com/technet/scriptcenter/preview/wsm/enable.msp#ECB>

Additional information about IPMI, including the `ipmitool` manpage and detailed specifications, is available on the web at the following locations:

<http://ipmitool.sourceforge.net/manpage.html>

<http://openipmi.sourceforge.net>

<http://www.intel.com/design/servers/ipmi/spec.htm>

Update ILOM Firmware Using the IPMIflash Utility

The IPMIflash utility, provided on the Tools & Drivers CD, provides the ability to update the ILOM service processor firmware and BIOS remotely over the management network or locally from the server. This utility is available for Linux and Solaris operating systems. Refer to the *Sun Integrated Lights Out Manager (ILOM) 3.0 SNMP and IPMI Procedures Guide* (820-6413) for more information and instructions for updating ILOM firmware using the IPMIflash utility.

Sensors

The Sun Fire X2270 Server includes several 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 *Sun Integrated Lights Out Manager (ILOM) 3.0 SNMP and IPMI Procedures Guide* (820-6413).



Caution – Do not use any interface other than the Integrated Lights Out Manager CLI or web interface 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.

Temperature and Voltage Readings

The system monitors two temperature sensors and fourteen voltage sensors. They all generate IPMI events that are logged in the system event log (SEL) when an upper threshold is exceeded. The temperature sensor readings are used to adjust the fan speeds. Any sensor outside a threshold will cause the SP to illuminate the service LEDs and possibly power off the server.

The sensors and their respective thresholds are as follows:

- Ambient temperature
 - Upper noncritical: 30 degrees C
 - Upper critical: 45 degrees C
 - Upper nonrecoverable: 52 degrees C
- Voltage
 - Upper noncritical: +/-10% V
 - Upper critical: +/-20% V
 - Upper nonrecoverable: +/-25% V

List of Sensors

TABLE 2-2 lists the sensors.

TABLE 2-2 List of Sensors

| Sensor ID |
|------------------|
| ACPI |
| /P0/PRSNT |
| /P1/PRSNT |
| /P0/D0/PRSNT |
| /P0/D1/PRSNT |
| /P0/D2/PRSNT |
| /P0/D3/PRSNT |
| /P0/D4/PRSNT |
| /P0/D5/PRSNT |
| /P1/D0/PRSNT |
| /P1/D1/PRSNT |
| /P1/D2/PRSNT |
| /P1/D3/PRSNT |
| /P1/D4/PRSNT |
| /P1/D5/PRSNT |
| /MB/T_AMB |
| MB/V_+12V |
| MB/V_+1V5 |
| MB/V_+3V3_STBY |
| MB/V_+3V3 |
| MB/V_+3V3_VBAT |
| MB/V_+1V5 |
| MB/P0/V_+1V8 |
| MB/P1/V_+1V8 |
| MB/P0/V_VTT |
| MB/P1/V_VTT |
| MB/P0/V_+1V5_DDR |

TABLE 2-2 List of Sensors (*Continued*)

| Sensor ID |
|------------------|
| MB/P1/V_+1V5_DDR |
| MB/P0/V_VCCP |
| MB/P1/V_VCCP |
| T_AMB |
| F0/TACH |
| F1/TACH |
| F2/TACH |

Sensor Details

[TABLE 2-3](#) provides detailed information about individual sensors.

TABLE 2-3 Sensor Details

| Sensor | Data |
|------------------------|---|
| Sensor ID | ACPI (0x0) |
| Entity ID | 7.0 |
| Sensor Type (Discrete) | System ACPI Power State |
| States Asserted | System ACPI Power State [S0/G0: working] |
| Sensor ID | /P0/PRSNT (0x1) |
| Entity ID | 3.0 |
| Sensor Type (Discrete) | Entity Presence |
| States Asserted | Availability State [Device Present] |
| Sensor ID | /P1/PRSNT (0x2) |
| Entity ID | 3.1 |
| Sensor Type (Discrete) | Entity Presence |
| States Asserted | Availability State [Device Absent] |

TABLE 2-3 Sensor Details (*Continued*)

| Sensor | Data |
|------------------------|---------------------------------------|
| Sensor ID | /P0/D0/PRSNT (0x3) |
| Entity ID | 32.0 |
| Sensor Type (Discrete) | Entity Presence |
| States Asserted | Availability State [Device Absent] |
| Sensor ID | /P0/D1/PRSNT (0x4) |
| Entity ID | 32.1 |
| Sensor Type (Discrete) | Entity Presence |
| States Asserted | Availability State [Device Absent] |
| Sensor ID | /P0/D2/PRSNT (0x5) |
| Entity ID | 32.2 |
| Sensor Type (Discrete) | Entity Presence |
| States Asserted | Availability State [Device Absent] |
| Sensor ID | /P0/D3/PRSNT (0x6) |
| Entity ID | 32.3 |
| Sensor Type (Discrete) | Entity Presence |
| States Asserted | Availability State [Device Absent] |
| Sensor ID | /P0/D4/PRSNT (0x7) |
| Entity ID | 32.4 |
| Sensor Type (Discrete) | Entity Presence |
| States Asserted | Availability State [Device Absent] |
| Sensor ID | /P0/D5/PRSNT (0x8) |

TABLE 2-3 Sensor Details (*Continued*)

| Sensor | Data |
|------------------------|---------------------------------------|
| Entity ID | 32.5 |
| Sensor Type (Discrete) | Entity Presence |
| States Asserted | Availability State [Device Absent] |
| Sensor ID | /P1/D0/PRSNT (0x9) |
| Entity ID | 32.6 |
| Sensor Type (Discrete) | Entity Presence |
| States Asserted | Availability State [Device Absent] |
| Sensor ID | /P1/D1/PRSNT (0xa) |
| Entity ID | 32.7 |
| Sensor Type (Discrete) | Entity Presence |
| States Asserted | Availability State [Device Absent] |
| Sensor ID | /P1/D2/PRSNT (0xb) |
| Entity ID | 32.8 |
| Sensor Type (Discrete) | Entity Presence |
| States Asserted | Availability State [Device Absent] |
| Sensor ID | /P1/D3/PRSNT (0xc) |
| Entity ID | 32.9 |
| Sensor Type (Discrete) | Entity Presence |
| States Asserted | Availability State [Device Absent] |
| Sensor ID | /P1/D4/PRSNT (0xd) |
| Entity ID | 32.10 |
| Sensor Type (Discrete) | Entity Presence |

TABLE 2-3 Sensor Details (*Continued*)

| Sensor | Data |
|------------------------|---------------------------------------|
| States Asserted | Availability State [Device Absent] |
| Sensor ID | /P1/D5/PRSNT (0xe) |
| Entity ID | 32.11 |
| Sensor Type (Discrete) | Entity Presence |
| States Asserted | Availability State [Device Absent] |
| Sensor ID | /MB/T_AMB (0xf) |
| Entity ID | 7.8 |
| Sensor Type (Analog) | Temperature |
| Sensor Reading | 22 (+/- 0) degrees C |
| Status | ok |
| Lower Non-Recoverable | -10.000 |
| Lower Critical | -5.000 |
| Lower Non-Critical | 0.000 |
| Upper Non-Critical | 50.000 |
| Upper Critical | 55.000 |
| Upper Non-Recoverable | 60.000 |
| Assertions Enabled | lnc- lcr- lnr- unc+ ucr+ unr+ |
| Deassertions Enabled | lnc- lcr- lnr- unc+ ucr+ unr+ |
| Sensor ID | MB/V_+12V (0x10) |
| Entity ID | 10.0 |
| Sensor Type (Analog) | Voltage |
| Sensor Reading | 12.033 (+/- 0) Volts |
| Status | ok |
| Lower Non-Recoverable | na |
| Lower Critical | 9.576 |
| Lower Non-Critical | 10.773 |

TABLE 2-3 Sensor Details (*Continued*)

| Sensor | Data |
|-----------------------|------------------------------|
| Upper Non-Critical | 13.167 |
| Upper Critical | 14.364 |
| Upper Non-Recoverable | na |
| Assertions Enabled | lnc- lcr- unc+ ucr+ |
| Deassertions Enabled | lnc- lcr- unc+ ucr+ |
| Sensor ID | MB/V_+5V (0x11) |
| Entity ID | 10.0 |
| Sensor Type (Analog) | Voltage |
| Sensor Reading | 5.122 (+/- 0) Volts |
| Status | ok |
| Lower Non-Recoverable | na |
| Lower Critical | 3.978 |
| Lower Non-Critical | 4.498 |
| Upper Non-Critical | 5.486 |
| Upper Critical | 5.980 |
| Upper Non-Recoverable | na |
| Assertions Enabled | lnc- lcr- unc+ ucr+ |
| Deassertions Enabled | lnc- lcr- unc+ ucr+ |
| Sensor ID | MB/V_+3V3_STBY (0x12) |
| Entity ID | 10.0 |
| Sensor Type (Analog) | Voltage |
| Sensor Reading | 3.251 (+/- 0) Volts |
| Status | ok |
| Lower Non-Recoverable | na |
| Lower Critical | 2.597 |
| Lower Non-Critical | 2.993 |
| Upper Non-Critical | 3.595 |
| Upper Critical | 3.887 |

TABLE 2-3 Sensor Details (*Continued*)

| Sensor | Data |
|-----------------------|------------------------------|
| Upper Non-Recoverable | na |
| Assertions Enabled | lnc- lcr- unc+ ucr+ |
| Deassertions Enabled | lnc- lcr- unc+ ucr+ |
| Sensor ID | MB/V_+3V3 (0x13) |
| Entity ID | 10.0 |
| Sensor Type (Analog) | Voltage |
| Sensor Reading | 3.371 (+/- 0) Volts |
| Status | ok |
| Lower Non-Recoverable | na |
| Lower Critical | 2.597 |
| Lower Non-Critical | 2.993 |
| Upper Non-Critical | 3.595 |
| Upper Critical | 3.887 |
| Upper Non-Recoverable | na |
| Assertions Enabled | lnc- lcr- unc+ ucr+ |
| Deassertions Enabled | lnc- lcr- unc+ ucr+ |
| Sensor ID | MB/V_+3V3_VBAT (0x14) |
| Entity ID | 10.0 |
| Sensor Type (Analog) | Voltage |
| Sensor Reading | 2.198 (+/- 0) Volts |
| Status | Lower Critical |
| Lower Non-Recoverable | na |
| Lower Critical | 2.591 |
| Lower Non-Critical | 2.999 |
| Upper Non-Critical | 3.595 |
| Upper Critical | 3.894 |
| Upper Non-Recoverable | na |
| Assertions Enabled | lnc- lcr- unc+ ucr+ |

TABLE 2-3 Sensor Details (*Continued*)

| Sensor | Data |
|-----------------------|----------------------------|
| Deassertions Enabled | lnc- lcr- unc+ ucr+ |
| Sensor ID | MB/V_+1V5 (0x15) |
| Entity ID | 10.0 |
| Sensor Type (Analog) | Voltage |
| Sensor Reading | 1.499 (+/- 0) Volts |
| Status | ok |
| Lower Non-Recoverable | na |
| Lower Critical | 1.192 |
| Lower Non-Critical | 1.345 |
| Upper Non-Critical | 1.640 |
| Upper Critical | 1.794 |
| Upper Non-Recoverable | na |
| Assertions Enabled | lnc- lcr- unc+ ucr+ |
| Deassertions Enabled | lnc- lcr- unc+ ucr+ |
| Sensor ID | MB/P0/V_+1V8 (0x16) |
| Entity ID | 10.0 |
| Sensor Type (Analog) | Voltage |
| Sensor Reading | 1.823 (+/- 0) Volts |
| Status | ok |
| Lower Non-Recoverable | na |
| Lower Critical | 1.431 |
| Lower Non-Critical | 1.617 |
| Upper Non-Critical | 1.980 |
| Upper Critical | 2.156 |
| Upper Non-Recoverable | na |
| Assertions Enabled | lnc- lcr- unc+ ucr+ |
| Deassertions Enabled | lnc- lcr- unc+ ucr+ |

TABLE 2-3 Sensor Details (*Continued*)

| Sensor | Data |
|-----------------------|----------------------------|
| Sensor ID | MB/P1/V_+1V8 (0x17) |
| Entity ID | 10.0 |
| Sensor Type (Analog) | Voltage |
| Sensor Reading | 1.823 (+/- 0) Volts |
| Status | ok |
| Lower Non-Recoverable | na |
| Lower Critical | 1.431 |
| Lower Non-Critical | 1.617 |
| Upper Non-Critical | 1.980 |
| Upper Critical | 2.156 |
| Upper Non-Recoverable | na |
| Assertions Enabled | lnc- lcr- unc+ ucr+ |
| Deassertions Enabled | lnc- lcr- unc+ ucr+ |
| Sensor ID | MB/P0/V_VTT (0x18) |
| Entity ID | 10.0 |
| Sensor Type (Analog) | Voltage |
| Sensor Reading | 1.109 (+/- 0) Volts |
| Status | ok |
| Lower Non-Recoverable | na |
| Lower Critical | 0.873 |
| Lower Non-Critical | 0.979 |
| Upper Non-Critical | 1.204 |
| Upper Critical | 1.310 |
| Upper Non-Recoverable | na |
| Assertions Enabled | lnc- lcr- unc+ ucr+ |
| Deassertions Enabled | lnc- lcr- unc+ ucr+ |
| Sensor ID | MB/P1/V_VTT (0x19) |
| Entity ID | 10.0 |

TABLE 2-3 Sensor Details (*Continued*)

| Sensor | Data |
|-----------------------|--------------------------------|
| Sensor Type (Analog) | Voltage |
| Sensor Reading | 1.109 (+/- 0) Volts |
| Status | ok |
| Lower Non-Recoverable | na |
| Lower Critical | 0.873 |
| Lower Non-Critical | 0.979 |
| Upper Non-Critical | 1.204 |
| Upper Critical | 1.310 |
| Upper Non-Recoverable | na |
| Assertions Enabled | lnc- lcr- unc+ ucr+ |
| Deassertions Enabled | lnc- lcr- unc+ ucr+ |
| Sensor ID | MB/P0/V_+1V5_DDR (0x1a) |
| Entity ID | 10.0 |
| Sensor Type (Analog) | Voltage |
| Sensor Reading | 1.510 (+/- 0) Volts |
| Status | ok |
| Lower Non-Recoverable | na |
| Lower Critical | 1.192 |
| Lower Non-Critical | 1.345 |
| Upper Non-Critical | 1.640 |
| Upper Critical | 1.794 |
| Upper Non-Recoverable | na |
| Assertions Enabled | lnc- lcr- unc+ ucr+ |
| Deassertions Enabled | lnc- lcr- unc+ ucr+ |
| Sensor ID | MB/P1/V_+1V5_DDR (0x1b) |
| Entity ID | 10.0 |
| Sensor Type (Analog) | Voltage |
| Sensor Reading | 1.510 (+/- 0) Volts |

TABLE 2-3 Sensor Details (*Continued*)

| Sensor | Data |
|-----------------------|----------------------------|
| Status | ok |
| Lower Non-Recoverable | na |
| Lower Critical | 1.192 |
| Lower Non-Critical | 1.345 |
| Upper Non-Critical | 1.640 |
| Upper Critical | 1.794 |
| Upper Non-Recoverable | na |
| Assertions Enabled | lnc- lcr- unc+ ucr+ |
| Deassertions Enabled | lnc- lcr- unc+ ucr+ |
| Sensor ID | MB/P0/V_VCCP (0x1c) |
| Entity ID | 10.0 |
| Sensor Type (Analog) | Voltage |
| Sensor Reading | 1.086 (+/- 0) Volts |
| Status | ok |
| Lower Non-Recoverable | na |
| Lower Critical | 0.791 |
| Lower Non-Critical | 0.897 |
| Upper Non-Critical | 1.097 |
| Upper Critical | 1.192 |
| Upper Non-Recoverable | na |
| Assertions Enabled | lnc- lcr- unc+ ucr+ |
| Deassertions Enabled | lnc- lcr- unc+ ucr+ |
| Sensor ID | MB/P1/V_VCCP (0x1d) |
| Entity ID | 10.0 |
| Sensor Type (Analog) | Voltage |
| Sensor Reading | 1.086 (+/- 0) Volts |
| Status | ok |
| Lower Non-Recoverable | na |

TABLE 2-3 Sensor Details (*Continued*)

| Sensor | Data |
|-----------------------|-----------------------|
| Lower Critical | 0.791 |
| Lower Non-Critical | 0.897 |
| Upper Non-Critical | 1.097 |
| Upper Critical | 1.192 |
| Upper Non-Recoverable | na |
| Assertions Enabled | lnc- lcr- unc+ ucr+ |
| Deassertions Enabled | lnc- lcr- unc+ ucr+ |
| Sensor ID | T_AMB (0xa5) |
| Entity ID | 7.0 |
| Sensor Type (Analog) | Temperature |
| Sensor Reading | 25 (+/- 0) degrees C |
| Status | ok |
| Lower Non-Recoverable | na |
| Lower Critical | na |
| Lower Non-Critical | na |
| Upper Non-Critical | na |
| Upper Critical | 45.000 |
| Upper Non-Recoverable | 50.000 |
| Assertions Enabled | ucr+ unr+ |
| Deassertions Enabled | ucr+ unr+ |
| Sensor ID | F0/TACH (0x1e) |
| Entity ID | 29.0 |
| Sensor Type (Analog) | Fan |
| Sensor Reading | 2900 (+/- 0) RPM |
| Status | ok |
| Lower Non-Recoverable | 200.000 |
| Lower Critical | na |
| Lower Non-Critical | 500.000 |

TABLE 2-3 Sensor Details (*Continued*)

| Sensor | Data |
|-----------------------|-----------------------|
| Upper Non-Critical | na |
| Upper Critical | na |
| Upper Non-Recoverable | na |
| Assertions Enabled | Inc- Inr- |
| Deassertions Enabled | Inc- Inr- |
| Sensor ID | F1/TACH (0x1f) |
| Entity ID | 29.0 |
| Sensor Type (Analog) | Fan |
| Sensor Reading | 5800 (+/- 0) RPM |
| Status | ok |
| Lower Non-Recoverable | 200.000 |
| Lower Critical | na |
| Lower Non-Critical | 500.000 |
| Upper Non-Critical | na |
| Upper Critical | na |
| Upper Non-Recoverable | na |
| Assertions Enabled | Inc- Inr- |
| Deassertions Enabled | Inc- Inr- |
| Sensor ID | F2/TACH (0x20) |
| Entity ID | 29.0 |
| Sensor Type (Analog) | Fan |
| Sensor Reading | 6000 (+/- 0) RPM |
| Status | ok |
| Lower Non-Recoverable | 200.000 |
| Lower Critical | na |
| Lower Non-Critical | 500.000 |
| Upper Non-Critical | na |
| Upper Critical | na |

TABLE 2-3 Sensor Details (*Continued*)

| Sensor | Data |
|-----------------------|-----------|
| Upper Non-Recoverable | na |
| Assertions Enabled | lnc- lnr- |
| Deassertions Enabled | lnc- lnr- |

View Sensors From the System BIOS

In Sun Fire X2270 Servers that *do not* contain a service processor, you can view sensor errors by accessing the system event log from the system BIOS. Sensor errors that are recorded include those for voltage, temperature, fans, and DIMM errors. System BIOS sensor errors are listed in [TABLE 2-4](#).

▼ View the System BIOS Event Log

1. During system boot, click F2 to enter the system BIOS.
2. Select Advanced → Event Log Configuration → View Event Log.

Note – Alternatively, if you want to view sensor information that is updated in real time, select Advanced → Event Log Configuration → Hardware Health Configuration.

TABLE 2-4 Sensors Listed in the System BIOS Event Log

| Sensor Type | Sensor ID |
|---------------------|---------------|
| Voltage | 3.3V Standby |
| | 3.3V Main |
| | +5V |
| | VCCP |
| | +12V |
| | -12V |
| | A-in0 |
| | A-in1 |
| | A-in2 |
| | A-in3 |
| | A-in4 |
| | A-in5 |
| | A-in6 |
| | A-in7 |
| Temperature Fans | VBAT |
| | Temperature |
| | CPU Fan Speed |
| | SYS Fan Speed |
| | AUX Fan Speed |
| | CPU Fan Speed |
| | SYS Fan Speed |
| | AUX Fan Speed |
| | CPU Fan Speed |
| | SYS Fan Speed |
| DIMM Errors | Correctable |
| | Uncorrectable |

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