Sun™ Integrated Lights Out Manager (ILOM) 2.0 Supplement for Sun Fire™ X2270 Server

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Contents

Preface

The *Sun Integrated Lights Out Manager 2.0 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 2.0 User's Guide* (820-1188) and the *Addendum to the Sun Integrated Lights Out Manager 2.0 User's Guide* (820-4198).

- 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
Sun Fire X2270 Server Product Notes	Late-breaking information about the server.	820-5608	PDF HTML
Sun Fire X2270 Server Getting Started Guide	Basic installation information for setting up the server.	820-5610	PDF Print
Sun Fire X2270 Server Installation Guide	Detailed installation information for setting up the server.	820-5604	PDF HTML Print option
Sun Fire X2270 Server Linux and Solaris Operating Systems Installation Guide	Installation instructions for the Linux and Solaris operating systems.	820-5606	PDF HTML
Sun Fire X2270 Server Windows Operating System Installation Guide	Installation instructions for the Windows Server operating system.	820-7143	PDF HTML
Sun Installation Assistant for Windows and Linux User's Guide	Instructions for using the Sun Installation Assistant to install a Windows and Linux operating systems.	820-3357	PDF HTML
Sun Fire X2270 Server Service Manual	Information and procedures for maintaining and upgrading the server.	820-5607	PDF HTML
Sun x64 Servers Diagnostics Guide	Information for diagnosing and troubleshooting the server.	820-6750	PDF HTML
x64 Servers Utilities Reference Manual	Information for using applications and utilities common to x64 servers and server modules.	820-1120	PDF HTML
Sun Integrated Lights Out Manager 2.0 User's Guide	ILOM features and tasks that are common to servers and server modules that support ILOM.	820-1188	PDF HTML

Title	Content	Part Number	Format
Sun Integrated Lights Out Manager (ILOM) 2.0 Supplement for Sun Fire X2270 Server	ILOM information that is specific to the server.	820-5609	PDF HTML
Sun Fire X2270 Server Safety and Compliance Manual	Hardware safety and compliance information for the server.	820-5605	PDF
Important Safety Information for Sun Hardware Systems	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.

Documentation, Support, and Training

Sun Function	URL
Sun Documentation	http://docs.sun.com
Support	http://www.sun.com/support/
Training	http://www.sun.com/training/

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

Third-Party Web Sites

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Typographic Conventions

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

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

Sun Welcomes Your Comments

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http://www.sun.com/hwdocs/feedback

Please include the following document title and part number with your feedback:

Sun Integrated Lights Out Manager (ILOM) 2.0 Supplement for Sun Fire X2270 Server (820-5609-11).

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 2.0. The following topics are discussed in this chapter:

- "ILOM Overview" on page 1
- "Supported Platform Firmware" on page 2
- "Supported ILOM 2.0 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. ILOM enables you to actively manage and monitor components installed on your server. ILOM provides a browser-based interface and a command-line interface, as well as SNMP and IPMI interfaces. For general information about ILOM's use and capabilities, see the *Sun Integrated Lights Out Manager 2.0 User's Guide* (820-1188).

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
2.0.2.8	1.0
2.0.2.18	1.07
2.0.2.20	1.12

Supported ILOM 2.0 Feature Set

With the exception of chassis monitoring module (CMM) features, all ILOM 2.0 firmware features are supported on the Sun Fire X2270 Server. In addition, it supports platform-specific features offered in ILOM as of ILOM 2.0.2.20.

For information about the use of the ILOM 2.0 feature set, see the *Sun Integrated Lights Out Manager 2.0 User's Guide* (820-1188) or the *Addendum to the Sun Integrated Lights Out Manager 2.0 User's Guide* (820-4198).

Platform-Specific Features

ILOM 2.0 operates on many platforms, supporting features that are common to all platforms. Some ILOM 2.0 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 2.0 User's Guide* and its Addendum.

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:

Note – The platform features described in this chapter for the Sun Fire X2270 Server are supported in addition to the features supported in ILOM 2.0 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 is 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
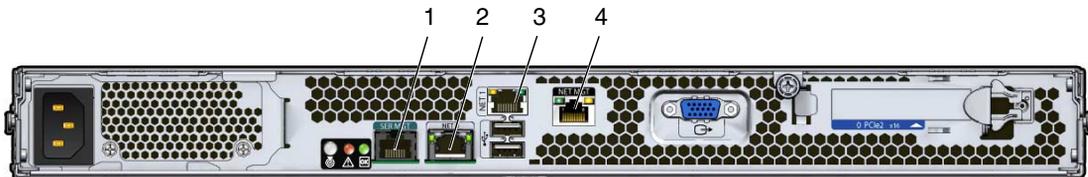
TABLE 2-1   Sun Fire X2270 Back Panel Port Locations

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 interface 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*.

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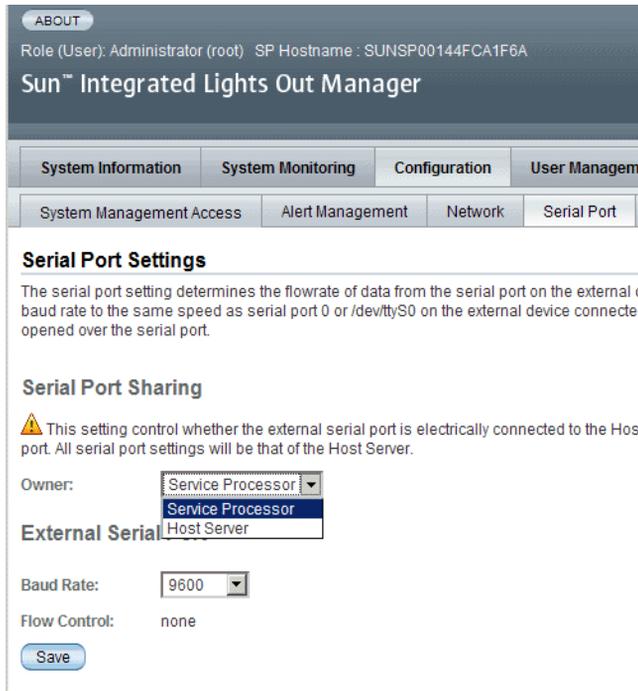
3. **Click the Owner drop-down list and select Host Server as the desired serial port owner.**

   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

To switch the serial port output using the ILOM CLI, perform the following steps:

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/F`*n*, 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/P`*n*`/D`*n*).
- PCIe faults can cover one or more of the following components: `/SYS/MB/NET`*n* and `/SYS/MB/RISER`*n*`/PCIE`*n.*

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 or the CLI to clear server faults, see the *Sun Integrated Lights Out Manager 2.0 User's Guide* (820-1188).

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, the command-line interface (CLI), the BIOS. 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.
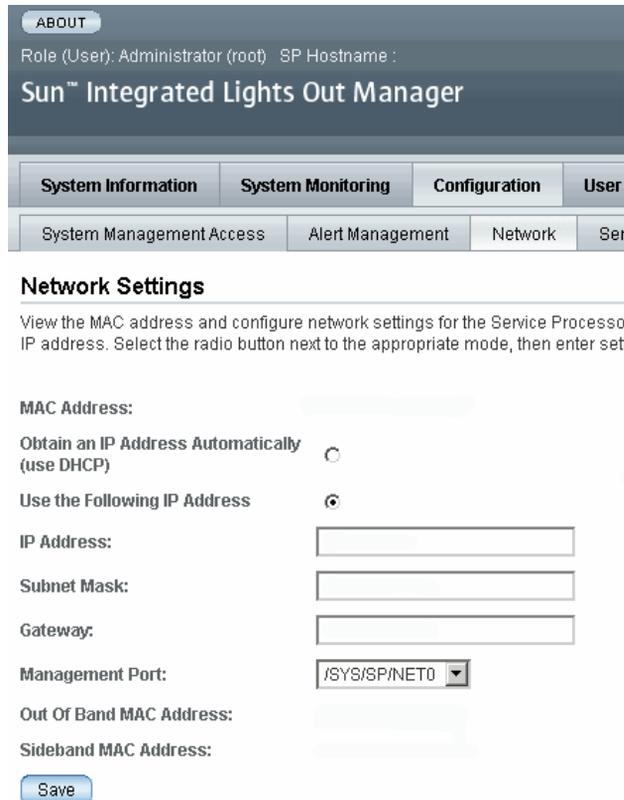
3. In the Network Settings page, do the following:

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) or the *Sun Integrated Lights Out Manager 2.0 User's Guide* (820-1188).

   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
.mspx#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 *Addendum to the Sun Integrated Lights Out Manager 2.0 User's Guide* (820-4198) 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 2.0 User's Guide* (820-1188).

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	lnc- lnr-
Deassertions Enabled	lnc- lnr-
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	lnc- lnr-
Deassertions Enabled	lnc- lnr-
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
	VBAT
Temperature	Temperature
Fans	CPU Fan Speed
	SYS Fan Speed
	AUX Fan Speed
	CPU Fan Speed
	SYS Fan Speed
	AUX Fan Speed
DIMM Errors	Correctable
	Uncorrectable

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