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Preface

The Sun Integrated Lights Out Manager (ILOM) 3.0 Supplement for Sun Blade X6240 Server Module provides information about using Sun™ Integrated Lights Out Manager (ILOM) with the Sun Blade™ X6240 Server Module.

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 vii.
- Information specific to the Sun Blade X6240 Server Module, located in this Supplement.

Related Documentation

The documents listed in the following table are available online at:

http://docs.sun.com

At that site, search for the Sun Blade X6240 Server Module.

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<td>Late-breaking information about the server module.</td>
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<td>Sun Blade X6240 Server Module Getting Started Guide</td>
<td>Basic installation information for setting up the server module.</td>
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<tr>
<td>x64 Servers Utilities Reference Manual</td>
<td>Information for using applications and utilities common to x64 servers and server modules.</td>
<td>820-1120</td>
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<td>Sun Integrated Lights Out Manager 2.0 User’s Guide</td>
<td>ILOM features and tasks that are common to servers and server modules that support ILOM 2.0.</td>
<td>820-1188</td>
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<td>Sun Integrated Lights Out Manager Supplement for Sun</td>
<td>ILOM information that is specific to the server module.</td>
<td>820-3974</td>
<td>PDF HTML</td>
</tr>
<tr>
<td>Blade X6240 Server Module</td>
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<td>Sun Integrated Lights Out Manager (ILOM) 3.0</td>
<td>Information for the initial setup of ILOM 3.0, conceptual information, and procedures that can be performed using the ILOM web interface, command-line interface, and industry-standard management protocols.</td>
<td>820-5523 820-6410 820-6411 820-6412 820-6413</td>
<td>PDF HTML</td>
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<td>Documentation Collection</td>
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<td></td>
<td></td>
</tr>
<tr>
<td>Sun Blade X6240 Server Module Safety and Compliance</td>
<td>Hardware safety and compliance information for the server module.</td>
<td>820-4411</td>
<td>PDF</td>
</tr>
<tr>
<td>Manual</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Important Safety Information for Sun Hardware</td>
<td>Multilingual hardware safety and compliance information for all Sun hardware systems.</td>
<td>816-7190 816-7191 816-7192</td>
<td>Print</td>
</tr>
<tr>
<td>Systems</td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

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.
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

<table>
<thead>
<tr>
<th>Typeface</th>
<th>Meaning</th>
<th>Examples</th>
</tr>
</thead>
<tbody>
<tr>
<td>AaBbCc123</td>
<td>The names of commands, files, and directories; on-screen computer output</td>
<td>Edit your .login file.</td>
</tr>
<tr>
<td></td>
<td></td>
<td>Use ls -a to list all files.</td>
</tr>
<tr>
<td></td>
<td></td>
<td>% You have mail.</td>
</tr>
<tr>
<td>AaBbCc123</td>
<td>What you type, when contrasted with on-screen computer output</td>
<td>% su</td>
</tr>
<tr>
<td></td>
<td></td>
<td>Password:</td>
</tr>
<tr>
<td>AaBbCc123</td>
<td>Book titles, new words or terms, words to be emphasized. Replace command-line variables with real names or values.</td>
<td>Read Chapter 6 in the User’s Guide.</td>
</tr>
<tr>
<td></td>
<td></td>
<td>These are called class options.</td>
</tr>
<tr>
<td></td>
<td></td>
<td>You must be superuser to do this.</td>
</tr>
<tr>
<td></td>
<td></td>
<td>To delete a file, type rm filename.</td>
</tr>
</tbody>
</table>
Note – Characters display differently depending on browser settings. If characters do not display correctly, change the character encoding in your browser to Unicode UTF-8.

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

Sun Integrated Lights Out Manager (ILOM) 3.0 Supplement for Sun Blade X6240 Server Module (821-0745-10).
Sun ILOM 3.0 Supplement for Sun Blade X6240 Server Module

This supplement contains information for using Integrated Lights Out Manager (ILOM) 3.0 with the Sun Blade X6240 Server Module. This document provides information about the following topics:

- “Sun Blade Modular System Hardware” on page 1
- “Resetting the Service Processor and BIOS Passwords” on page 10
- “Temperature, Voltage, and Fan Sensors” on page 10

Sun Blade Modular System Hardware

The Sun Blade X6240 Server Module is installed in the Sun Blade 6000 Modular System. The Modular System consists of a chassis with fans, power supplies, networking hardware, and space for up to ten server modules. The server modules are installed in the modular system chassis.

The Server Locator Indicators (also called the Locate LED buttons) are small lights that you turn on to help you identify a specific server among many in a data center. The Server Locator Indicator is positioned on the front of the server in the upper-left corner section.
Managing the Sun Blade Server Module With ILOM

Sun Integrated Lights Out Manager (ILOM) is system management firmware that you can use to monitor, manage, and configure a Sun Blade server module. The ILOM firmware is preinstalled on the service processor (SP) of each Sun Blade server module and initializes as soon as you apply power to the system. You can access ILOM through several interfaces, such as web browsers, a command-line interface (CLI), a Simple Network Management Protocol (SNMP) interface, and an Intelligent Platform Management Interface (IPMI). ILOM will continue to run regardless of the state of the host operating system, making it a “lights-out” management system.

For information about configuring and using ILOM, refer to the Sun Integrated Lights Out Manager 3.0 Documentation Collection. The ILOM 3.0 Documentation Collection is available at: http://docs.sun.com/app/docs/prod/int.lights.mgr30#hic

Service Processor

The service processor (SP) is the ILOM firmware. It has its own Internet Protocol (IP) address and media access control (MAC) address and is capable of operating regardless of the state of the other system hardware. In a Sun Blade server module, the SP can operate whether the server module is fully operational, powered down, or in standby mode.

Chassis Monitoring Module

The Sun Blade Modular System, or chassis, has its own service processor, called a chassis monitoring module (CMM). CMM ILOM is a modified version of ILOM firmware that is preinstalled for the SP.

ILOM on the Server Module SP and CMM

ILOM supports two ways to manage a system: using the CMM or using the server module’s SP directly.

- Using the CMM SP – Managing the system from the CMM enables you to set up and manage components throughout the entire chassis system, as well as to manage an individual server module SP.
■ **Using the Server Module SP** – Managing the SP on a Sun Blade server module enables you to manage operations on an individual server module. This approach might be useful when troubleshooting a specific service processor, controlling access to a specific server module, or installing operating system software to a specific server module.

---

### Connecting to ILOM

You can establish communication with the ILOM Server Module SP through a local or remote console.

- **Local console.** Connect a serial console to the local serial management port on the server module or chassis monitoring module (CMM).

- **Remote console.** Attach a local area Ethernet network cable to the network management port on the CMM.

For instructions on connecting a local serial console or attaching an Ethernet cable, refer to the *Sun Blade X6240 Server Module Installation Guide* (820-3968).

The type of connection you establish to ILOM determines which type of system management tasks you can perform. For example, to remotely access the full range of system management functionality in ILOM, you will require an Ethernet connection to the CMM and an IP assignment for the CMM and the server module SP.

You can connect to the ILOM on your server module using one of the following methods:

- Option 1 – When the server module is installed in a chassis, it is automatically connected to the same subnet as the CMM ILOM. This enables you to use Ethernet to connect to both the web GUI and the command-line interface (CLI).

  **Note** – The CMM ILOM in the chassis has an Ethernet switch that supports connections to the server modules and their ILOMs. To use this connection, you must be connected to the same subnet as the CMM ILOM, and you must know the Ethernet address of the server module ILOM.

- Option 2 – Use the serial connector on the chassis to connect to the chassis CMM ILOM. Then use the CMM ILOM to navigate to the server module. This connection supports CLI access only.

- Option 3 – Use a dongle cable to establish a serial connection directly to the server module. This connection supports CLI access only.

The following sections describe each of these methods.
Connecting to ILOM Through the Chassis Ethernet Port (Option 1)

Typically, you connect to ILOM through the Ethernet. When the server module is installed in the chassis, its ILOM is automatically accessible on the same subnet as the CMM ILOM.

If you do not know ILOM’s IP address, find it as described in “Finding ILOM’s IP Address” on page 4.

You can connect to ILOM using a Secure Shell (SSH) to connect to the command-line interface (CLI), or using a browser to connect to the web interface.

- To connect to the CLI, see “Connecting to the ILOM CLI” on page 5.
- To connect to the web interface, see “Connecting to the ILOM Web Interface” on page 6.

Finding ILOM’s IP Address

To find ILOM’s IP address:

1. **Log in to the CMM ILOM.**
   See the Sun Integrated Lights Out Manager 3.0 Documentation Collection for details.

2. **Type the command:**
   ```
   -> show /CH/BLn/SP/network
   ```
   Where \( n \) is 0 through 9 for server modules 0 through 9, respectively.
3. The CLI displays information about the server module, including its IP address.

For example:

```
-> show /CH/BL0/SP/network

/CH/BLn/SP/network
  Targets:

  Properties:
     type = Network Configuration
     commitpending = (Cannot show property)
     ipaddress = IPAddress
     ipdiscovery = dhcp
     ipgateway = IPgateway
     ipnetmask = 255.255.252.0
     macaddress = Macaddress
     pendingipaddress = Ipaddress
     pendingipdiscovery = dhcp
     pendingipgateway = IPgateway
     pendingipnetmask = 255.255.252.0

  Commands:
     cd
     set
     show

->
```

▼ Connecting to the ILOM CLI

1. Start your SSH client.

2. To log in to ILOM, type:
   ```
   $ ssh root@ipaddress
   ```
   Where ipaddress is the address of the server SP.

3. Type your password when prompted.
   The default password is changeme.
   The CLI command prompt appears.
▼ Connecting to the ILOM Web Interface

1. Type the IP address of the server SP into your web browser.
   The web interface Login screen appears.

2. Type your user name and password.
   When you first try to access the web interface, it prompts you to type the default user name and password. The default user name and password are:
   ■ Default user name: root
   ■ Default password: changeme

   The default user name and password are in lowercase characters.

3. Click Log In.
   The ILOM web interface appears.

4. To log out of the web interface, click the Log Out button.
   The Log Out screen appears.
   Do not use the Log Out button in your web browser to log out from the web interface.

▼ Connecting to ILOM Through the Chassis Serial Connector (Option 2)

The chassis serial connector connects to the chassis CMM ILOM. The CMM ILOM provides a command to connect to the server module ILOM(s).

1. Connect a serial cable from the serial port on the chassis to a terminal device.
   The terminal device can be an actual terminal, a laptop running a terminal emulator, or a terminal server. It must be set to the following:
   ■ 8N1: eight data bits, no parity, one stop bit
   ■ 9600 baud (default, can be set to any standard rate up to 57600)
   ■ Disable software flow control (XON/XOFF)
   ■ Disable hardware flow control (CTS/RTS)
The cable requires the following pin assignments.

<table>
<thead>
<tr>
<th>Pin</th>
<th>Signal Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>Request To Send (RTS)</td>
</tr>
<tr>
<td>2</td>
<td>Data Terminal Ready (DTR)</td>
</tr>
<tr>
<td>3</td>
<td>Transmit Data (TXD)</td>
</tr>
<tr>
<td>4</td>
<td>Ground</td>
</tr>
<tr>
<td>5</td>
<td>Ground</td>
</tr>
<tr>
<td>6</td>
<td>Receive Data (RXD)</td>
</tr>
<tr>
<td>7</td>
<td>Data Carrier Detect (DCD)</td>
</tr>
<tr>
<td>8</td>
<td>Clear To Send (CTS)</td>
</tr>
</tbody>
</table>

### 2. Press Enter on the terminal device.

This establishes the connection between the terminal device and the CMM ILOM.

The CMM ILOM login prompt appears.

```
SUNCMMnnnnnnnnnnn login:
```

The first string in the prompt is the default host name. It consists of the prefix `SUNCMM` and the CMM ILOM's MAC address.

### 3. Log in to the CMM ILOM.

The default user is `root` and the default password is `changeme`.

Once you have successfully logged in, the CMM ILOM displays the ILOM default command prompt:

```
->
```

### 4. Navigate to `/CH/BLn/SP/cli`.

Where `n` is 0 through 9 for server modules 0 through 9 respectively.

### 5. Enter the command `start`.

A confirmation prompt appears.

### 6. Enter `y` to continue or `n` to cancel.

If you entered `y`, the server module ILOM prompts for its password.
Note – The CMM ILOM logs on to the server module ILOM using the user name in
/CH/BLn/SP/cli/user (where n is the server module number). The default is root.

7. Enter the ILOM password.
   The ILOM CLI for the server module appears. You are now connected to the
   server module ILOM.

8. When you are done, type exit.
   The server module ILOM exits and the CMM ILOM CLI prompt appears.

The following display shows an example of this procedure.

```
-> cd /CH/BL2/SP/cli
/CH/BL2/SP/cli

-> start
Are you sure you want to start /CH/BL2/SP/cli (y/n)? y
Password: Type the password to the CMM ILOM.

Sun(TM) Integrated Lights Out Manager

Version 3.0

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Warning: password is set to factory default.

-> exit Type this command to exit the server module ILOM and return to the
   CMM ILOM.
   Connection to 10.6.153.33 closed.
```

▼ Connecting to ILOM Through a Dongle Cable
(Option 3)

A dongle cable enables you to connect a terminal directly to the ILOM. FIGURE 1-1
shows a dongle cable connected to a server module.

1. Connect a dongle cable directly to the server module.
2. Connect a terminal or terminal emulator to the RJ-45 connector on the dongle cable.
   The RJ-45 connector is labelled “2” in FIGURE 1-1.
   The CLI login prompt appears.

3. Enter the user name and password when prompted.
   The default username is root and the default password is changeme.
   The CLI prompt appears.

FIGURE 1-1 shows the dongle cable.

FIGURE 1-1  Dongle Cable
The connectors are:

1. Dual USB connector (keyboard/mouse)
2. 10/100 Mbit Ethernet. Use this connector to connect to the ILOM.
3. VGA Video Connector

---

**Resetting the Service Processor and BIOS Passwords**

A procedure in the *Sun Blade X6240 Server Module Service Manual* (820-3971) describes how to reset the service processor and BIOS passwords.

- 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.

---

**Temperature, Voltage, and Fan Sensors**

The server module includes 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.

**Note** – Fan and power supply sensors represent fans and power supplies in the chassis, not in the server module.

You can also configure sensors to generate IPMI PET traps as, described in the *Sun Integrated Lights Out Manager 3.0 Documentation Collection*.

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

**Caution** – Do not use any interface other than the ILOM CLI or web interface to alter the state or configuration of any sensor or LED. Doing so could void your warranty.
“Sensor List” on page 11 lists the sensors. “Sensor Details” on page 12 provides details about each sensor.

Sensor List

Board Sensors
- SLOTID
- ACPI
- CMM/PRSNT
- CMM/ERR
- NEMn/PRSNT
- NEMn/ERR
- NEMn/STATE
- PEMn/PRSNT

Motherboard Temperature Sensors
- MB/T_AMBn

Motherboard Voltage Sensors
- MB/V_BAT
- MB/V/+3V3AUX
- MB/V/+3V3
- MB/V/+5V
- MB/V/+12V
- MB/V/+2V5
- MB/V/+1V5
- MB/V/+1V2

Power Supply Sensors
- PSn/PRSNT
- PSn/Sn/V_IN_ERR
- PSn/Sn/V_OUT_OK
- SYS/VPS

HDD Sensors
- HDDn/PRSNT
- HDDn/ERR
- HDDn/STATE
Fan Sensors
- FMn/Fy/TACH
- FMn/ERR

CPU n Sensors
- Pn/PRSNT

CPU n Fan Control Temperature Sensors
- Pn/T_CORE

Server Module Sensors
- BLn/PRSNT
- BLn/ERR
- BLn/STATE

Sensor Details
The following sections provide detailed information about the sensors.

SLOTID
This is a sensor indicating which slot the server module is installed in. Values are from 0 to 9 for the Sun Blade 6000 Modular System; values are from 0 to 11 for the Sun Blade 6048 Modular System.

ACPI
This sensor indicates the system ACPI (Advanced Configuration and Power Interface) state.

<table>
<thead>
<tr>
<th>TABLE 1-2</th>
<th>ACPI</th>
</tr>
</thead>
<tbody>
<tr>
<td>Reading</td>
<td>State</td>
</tr>
<tr>
<td>0x0001</td>
<td>S0/G0</td>
</tr>
<tr>
<td>0x0002</td>
<td>S5/G2</td>
</tr>
</tbody>
</table>
CMM/PRSNT

This is a sensor indicating whether CMM ILOM is present.

**TABLE 1-3**  CMM/PRSNT

<table>
<thead>
<tr>
<th>Reading</th>
<th>State</th>
<th>Event</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>0x0001</td>
<td>Device Absent</td>
<td>Yes</td>
<td>CMM ILOM is absent.</td>
</tr>
<tr>
<td>0x0002</td>
<td>Device Present</td>
<td>Yes</td>
<td>CMM ILOM is present.</td>
</tr>
</tbody>
</table>

CMM/ERR

This is a sensor indicating whether CMM ILOM has failed.

**TABLE 1-4**  CMM/ERR

<table>
<thead>
<tr>
<th>Reading</th>
<th>State</th>
<th>Event</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>0x0001</td>
<td>State Deasserted</td>
<td>Yes</td>
<td>CMM ILOM has failed.</td>
</tr>
<tr>
<td>0x0002</td>
<td>State Asserted</td>
<td>Yes</td>
<td>CMM ILOM has not failed.</td>
</tr>
</tbody>
</table>

NEMn/PRSNT

These two presence sensors indicate whether the corresponding network express module (NEM) is present.

**TABLE 1-5**  NEMn/PRSNT

<table>
<thead>
<tr>
<th>Reading</th>
<th>State</th>
<th>Event</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>0x0001</td>
<td>Device Absent</td>
<td>Yes</td>
<td>NEM is absent.</td>
</tr>
<tr>
<td>0x0002</td>
<td>Device Present</td>
<td>Yes</td>
<td>NEM is present.</td>
</tr>
</tbody>
</table>
NEM\textsubscript{n}/ERR

These two presence sensors indicate whether the corresponding network express module (NEM) has failed.

TABLE 1-6 \textbf{NEM\textsubscript{n}/ERR}

<table>
<thead>
<tr>
<th>Reading</th>
<th>State</th>
<th>Event</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>0x0001</td>
<td>State Deasserted</td>
<td>Yes</td>
<td>NEM has failed.</td>
</tr>
<tr>
<td>0x0002</td>
<td>State Asserted</td>
<td>Yes</td>
<td>NEM has not failed.</td>
</tr>
</tbody>
</table>

NEM\textsubscript{n}/STATE

These sensors report the state of any NEMs that are installed in the chassis.

TABLE 1-7 \textbf{NEM\textsubscript{n}/STATE}

<table>
<thead>
<tr>
<th>Reading</th>
<th>State</th>
<th>Event</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>0x0001</td>
<td>Running</td>
<td>Yes</td>
<td>NEM is running.</td>
</tr>
<tr>
<td>0x0004</td>
<td>Powered Off</td>
<td>Yes</td>
<td>NEM is powered off.</td>
</tr>
<tr>
<td>0x0040</td>
<td>Degraded</td>
<td>Yes</td>
<td>NEM needs to be serviced.</td>
</tr>
</tbody>
</table>

PEM\textsubscript{n}/PRSNT

These two presence sensors indicate whether the corresponding PCIe express module (PEM) is present.

TABLE 1-8 \textbf{PEM\textsubscript{n}/PRSNT}

<table>
<thead>
<tr>
<th>Reading</th>
<th>State</th>
<th>Event</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>0x0001</td>
<td>Device Absent</td>
<td>Yes</td>
<td>PEM is absent.</td>
</tr>
<tr>
<td>0x0002</td>
<td>Device Present</td>
<td>Yes</td>
<td>PEM is present.</td>
</tr>
</tbody>
</table>

Motherboard Temperature Sensors

These temperature sensors are monitored, but are not used as inputs to the fan control algorithm and are not used to turn off system power when they are non-recoverable. No event will be generated for these sensor readings.
MB/T_AMBn

There are three temperature sensors on the motherboard that monitor the ambient temperature from the internal temperature sensor in the LM75/ADM1024 chip on the motherboard.

Motherboard Voltage Sensors

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

MB/V_BAT

This sensor monitors the 3V RTC battery on the motherboard.

MB/V_+3V3AUX

This sensor monitors the 3.3V aux power input that powers the service processor and other standby devices.

MB/V_+3V3

This sensor monitors the 3.3V main input that is active when the power is on. It is not monitored when the host is powered off.

MB/V_+5V

This sensor monitors the 5V main input that is active when the power is on. It is not monitored when the host is powered off.

MB/V_+12V

This sensor monitors the 12V main input that is active when the power is on. It is not monitored when the host is powered off.
**MB/V+_2V5**

This sensor monitors the 2.5V core input that is active when the power is on. It is not monitored when the host is powered off.

**MB/V+_1V5**

This sensor monitors the 1.5V core input that is active when the power is on. It is not monitored when the host is powered off.

**MB/V+_1V2**

This sensor monitors the 1.2V core input that is active when the power is on. It is not monitored when the host is powered off.

<table>
<thead>
<tr>
<th>Threshold</th>
<th>Direction</th>
<th>Event</th>
<th>Description</th>
<th>Action</th>
</tr>
</thead>
<tbody>
<tr>
<td>Lower Non-Critical</td>
<td>Assert</td>
<td>Yes</td>
<td>Voltage has decreased below lower non-critical threshold.</td>
<td>System Alert LED is SLOW</td>
</tr>
<tr>
<td>Lower Non-Critical</td>
<td>Deassert</td>
<td>Yes</td>
<td>Voltage has returned to normal from lower non-critical.</td>
<td>System Alert LED is OFF</td>
</tr>
<tr>
<td>Lower Critical</td>
<td>Assert</td>
<td>Yes</td>
<td>Voltage has decreased below lower critical threshold.</td>
<td>System Alert LED is SLOW</td>
</tr>
<tr>
<td>Lower Critical</td>
<td>Deassert</td>
<td>Yes</td>
<td>Voltage has returned to lower non-critical from lower critical.</td>
<td>System Alert LED is SLOW</td>
</tr>
<tr>
<td>Lower Non-Recoverable</td>
<td>Assert</td>
<td>Yes</td>
<td>Voltage has decreased below lower non-recoverable threshold.</td>
<td>System Alert LED is SLOW</td>
</tr>
<tr>
<td>Lower Non-Recoverable</td>
<td>Deassert</td>
<td>Yes</td>
<td>Voltage has returned to lower critical from lower non-recoverable.</td>
<td>System Alert LED is SLOW</td>
</tr>
<tr>
<td>Upper Non-Critical</td>
<td>Assert</td>
<td>Yes</td>
<td>Voltage has increased above upper non-critical threshold.</td>
<td>System Alert LED is SLOW</td>
</tr>
<tr>
<td>Upper Non-Critical</td>
<td>Deassert</td>
<td>Yes</td>
<td>Voltage has returned to normal from upper non-critical.</td>
<td>System Alert LED is OFF</td>
</tr>
<tr>
<td>Upper Critical</td>
<td>Assert</td>
<td>Yes</td>
<td>Voltage has increased above upper critical threshold.</td>
<td>System Alert LED is SLOW</td>
</tr>
</tbody>
</table>
Power Supply Sensors

There are two power supplies in the Sun Blade 6000 and Sun Blade 6048 Modular Systems.

**PS\textsubscript{n} /PRSNT**

These sensors indicate whether the corresponding power supply is present. The Sun Blade 6000 and Sun Blade 6048 Modular Systems ship with two power supplies. If either power supply is removed, there is no power supply redundancy.

<table>
<thead>
<tr>
<th>Threshold</th>
<th>Direction</th>
<th>Event</th>
<th>Description</th>
<th>Action</th>
</tr>
</thead>
<tbody>
<tr>
<td>Upper Critical</td>
<td>Deassert</td>
<td>Yes</td>
<td>Voltage has returned to upper non-critical from upper critical.</td>
<td>System Alert LED is SLOW</td>
</tr>
<tr>
<td>Upper Non-Recoverable</td>
<td>Assert</td>
<td>Yes</td>
<td>Voltage has increased above upper non-recoverable threshold.</td>
<td>System Alert LED is SLOW</td>
</tr>
<tr>
<td>Upper Non-Recoverable</td>
<td>Deassert</td>
<td>Yes</td>
<td>Voltage has returned to upper critical from upper non-recoverable.</td>
<td>System Alert LED is SLOW</td>
</tr>
</tbody>
</table>

**TABLE 1-10**  
**PS\textsubscript{n} /PRSNT**

<table>
<thead>
<tr>
<th>Reading</th>
<th>State</th>
<th>Event</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>0x0001</td>
<td>Device Absent</td>
<td>Yes</td>
<td>Power supply is absent.</td>
</tr>
<tr>
<td>0x0002</td>
<td>Device Present</td>
<td>Yes</td>
<td>Power supply is present.</td>
</tr>
</tbody>
</table>

**PS\textsubscript{n} /S\textsubscript{n} /V\_IN\_ERR**

These sensors report a power supply side AC fault.

<table>
<thead>
<tr>
<th>Reading</th>
<th>State</th>
<th>Event</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>0x0001</td>
<td>State Deasserted</td>
<td>No</td>
<td>Power supply side AC voltage input error has not occurred.</td>
</tr>
<tr>
<td>0x0002</td>
<td>State Asserted</td>
<td>Yes</td>
<td>Power supply side AC voltage input error has occurred.</td>
</tr>
</tbody>
</table>
PSn/Sn/V_OUT_OK

These sensors report the state of a power supply side.

**TABLE 1-12  PSn/SY/V_OUT_OK**

<table>
<thead>
<tr>
<th>Reading</th>
<th>State</th>
<th>Event</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>0x0001</td>
<td>State Deasserted</td>
<td>Yes</td>
<td>Power supply side AC voltage output error has occurred.</td>
</tr>
<tr>
<td>0x0002</td>
<td>State Asserted</td>
<td>No</td>
<td>Power supply side AC voltage output error has not occurred.</td>
</tr>
</tbody>
</table>

SYS/VPS

This sensor indicates the virtual power consumption (in watts) of the server module.

HDD Sensors

Each server module can support four hard disk drives (HDDs). A number of sensors provide information about each HDD.

**HDDn/PRSNT**

These sensors monitor the hard disk hardware presence signal.

**TABLE 1-13  HDDn/PRSNT**

<table>
<thead>
<tr>
<th>Reading</th>
<th>State</th>
<th>Event</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>0x0001</td>
<td>Device Absent</td>
<td>Yes</td>
<td>Hard drive is absent.</td>
</tr>
<tr>
<td>0x0002</td>
<td>Device Present</td>
<td>Yes</td>
<td>Hard drive is present.</td>
</tr>
</tbody>
</table>


HDDₙ/ERR

These LED indicator sensors show the state of the corresponding Hard Disk Drive Fault LED HDDₙ/ERR.LED.

<table>
<thead>
<tr>
<th>Reading</th>
<th>State</th>
<th>Event</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>0x0001</td>
<td>Predictive Failure Deasserted</td>
<td>No</td>
<td>This state indicates that the HDD X Fault_ LED is OFF.</td>
</tr>
<tr>
<td>0x0002</td>
<td>Predictive Failure Asserted</td>
<td>Yes</td>
<td>This state indicates that the HDD X Fault LED is ON. It is turned on in response to a fault signal from the LSI SAS controller. In addition the System Alert LED should be SLOW while this is illuminated.</td>
</tr>
</tbody>
</table>

HDDₙ/STATE

These sensors indicate the state of the corresponding hard disk drive hardware.

<table>
<thead>
<tr>
<th>Reading</th>
<th>State</th>
<th>Event</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>0x0001</td>
<td>Device Absent</td>
<td>Yes</td>
<td>Hard drive is absent.</td>
</tr>
<tr>
<td>0x0002</td>
<td>Device Present</td>
<td>Yes</td>
<td>Hard drive is present.</td>
</tr>
</tbody>
</table>

Fan Sensors

The server module contains six fan modules labeled FMᵣ. Each module contains two fans.
**FMn/Fy/TACH**

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 host is powered off. These sensors report individual fan speeds.

**TABLE 1-16 FMn/Fy/TACH**

<table>
<thead>
<tr>
<th>Threshold</th>
<th>Direction</th>
<th>Event</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>Lower Non-Recoverable</td>
<td>Assert</td>
<td>No</td>
<td>This indicates that the fan has failed or has been removed.</td>
</tr>
<tr>
<td>Lower Non-Recoverable</td>
<td>Deassert</td>
<td>No</td>
<td>This indicates that the fan has returned to normal or has been replaced.</td>
</tr>
</tbody>
</table>

**FMn/ERR**

This is a GPIO signal indicating fan module failure status.

**TABLE 1-17 FMn/ERR**

<table>
<thead>
<tr>
<th>Reading</th>
<th>State</th>
<th>Event</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>0x0001</td>
<td>Predictive Failure</td>
<td>No</td>
<td>This state indicates that the fan module has not failed.</td>
</tr>
<tr>
<td></td>
<td>Deasserted</td>
<td></td>
<td></td>
</tr>
<tr>
<td>0x0002</td>
<td>Predictive Failure</td>
<td>Yes</td>
<td>This state indicates that the fan module has failed.</td>
</tr>
<tr>
<td></td>
<td>Asserted</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

**CPU n Sensors**

There are two CPUs per server module.
**Pn/PRSNT**

These sensors monitor the presence of the CPUs.

**TABLE 1-18  Pn/PRSNT**

<table>
<thead>
<tr>
<th>Reading</th>
<th>State</th>
<th>Event</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>0x0001</td>
<td>Device Absent</td>
<td>Yes</td>
<td>This state indicates that CPU is absent.</td>
</tr>
<tr>
<td>0x0002</td>
<td>Device Present</td>
<td>Yes</td>
<td>This state indicates that the CPU is present.</td>
</tr>
</tbody>
</table>

**CPU n Fan Control Temperature Sensors**

Temperature sensors in this category are used as inputs to the fan control algorithm and are used to turn the system power off if they are non-recoverable. Their state also affects the state of the front panel LEDs.

**Pn/T_CORE**

Each server module has two CPU sockets.

These sensors report CPU T_Control temperatures. They are not monitored when the host is powered off.

**TABLE 1-19  Pn/T_CORE**

<table>
<thead>
<tr>
<th>Threshold</th>
<th>Direction</th>
<th>Event</th>
<th>Description</th>
<th>Action</th>
</tr>
</thead>
<tbody>
<tr>
<td>Upper Non-Critical</td>
<td>Assert</td>
<td>Yes</td>
<td>CPU T_Control temperature has increased above non-critical threshold.</td>
<td>CPU Fail LED is OFF. System Alert LED is OFF.</td>
</tr>
<tr>
<td>Upper Non-Critical</td>
<td>Deassert</td>
<td>Yes</td>
<td>CPU T_Control temperature has returned to normal from non-critical.</td>
<td>CPU Fail LED is OFF. System Alert LED is OFF.</td>
</tr>
<tr>
<td>Upper Critical</td>
<td>Assert</td>
<td>Yes</td>
<td>CPU T_Control temperature has increased above critical threshold.</td>
<td>CPU Fail LED is ON. System Alert LED is SLOW.</td>
</tr>
</tbody>
</table>
Server Module Sensors

**BL\text{n}/PRSNT**

These sensors detect whether server modules are present in chassis slots. Values are from 0 to 9 for the Sun Blade 6000 Modular System; values are from 0 to 11 for the Sun Blade 6048 Modular System.

### TABLE 1-20  BL\text{n}/PRSNT

<table>
<thead>
<tr>
<th>Reading</th>
<th>State</th>
<th>Event</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>0x0001</td>
<td>Deasserted</td>
<td>Yes</td>
<td>This state indicates that the server module is not present.</td>
</tr>
<tr>
<td>0x0002</td>
<td>Asserted</td>
<td>Yes</td>
<td>This state indicates that the server module is present.</td>
</tr>
</tbody>
</table>
BLn/ERR

These sensors detect whether server modules are in an error condition in chassis slots. Values are from 0 to 9 for the Sun Blade 6000 Modular System; values are from 0 to 11 for the Sun Blade 6048 Modular System.

**TABLE 1-21**  BLn/ERR

<table>
<thead>
<tr>
<th>Reading</th>
<th>State</th>
<th>Event</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>0x0001</td>
<td>State Deasserted</td>
<td>Yes</td>
<td>This state indicates that the server module has failed.</td>
</tr>
<tr>
<td>0x0002</td>
<td>State Asserted</td>
<td>Yes</td>
<td>This state indicates that the server module has not failed.</td>
</tr>
</tbody>
</table>

BLn/STATE

These sensors detect the state of server modules that are present in chassis slots. Values are from 0 to 9 for the Sun Blade 6000 Modular System; values are from 0 to 11 for the Sun Blade 6048 Modular System.

**TABLE 1-22**  BLn/STATE

<table>
<thead>
<tr>
<th>Reading</th>
<th>State</th>
<th>Event</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>0x0001</td>
<td>Running</td>
<td>Yes</td>
<td>This state indicates that the server module is running.</td>
</tr>
<tr>
<td>0x0004</td>
<td>Power Off</td>
<td>Yes</td>
<td>This state indicates that the server module is not powered off.</td>
</tr>
<tr>
<td>0x0020</td>
<td>Off Duty</td>
<td>Yes</td>
<td>This state indicates that the server module is ready to remove.</td>
</tr>
</tbody>
</table>