

Oracle Integrated Lights Out Manager (ILOM) 3.0

Supplement for Sun Netra X6270 M2 Server Module



Part No. 821-0943-10
October 2010, Revision A

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Using This Documentation

This supplement contains information about Oracle Integrated Lights Out Manager (ILOM) 3.0 firmware that is specific to Oracle's Sun Netra X6270 M2 server module.

For a complete discussion of ILOM 3.0 and its capabilities, along with user procedures, see the *Oracle Integrated Lights Out Manager (ILOM) 3.0 Documentation Collection*. These documents are listed in “[Related Documentation](#)” on page vi, and are available at:

<http://docs.sun.com/apps/docs/prod/int.lights.mgr30#hic>

Note – Oracle Integrated Lights Out Manager was formerly called Sun Integrated Lights Out Manager.

Product Information

For information about the Sun Netra X6270 M2 server module, go to the following web site:

<http://www.oracle.com/goto/netrax6270m2>

At that site, you can find links and navigate to the following information and downloads:

- Product information and specifications
- Supported operating systems
- Software and firmware downloads
- Supported option cards
- Supported Network Express Modules
- External storage options
- Tools and Drivers DVD image
- Sun Installation Assistant DVD image
- SunVTS image
- Systems Handbook

Related Documentation

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

<http://docs.sun.com/app/docs/prod/nt6270.m2.srvrmod?l=en#hic>

Title and Part Number	Content	Format
<i>Sun Netra X6270 M2 Server Module Product Notes, 821-0936</i>	Late-breaking information about the server module	PDF HTML
<i>Sun Netra X6270 M2 Server Module Getting Started Guide, 821-2123</i>	Basic installation information for setting up the server module	PDF Print
<i>Sun Netra X6270 M2 Server Module Installation Guide, 821-0937</i>	Detailed installation information for setting up the server module	PDF HTML Print option

Title and Part Number	Content	Format
<i>Sun Netra X6270 M2 Server Module Installation Guide for Linux, Virtual Machine Software, and Oracle Solaris Operating Systems, 821-0940</i>	Installation instructions for the Linux, Oracle VM, VMware, and Oracle Solaris operating systems	PDF HTML
<i>Sun Netra X6270 M2 Server Module Installation Guide for Windows Operating Systems, 821-0941</i>	Installation instructions for the Windows Server operating systems	PDF HTML
<i>Sun Installation Assistant 2.3 Through 2.4 User's Guide for x64 Systems, 821-0694</i>	Instructions for using the Sun Installation Assistant (SIA) when installing a Windows or Linux operating system	PDF HTML
<i>Sun Netra X6270 M2 Server Module Service Manual, 821-0939</i>	Information and procedures for maintaining and upgrading the server module	PDF HTML
<i>Sun Server CLI Tools and IPMI Tool 2.0 User's Guide, 821-1600</i>	Information about how to install, configure, and work with CLI tools and IPMITool	PDF HTML
<i>Oracle x86 Servers Diagnostics Guide, 820-6750</i>	Information about how to use the diagnostic software tools provided with Oracle's x86 servers	PDF HTML
<i>Oracle Integrated Lights Out Manager (ILOM) 3.0 Documentation Collection, 820-5523, 820-6410, 820-6411, 820-6412, 820-6413</i>	Documents covering ILOM features and tasks that are common to servers and server modules that support ILOM 3.0	PDF HTML
<i>Oracle Integrated Lights Out Manager (ILOM) 3.0 Supplement for Sun Netra X6270 M2 Server Module, 821-0943</i>	ILOM 3.0 information that is specific to the Sun Netra X6270 M2 server module	PDF HTML
<i>Important Safety Information for Sun Hardware Systems, 821-1590</i>	Multilingual hardware safety and compliance information for all Sun hardware systems	Print
<i>Sun Netra X6270 M2 Server Module Safety and Compliance Guide, 821-0938</i>	Safety and compliance information for this server module	PDF

Translated versions of some of these documents are available at the web site listed above this table. English documentation is revised more frequently and might be more up-to-date than the translated documentation.

Documentation, Support, and Training

These web sites provide additional resources:

- Documentation <http://docs.sun.com/>
- Support <http://www.sun.com/support/>
- Training <http://www.sun.com/training/>

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Submit comments about this document by clicking the Feedback[+] link at <http://docs.sun.com>. Include the title and part number of your document with your feedback:

Oracle Integrated Lights Out Manager (ILOM) 3.0 Supplement for Sun Netra X6270 M2 Server Module, part number 821-0943-10.

Product Downloads

To download the latest product software, go to the following web site:

<http://www.oracle.com/goto/netrax6270m2>

At that site, you can find links and navigate to the following information and downloads:

- Tools and Drivers DVD image
- Sun Installation Assistant DVD image
- Sun Validation Test Suite (SunVTS) image

ILOM 3.0 Feature Sets

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](#)
 - [“ILOM 3.0 Common Feature Set and Server Module Specific Features” on page 1](#)
 - [“ILOM 3.0 Common Feature Set Documentation Collection” on page 2](#)
-

ILOM Overview

Oracle Integrated Lights Out Manager (ILOM) is system management firmware that is preinstalled on all of Oracle's x86-based server platforms and some SPARC server platforms. ILOM enables you to actively manage and monitor components installed in your server module. ILOM provides a browser-based interface and a command-line interface, as well as SNMP and IPMI interfaces.

ILOM 3.0 Common Feature Set and Server Module Specific Features

Oracle's Sun Netra X6270 M2 server module supports the entire ILOM feature set provided in ILOM 3.0. In addition, it also supports ILOM features that are specific to the Sun Netra X6270 M2 server module.

For details on how to use the features that are common to all server platforms, refer to the *Oracle Integrated Lights Out Manager (ILOM) 3.0 Documentation Collection*. For a detailed description of the guides, see [“ILOM 3.0 Common Feature Set Documentation Collection” on page 2](#).

For details on how to use the ILOM features that are specific to the Sun Netra X6270 M2 server module, see [Chapter 2](#).

ILOM 3.0 Common Feature Set Documentation Collection

[TABLE 1-1](#) identifies the guides in the *Oracle Integrated Lights Out Manager (ILOM) 3.0 Documentation Collection*. Refer to these guides for information about using ILOM features that are common to all server platforms.

TABLE 1-1 ILOM 3.0 Common Feature Set Documentation Collection

Title and Part Number	Content
<i>Oracle Integrated Lights Out Manager (ILOM) 3.0 Feature Updates and Release Notes</i> , 820-7329	For each point release after ILOM 3.0, this guide provides information about: <ul style="list-style-type: none">• New ILOM 3.0.x features• Known issues and workarounds• Fixed issues
<i>Oracle Integrated Lights Out Manager (ILOM) 3.0 Getting Started Guide</i> , 820-5523	This guide provides easy-to-use setup and configuration procedures that enable you to start using ILOM.
<i>Oracle Integrated Lights Out Manager (ILOM) 3.0 Concepts Guide</i> , 820-6410	This guide provides conceptual information for all common features available in ILOM 3.0.
<i>Oracle Integrated Lights Out Manager (ILOM) 3.0 Web Interface Procedures Guide</i> , 820-6411	This guide provides procedural information for all common web-based features available in ILOM 3.0.
<i>Sun Integrated Lights Out Manager (ILOM) 3.0 CLI Procedures Guide</i> , 820-6412	This guide provides procedural information for all common command-line features available in ILOM 3.0.
<i>Oracle Integrated Lights Out Manager (ILOM) 3.0 Management Protocols Reference Guide</i> , 820-6413	This guide provides information about accessing ILOM functions when using management protocols such as: <ul style="list-style-type: none">• Simple Network Management Protocol (SNMP)• Intelligent Platform Management Interface (IPMI)• Web Service Management (WS-Man) and Common Information Model (CIM)

You can view and download the guides in the *Oracle Integrated Lights Out Manager (ILOM) 3.0 Documentation Collection* at:

<http://docs.sun.com/app/docs/prod/int.lights.mgr30#hic>

ILOM Platform Features for the Sun Netra X6270 M2 Server Module

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 chapter describes the features that are specific to the Sun Netra X6270 M2 server module.

For detailed information about ILOM features that are common to all server platforms, see the *Oracle Integrated Lights Out Manager (ILOM) 3.0 Documentation Collection*, as described in [“ILOM 3.0 Common Feature Set Documentation Collection” on page 2](#).

ILOM features discussed in this chapter, which are specific to the Sun Netra X6270 M2 server module, are as follows:

- [“Supported Server Module Firmware” on page 4](#)
- [“Hardware Management Pack for Single Server Module Management” on page 4](#)
- [“ILOM Sideband Management” on page 6](#)
- [“Switch Serial Port Output Between SP and Host Console” on page 13](#)
- [“Clear Server Module and CMM Faults” on page 15](#)
- [“Sensors and Indicators Reference Information” on page 16](#)
- [“SNMP and PET Message Reference Information” on page 20](#)

Supported Server Module Firmware

[TABLE 2-1](#) identifies the ILOM and BIOS firmware versions that are supported on the Sun Netra X6270 M2 server module.

TABLE 2-1 Supported Platform Firmware

ILOM SP Version	Host BIOS Version	ILOM Chassis Management Module (CMM) Firmware	Applicable Hardware
3.0.9.15.a	08.04.01	3.0.6.11.b (r48988) (or subsequent release)	Sun Netra X6270 M2 server module

For information about how to update the firmware on your server module, refer to the *Oracle Integrated Lights Out Manager (ILOM) 3.0 Documentation Collection* at:

<http://docs.sun.com/app/docs/prod/int.lights.mgr30#hic>

Hardware Management Pack for Single Server Module Management

The Sun Server Hardware Management Pack (Hardware Management Pack) from Oracle provides tools to help you manage and configure your Oracle server modules from the host operating system. To use these tools, you must install the Hardware Management Pack software on your server module. After installing the Hardware Management Pack software, you will be able to perform the following server management tasks described in [TABLE 2-2](#)

TABLE 2-2 Hardware Management Pack – Server Management Tasks

Server Module Management Task		
From Host OS*	Hardware Management Pack Implementation	Tool
Monitor Oracle hardware with host IP address	Use the Hardware Management Agent and the associated Simple Network Management Protocol (SNMP) Plugins at the operating-system level to enable in-band monitoring of your Oracle hardware. This in-band monitoring functionality enables you to use your host operating system IP address to monitor your Oracle server module without connecting the ILOM management port to your network.	Host OS-level management tool
Monitor storage devices, including RAID arrays	Use the Server Storage Management Agent at the operating-system level to enable in-band monitoring of the storage devices configured on your Oracle server module. The Server Storage Management Agent provides an operating-system daemon that gathers information about your storage devices such as hard disk drives (HDDs) and RAID arrays, and sends this information to the ILOM service processor. The Storage Monitoring features in ILOM enable you to view and monitor the information provided by the Server Storage Management Agent. You can access the Storage Monitoring features in ILOM from the command-line interface (CLI).	ILOM 3.0 CLI Storage Monitoring features
Configure BIOS CMOS settings, device boot order, and some SP settings	Use the biosconfig CLI tool from the host operating system to configure your Oracle x86 server module BIOS CMOS settings, device boot order, and some service processor (SP) settings.	Host OS-level biosconfig CLI
Query, update, and validate firmware versions on supported SAS storage devices	Use the fwupdate CLI tool from the host operating system to query, update, and validate firmware versions on supported storage devices such as SAS host bus adapters (HBAs), embedded SAS storage controllers, LSI SAS storage expanders, and disk drives (spinning media and flash drives).	Host OS-level fwupdate CLI
Restore, set, and view ILOM configuration settings	Use the ilomconfig CLI tool from the host operating system to restore ILOM configuration settings, as well as to view and set ILOM properties that are associated with network management, clock configuration, and user management.	Host OS-level ilomconfig CLI
View or create RAID volumes on storage drives	Use the raidconfig CLI tool from the host operating system to view and create RAID volumes on storage drives that are attached to RAID controllers, including storage arrays.	Host OS-level raidconfig CLI
Use IPMITool to access and manage Oracle server module	Use the open source command-line IPMITool from the host operating system to access and manage your Oracle server module via the IPMI protocol.	Host OS-level command-line IPMITool
*Supported host operating systems include: Oracle Solaris, Linux, Windows, and VMware		

View Support Matrix and Download Hardware Management Pack Software

Refer to the following table to view the support matrix for the Hardware Management Pack software or to download the Hardware Management Pack software.

Description	URL
View operating system and hardware support for the Hardware Management Pack	http://www.sun.com/systemmanagement/managementpack_supportmatrix.jsp
Download the Hardware Management Pack software	http://www.sun.com/systemmanagement/managementtools.jsp#management

Hardware Management Pack Documentation

For instructions for installing the management pack software or using its components, see the following Hardware Management Pack documentation:

- *Sun Server Hardware Management Pack 2.0 User's Guide* (821-1609)
- *Sun Server Management Agent 2.0 User's Guide* (821-1601)
- *Sun Server CLI Tools and IPMI Tool 2.0 User's Guide*, 821-1600

For additional details about how to use the Storage Monitoring features in ILOM, see Chapter 4 of the *Oracle Integrated Lights Out Manager (ILOM) 3.0 Feature Updates and Release Notes*, 820-7329.

For additional details about accessing and managing your server module via SNMP or IPMI, see the *Oracle Integrated Lights Out Manager (ILOM) 3.0 Management Protocols Reference Guide*, 820-6413.

ILOM Sideband Management

By default, you connect to the server module 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 module Gigabit Ethernet ports (NET 0, 1, 2, 3), which are in-band ports, to send and receive ILOM commands to and from the SP. In-band ports are also called sideband ports.

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

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

- [“Special Considerations for Sideband Management” on page 7](#)
- [“Configure Sideband Management Using the Web Interface” on page 7](#)
- [“Configure Sideband Management Using the CLI” on page 8](#)
- [“Configure Sideband Management Using the Host BIOS Setup Utility” on page 10](#)

Special Considerations for Sideband Management

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

- Connectivity to the 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 ILOM Remote Console.
- 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/switching.
- Server module host power cycles might cause a brief interruption of network connectivity for Gigabit Ethernet ports (NET 0, 1, 2, 3) that are configured for sideband management. If this condition occurs, configure the adjacent switch/bridge ports as host ports.

Note – 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.

System Information	System Monitoring	Power Management	Storage	Configuration	User Management	Remote Control	Maintenance		
System Management Access	Alert Management	Network	DNS	Serial Port	Clock	Timezone	Syslog	SMTP Client	Policy

Network Settings

View the MAC address and configure network settings for the Service Processor from this page. DHCP is the default mode, but you can manually configure a static IP Address, Netmask, and Gateway. You may also select which port you wish to use for managing this Service Processor.

State: ☒ Enabled

MAC Address: 00:21:28:57:1F:F8

Out Of Band MAC Address: 00:21:28:57:1F:F8

Sideband MAC Address: 00:21:28:57:1F:F9

Management Port:

IP Discovery Mode: ☐ DHCP ☒ Static

IP Address:

Netmask:

Gateway:

3. In the Network Settings page, do the following:

- Select DHCP to acquire the IP address automatically or select Static to specify the appropriate IP address.
- To select a sideband management port, click the Management Port drop-down list and select the desired management port.

The drop-down list enables you to change to any one of the four Gigabit Ethernet ports, `/SYS/MB/NET n` , where n is 0 to 3. The SP NET MGT port, `/SYS/SP/NET0`, is the default.

- Click Save for the changes to take effect.

▼ Configure Sideband Management Using the CLI

1. Log in to ILOM using the CLI.

Note – Using a serial connection for this procedure eliminates the possibility of losing connectivity during sideband management configuration changes.

2. If you logged in using the serial port, you can assign a static IP address.

For instructions, see the information about assigning an IP address in the *Sun Netra X6270 M2 Server Module Installation Guide*, 821-0937.

3. 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 macaddress is the same as the SP's outofbandmacaddress and the current active managementport is set to the default (/SYS/SP/NET0).

4. 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, 1, 2, or 3.

-> **set commitpending=true**

5. 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`.

▼ Configure Sideband Management Using the Host BIOS Setup Utility

You can access the BIOS Setup Utility screens from the following interfaces:

- Use a USB keyboard, mouse, and VGA monitor connected directly to the server module.
- Use a terminal (or terminal emulator connected to a computer) through the server module serial port.
- Connect to the server module using the ILOM Remote Console. To use this interface, you must know the IP address of the server module.

To configure sideband management using the host BIOS Setup Utility, perform the following steps:

1. Power on or power cycle the server module.

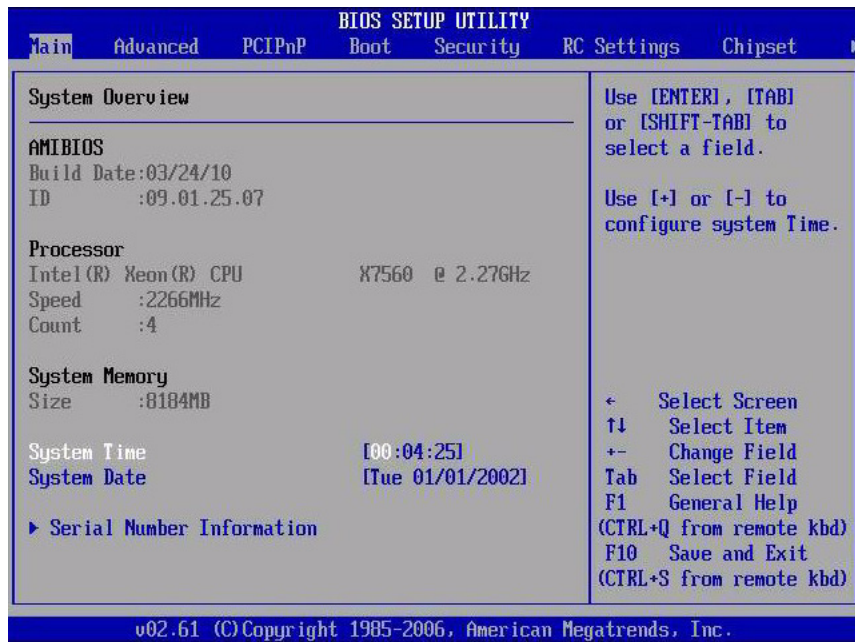
2. To enter the BIOS Setup Utility, press the F2 key while the system is performing the power-on self-test (POST).

```

Initializing USB Controllers .. Done.
Press F2 to run Setup (CTRL+E on Remote Keyboard)
Press F8 for BBS POPUP (CTRL+P on Remote Keyboard)
Press F12 to boot from the network (CTRL+N on Remote Keyboard)

```

When BIOS is started, the main BIOS Setup Utility top-level screen appears. This screen provides seven menu options across the top of the screen.

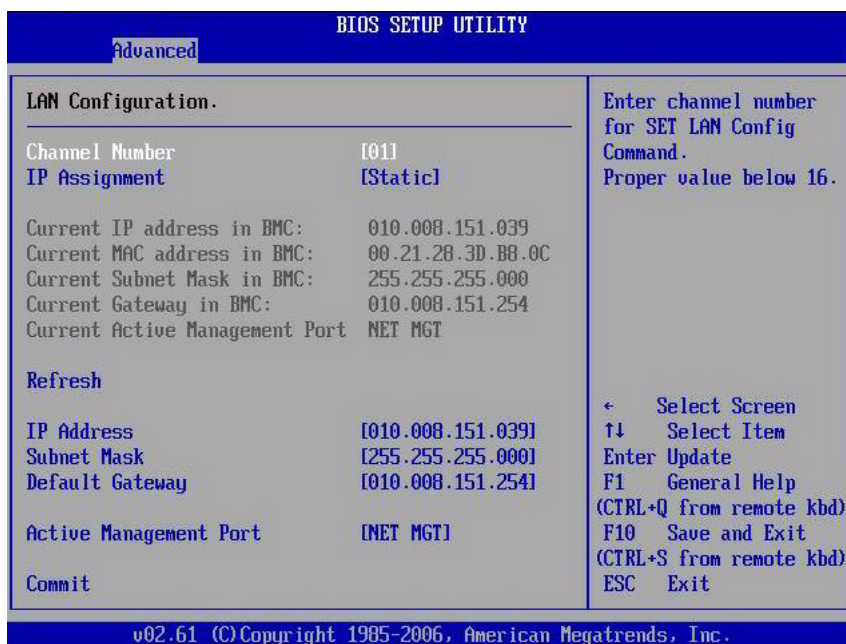


3. In the main screen, select Advanced --> IPMI Configuration.

The IPMI 2.0 Configuration screen appears.



- In the IPMI 2.0 Configuration screen, select the Set LAN Configuration option.
 The LAN Configuration screen appears.



5. In the LAN Configuration screen, do the following:

- a. Use the left and right arrow keys to select the IP Assignment option and set it to DHCP.
- b. Use the left and right arrow keys to select the Active Management Port option and set the port to a sideband management port (NET0, NET1, NET2, NET3).
The NET MGT port is the default.
- c. Select Commit for the change to take effect.

Switch Serial Port Output Between SP and Host Console

You can switch the serial port output between the SP console (SER 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 13](#)
- [“Switch Serial Port Output Using the CLI” on page 15](#)



Caution – You should set up the network on the SP before attempting to switch the serial port owner to the host server module. If a network is not set up, and you switch the serial port owner to the host server module, you will be unable to connect using 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 use the ILOM Preboot Menu to restore access to the serial port over the network. For more information see the ILOM Preboot Menu information in the *Sun Netra X6270 M2 Server Module Service Manual*, 821-0939.

▼ 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.

System Information	System Monitoring	Power Management	Storage	Configuration	
System Management Access	Alert Management	Network	DNS	Serial Port	Clock

Serial Port Settings


The Host Serial Port is the connection between the host server and the service processor that allows a service processor console port on the host server, often referred to as serial port 0, COM0, or /dev/ttyS0. The External Serial Port is the same speed to avoid flow control issues when connecting to the host console from the SP external serial port. See the [Serial Port Settings](#) page for more information.

Serial Port Sharing

 This setting controls whether the external serial port is electrically connected to the Host Server or the Service Processor. The setting will be that of the Host Server.

Owner: Service Processor

Host Serial Port

 This setting must match the setting for Serial Port 0, COM1 or /dev/ttyS0 on the host operating system.

Baud Rate: 9600

Flow Control: None

External Serial Port

Baud Rate: 9600

Flow Control: Software

Save

3. To select a serial port owner, click the Owner drop-down list and select the desired serial port owner.

The drop-down list enables 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 Module and CMM Faults

When a server module component fails, the server module 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-serviceable 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 Netra X6270 M2 server module, the following types of faults must be cleared manually after the faulty component is replaced:

- Fabric Expansion Module (FEM) faults
- CPU faults
- Motherboard faults (when motherboard is not replaced)

Other faults captured by the fault management function in ILOM include faults generated by the chassis monitoring module (CMM). These faults occur when other components in the chassis fail, for example:

- CMM faults
- Fan faults
- Power supply faults
- NEM faults

Chassis related faults are not automatically cleared by the system. You must manually clear these faults in the Fault Management function on the ILOM CMM. After you have cleared the faults reported by the CMM, the chassis related faults are then automatically cleared by the system in the Fault Management function on the ILOM SP.

When clearing faults, give consideration to the following:

- When clearing faults for memory DIMMs, note that the DIMM faults can be either system wide (/SYS/MB) or on a per DIMM basis (/SYS/MB/Pn/Dn).
- PCIe faults include /SYS/MB/NETn.

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

- To clear the `fault.security.integrity-compromised@/sys/sp` fault, replace the server module's top cover and reboot the server's SP.
- To clear DIMM, CPU, motherboard, and PCIe faults, access the server module'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 module faults, see the *Oracle Integrated Lights Out Manager (ILOM) 3.0 Documentation Collection* at:

<http://docs.sun.com/app/docs/prod/int.lights.mgr30#hic>

Sensors and Indicators Reference Information

The server module includes several sensors that report on hardware conditions. Many of the sensor readings are used to adjust the fan speeds and perform other actions, such as illuminating LEDs and powering off the server module.

This section describes the sensors that ILOM monitors for the Sun Netra X6270 M2 server module.

The following types of sensors are described:

- [“Temperature Sensors” on page 17](#)
- [“Fan Sensors” on page 17](#)
- [“FEM and ESM Sensors” on page 17](#)
- [“Power Supply Sensors” on page 18](#)
- [“Entity Presence Sensors” on page 18](#)
- [“System Indicators” on page 19](#)

Note – For information about how to obtain sensor readings or to determine the state of system indicators in ILOM, see the *Sun Integrated Lights Out Manager (ILOM) 3.0 CLI Procedures Guide*, 820-6412, and the *Oracle Integrated Lights Out Manager (ILOM) 3.0 Web Interface Procedures Guide*, 820-6411.

Temperature Sensors

TABLE 2-3 describes the environmental sensors.

TABLE 2-3 Temperature Sensors

Sensor Name	Sensor Type	Description
/SYS/MB/T_AMB	Temperature	Motherboard ambient temperature sensor
/SYS/T_AMB	Temperature	Mirror of /SYS/MB/T_AMB
/SYS/MB/RFEM0/T_AMB	Temperature	Temperature sensor on FEM

Fan Sensors

TABLE 2-5 describes the fan sensors.

TABLE 2-4 Fan Sensors

Sensor Name	Sensor Type	Description
/SYS/FM[0-5]/F[0-1]/TACH	Speed	Fan speed sensor
/SYS/FM[0-5]/ERR	Fault	Fan module error

FEM and ESM Sensors

TABLE 2-5 describes the Fabric Expansion Module (FEM) and Energy Storage Module (ESM) sensors.

TABLE 2-5 FEM and ESM Sensors

Sensor Name	Sensor Type	Description
/SYS/MB/RFEM[0-1]/FAULT	Fault	Asserts when the FEM fails
/SYS/MB/RFEM[0-1]/ESM/FAULT	Fault	Asserts when ESM fails

Power Supply Sensors

TABLE 2-6 describes the power supply sensors.

TABLE 2-6 Power Supply Unit Current, Voltage, and Power Sensors

Sensor Name	Sensor Type	Description
/SYS/PS[0-1]/PRSNT	Presence	Power supply presence sensor
/SYS/PS[0-1]/S[0-1]/V_IN_ERR	Fault	Power supply input voltage sensor
/SYS/PS[0-1]/S[0-1]/V_OUT_OK	Fault	Power supply output voltage fault sensor
/SYS/VPS	Fault	Voltage and current monitor

Entity Presence Sensors

TABLE 2-7 describes the entity presence sensors. In the table, *n* designates numbers 0-*n*.

TABLE 2-7 Presence Sensors

Sensor Name	Sensor Type	Description
/SYS/HDD[0-3]/PRSNT	Entity presence	Storage device presence sensor
/SYS/PS[0-1]/PRSNT	Entity presence	Power supply presence sensor
/SYS/PEM[0-1]/PRSNT	Entity presence	PCI ExpressModule presence sensor
/SYS/NEM[0-1]/PRSNT	Entity presence	Network Express Module (NEM) presence sensor
/SYS/CMM/PRSNT	Entity presence	Chassis Monitoring Module (CMM) presence sensor
/SYS/BL[0-9]/PRSNT	Entity presence	Blade presence sensor
/SYS/SLOTID	Entity presence	Blade's slot ID
/SYS/MB/P[0-1]/PRSNT	Entity presence	CPU presence sensor
/SYS/MB/P[0-1]/D[0-8]/PRSNT	Entity presence	DIMM presence sensor
/SYS/MB/RFEM[0-1]/PRSNT	Entity presence	Fabric Expansion Module (FEM) presence sensor

TABLE 2-7 Presence Sensors (*Continued*)

Sensor Name	Sensor Type	Description
/SYS/MB/REM/PRSNT	Entity presence	RAID Expansion Module (REM) presence sensor
/SYS/MB/FMOD/PRSNT	Entity presence	Flash Module (FMOD) presence sensor
/SYS/MB/RFEM[0-1]/ESM/PRSNT	Entity presence	Energy Storage Module (ESM) presence sensor

System Indicators

TABLE 2-8 describes the system indicators.

TABLE 2-8 System Indicators

Sensor Name	Description
/SYS/OK	Front panel OK/Power green LED
/SYS/LOCATE	Front panel Locate white LED
/SYS/SERVICE	Front panel Service amber LED
/SYS/OK2RM	Front panel OK To Remove blue LED
/SYS/HDD[0-3]/OK2RM	Storage drive OK To Remove blue LED
/SYS/HDD[0-3]/SERVICE	Storage drive Service amber LED
/SYS/RFEM[0-1]/SERVICE	Storage drive RFEM Service indicator
/SYS/FMOD[0-1]/SERVICE	FMOD Service indicator
/SYS/MB/P[0-1]/SERVICE	CPU Service indicator
/SYS/MB/P[0-1]/D[0-8]/SERVICE	DIMM Service indicator

SNMP and PET Message Reference Information

This section describes Simple Network Management Protocol (SNMP) and Platform Event Trap (PET) messages that are generated by devices being monitored by ILOM.

- [“SNMP Traps” on page 20](#)
- [“PET Event Messages” on page 26](#)

SNMP Traps

SNMP Traps are generated by the SNMP agents that are installed on the SNMP devices being managed by ILOM. Oracle ILOM receives the SNMP Traps and converts them into SNMP event messages that appear in the event log. For more information about the SNMP event messages that might be generated on your system, see [TABLE 2-9](#).

TABLE 2-9 SNMP Event Messages

SNMP Trap Message	ILOM Event Message	Severity and Description	Sensor Name
Memory SNMP Events			
sunHwTrapMemoryFault	fault.memory.channel.misconfigured	Major; A memory component is suspected of causing a fault	/SYS/MB/P/D
sunHwTrapMemoryFault Cleared	fault.memory.channel.misconfigured	Informational; A memory component fault has been cleared	/SYS/MB/P/D
sunHwTrapComponentFault	fault.memory.intel.dimm.none	Major; A memory component is suspected of causing a fault	/SYS/MB
	fault.memory.conroller.input-invalid		
	fault.memory.controller.init-failed		
	fault.memory.intel.dimm.population-invalid		

TABLE 2-9 SNMP Event Messages (*Continued*)

SNMP Trap Message	ILOM Event Message	Severity and Description	Sensor Name
sunHwTrapComponentFault Cleared	fault.memory.intel.dimm.none	Informational; A memory component fault has been cleared	/SYS/MB
	fault.memory.conroller.input-invalid		
	fault.memory.controller.init-failed		
	fault.memory.intel.dimm.popul ation-invalid		
sunHwTrapMemoryFault	fault.memory.intel.dimm.incom patible	Major; A memory component is suspected of causing a fault	/SYS/MB/P/D
	fault.memory.intel.dimm.incom patible-maxranks		
	fault.memory.intel.dimm.incom patible-quadrank		
sunHwTrapMemoryFault Cleared	fault.memory.intel.dimm.incom patible	Informational; A memory component fault has been cleared	/SYS/MB/P/D
	fault.memory.intel.dimm.incom patible-maxranks		
	fault.memory.intel.dimm.incom patible-quadrank		
Environmental SNMP Events			
sunHwTrapPowerSupplyFault	fault.chassis.env.power.loss	Major; A power supply component is suspected of causing a fault	/SYS/PS
sunHwTrapPowerSupplyFault Cleared	fault.chassis.env.power.loss	Informational; A power supply component fault has been cleared	
sunHwTrapComponentFault	fault.chassis.env.temp.over-fail	Major; A component is suspected of causing a fault	/SYS/
sunHwTrapComponentFault Cleared	fault.chassis.env.temp.over-fail	Informational; A component fault has been cleared	

TABLE 2-9 SNMP Event Messages (*Continued*)

SNMP Trap Message	ILOM Event Message	Severity and Description	Sensor Name
sunHwTrapTempCritThresholdExceeded	Lower critical threshold exceeded	Major; A temperature sensor has reported that its value has gone above an upper critical threshold setting or below a lower critical threshold setting	/SYS/DBP/T_A MB
sunHwTrapTempCritThresholdDeasserted	Lower critical threshold no longer exceeded	Informational; A temperature sensor has reported that its value is in the normal operating range	
sunHwTrapTempNonCritThresholdExceeded	Upper noncritical threshold exceeded	Minor; A temperature sensor has reported that its value has gone above an upper critical threshold setting or below a lower critical threshold setting	
sunHwTrapTempOk	Upper noncritical threshold no longer exceeded	Informational; A temperature sensor has reported that its value is in the normal operating range	
sunHwTrapTempFatalThresholdExceeded	Lower fatal threshold exceeded	Critical; A temperature sensor has reported that its value has gone above an upper fatal threshold setting or below a lower fatal threshold setting	
sunHwTrapTempFatalThresholdDeasserted	Lower fatal threshold no longer exceeded	Informational; A temperature sensor has reported that its value has gone below an upper fatal threshold setting or above a lower fatal threshold setting	

TABLE 2-9 SNMP Event Messages (*Continued*)

SNMP Trap Message	ILOM Event Message	Severity and Description	Sensor Name
sunHwTrapTempFatalThresholdExceeded	Upper fatal threshold exceeded	Critical; A temperature sensor has reported that its value has gone above an upper fatal threshold setting or below a lower fatal threshold setting	/SYS/T_AMB
sunHwTrapTempCritThresholdExceeded	Upper critical threshold exceeded	Major; A temperature sensor has reported that its value has gone above an upper critical threshold setting or below a lower critical threshold setting	
sunHwTrapTempCritThresholdDeasserted	Upper critical threshold no longer exceeded	Informational; A temperature sensor has reported that its value is in the normal operating range	
sunHwTrapTempFatalThresholdDeasserted	Upper fatal threshold no longer exceeded	Informational; A temperature sensor has reported that its value has gone below an upper fatal threshold setting or above a lower fatal threshold setting	

TABLE 2-9 SNMP Event Messages (*Continued*)

SNMP Trap Message	ILOM Event Message	Severity and Description	Sensor Name
sunHwTrapComponentError	Assert	Major; A power supply sensor has detected an error	/SYS/HOT /SYS/PS <i>n</i> /Sn/V_OUT_OK
sunHwTrapComponentOk	Deassert	Informational; A power supply sensor has returned to its normal state	/SYS/PS <i>n</i> /Sn/V_OUT_OK /SYS/PS <i>n</i> /Sn/V_OUT_OK /SYS/PS <i>n</i> /Sn/V_OUT_OK /SYS/PS <i>n</i> /Sn/V_OUT_OK /SYS/PS <i>n</i> /Sn/V_OUT_OK
Device SNMP Events			
sunHwTrapComponentFault	fault.chassis.device.missing	Major; A component is suspected of causing a fault	/SYS/
sunHwTrapComponentFault Cleared	fault.chassis.device.missing	Informational; A component fault has been cleared	
sunHwTrapComponentFault	fault.chassis.device.fail	Major; A component is suspected of causing a fault	/SYS/CMM
sunHwTrapComponentFault Cleared	fault.chassis.device.fail	Informational; A component fault has been cleared	
sunHwTrapIOFault	fault.chassis.device.fail	Major; A component in the IO subsystem is suspected of causing a fault	/SYS/NEM
sunHwTrapIOFaultCleared	fault.chassis.device.fail	Informational; An IO subsystem component fault has been cleared	
Power Supply SNMP Events			

TABLE 2-9 SNMP Event Messages (*Continued*)

SNMP Trap Message	ILOM Event Message	Severity and Description	Sensor Name
sunHwTrapPowerSupplyError	Assert	Major; A power supply sensor has detected an error	/SYS/PWRBS
sunHwTrapPowerSupplyOk	Deassert	Informational; A power supply sensor has returned to its normal state	
sunHwTrapPowerSupplyFault	fault.chassis.env.power.loss	Major; A power supply component is suspected of causing a fault	/SYS/PS /SYS/PS
sunHwTrapPowerSupplyFault Cleared	fault.chassis.env.power.loss	Informational; A power supply component fault has been cleared	

PET Event Messages

PET event messages are generated by systems with Alert Standard Format (ASF) or an IPMI baseboard management controller. The PET events provide advance warning of possible system failures. For more information about the PET event messages that might occur on Oracle’s Sun Netra X6270 M2 server module, see [TABLE 2-10](#).

TABLE 2-10 PET Event Messages

PET Event Message	ILOM Event Message	Severity and Description	Sensor Name
System Power Events			
petTrapPowerUnitStateDeassertedAssert	PowerSupply sensor ASSERT	Critical; A run-time power fault has occurred	/SYS/PWRBS
petTrapPowerSupplyStateAssertedAssert	PowerSupply sensor DEASSERT	Informational; Power supply is connected to AC Power	
Entity Present Events			

TABLE 2-10 PET Event Messages (*Continued*)

PET Event Message	ILOM Event Message	Severity and Description	Sensor Name
petTrapProcessorPresence DetectedDeassert	EntityPresence Insert	Critical; A processor is absent or has been removed.	/SYS/HOSTPOWER /SYS/CMM/PRSNT /SYS/MB/REM/PRSNT /SYS/MB/RFEM0/PRSNT /SYS/MB/RFEM1/PRSNT /SYS/PEM0/PRSNT /SYS/PEM1/PRSNT /SYS/MB/P0/PRSNT /SYS/MB/P1/PRSNT /SYS/MB/P0/D0/PRSNT /SYS/MB/P0/D1/PRSNT /SYS/MB/P0/D2/PRSNT /SYS/MB/P0/D3/PRSNT /SYS/MB/P0/D4/PRSNT /SYS/MB/P0/D5/PRSNT /SYS/MB/P0/D6/PRSNT /SYS/MB/P0/D7/PRSNT /SYS/MB/P0/D8/PRSNT /SYS/MB/P1/D0/PRSNT /SYS/MB/P1/D1/PRSNT /SYS/MB/P1/D2/PRSNT /SYS/MB/P1/D3/PRSNT /SYS/MB/P1/D4/PRSNT /SYS/MB/P1/D5/PRSNT /SYS/MB/P1/D6/PRSNT /SYS/MB/P1/D7/PRSNT /SYS/MB/P1/D8/PRSNT /SYS/HDD0/PRSNT /SYS/HDD1/PRSNT /SYS/HDD2/PRSNT /SYS/HDD3/PRSNT> /SYS/MB/RFEM0/FMOD0/ PRSNT /SYS/MB/RFEM0/FMOD1/ PRSNT /SYS/MB/RFEM0/ESM/PRS NT

TABLE 2-10 PET Event Messages (*Continued*)

PET Event Message	ILOM Event Message	Severity and Description	Sensor Name
petTrapProcessorPresence DetectedDeassert (<i>continued</i>)			/SYS/NEM0/PRSNT /SYS/NEM1/PRSNT /SYS/BL0/PRSNT /SYS/BL1/PRSNT /SYS/BL2/PRSNT /SYS/BL3/PRSNT /SYS/PS0/PRSNT /SYS/PS1/PRSNT /SYS/PS2/PRSNT /SYS/PS3/PRSNT
petTrapEntityPresenceDe viceInsertedAssert	EntityPresence Remove	Informational; A device is present or has been inserted	/SYS/HOSTPOWER /SYS/CMM/PRSNT /SYS/MB/REM/PRSNT /SYS/MB/RFEM0/PRSNT /SYS/MB/RFEM1/PRSNT /SYS/PEM0/PRSNT /SYS/PEM1/PRSNT /SYS/MB/P0/PRSNT /SYS/MB/P1/PRSNT /SYS/MB/P0/D0/PRSNT /SYS/MB/P0/D1/PRSNT /SYS/MB/P0/D2/PRSNT /SYS/MB/P0/D3/PRSNT /SYS/MB/P0/D4/PRSNT /SYS/MB/P0/D5/PRSNT /SYS/MB/P0/D6/PRSNT /SYS/MB/P0/D7/PRSNT /SYS/MB/P0/D8/PRSNT /SYS/MB/P1/D0/PRSNT /SYS/MB/P1/D1/PRSNT /SYS/MB/P1/D2/PRSNT /SYS/MB/P1/D3/PRSNT /SYS/MB/P1/D4/PRSNT /SYS/MB/P1/D5/PRSNT /SYS/BL0/PRSNT

TABLE 2-10 PET Event Messages (*Continued*)

PET Event Message	ILOM Event Message	Severity and Description	Sensor Name
petTrapEntityPresenceDe viceInsertedAssert (<i>continued</i>)	EntityPresence Remove	Informational; A device is present or has been inserted	/SYS/MB/P1/D6/PRSNT /SYS/MB/P1/D7/PRSNT /SYS/MB/P1/D8/PRSNT /SYS/HDD0/PRSNT /SYS/HDD1/PRSNT /SYS/HDD2/PRSNT /SYS/HDD3/PRSNT /SYS/MB/RFEM0/FMOD0/ PRSNT /SYS/MB/RFEM0/FMOD1/ PRSNT /SYS/MB/RFEM0/ESM/PRS NT /SYS/NEM0/PRSNT /SYS/NEM1/PRSNT /SYS/BL1/PRSNT /SYS/BL2/PRSNT /SYS/BL3/PRSNT /SYS/PS0/PRSNT /SYS/PS1/PRSNT /SYS/PS2/PRSNT /SYS/PS3/PRSNT
Environmental Events			
petTrapTemperatureState DeassertedDeassert	Temperature sensor ASSERT	Informational; Temperature event occurred	/SYS/HOT
petTrapTemperatureState DeassertedDeassert	Temperature sensor DEASSERT	Critical; Temperature event occurred	

TABLE 2-10 PET Event Messages (*Continued*)

PET Event Message	ILOM Event Message	Severity and Description	Sensor Name
petTrapTemperatureUpperNonRecoverableGoingLowDeassert	Temperature Upper non-critical threshold has been exceeded	Major; Temperature has decreased below upper non-recoverable threshold	/SYS/MB/T_AMB
petTrapTemperatureStateAssertedAssert	Temperature Upper non-critical threshold no longer exceeded	Critical; Temperature event occurred. Possible cause: CPU is too hot.	
petTrapTemperatureUpperCriticalGoingHigh	Temperature Lower fatal threshold has been exceeded	Major; Temperature has increased above upper critical threshold	
petTrapTemperatureUpperCriticalGoingLowDeassert	Temperature Lower fatal threshold no longer exceeded	Warning; Temperature has decreased below upper critical threshold	
petTrapTemperatureLowerNonCriticalGoingLow	Temperature Lower critical threshold has been exceeded	Warning; Temperature has decreased below lower non-critical threshold	
petTrapTemperatureLowerNonCriticalGoingHighDeassert	Temperature Lower critical threshold no longer exceeded	Informational; Temperature has returned to normal	
petTrapTemperatureUpperNonCriticalGoingHigh	Temperature Upper critical threshold has been exceeded	Warning; Temperature has increased above upper non-critical threshold	
petTrapTemperatureUpperNonCriticalGoingLowDeassert	Temperature Upper critical threshold no longer exceeded	Informational; Temperature has returned to normal	
petTrapTemperatureLowerCriticalGoingLow	Temperature Lower fatal threshold has been exceeded	Major; Temperature has decreased below lower critical threshold	
petTrapTemperatureLowerCriticalGoingHighDeassert	Temperature Lower fatal threshold no longer exceeded	Warning; Temperature has increased above lower critical threshold	
petTrapTemperatureLowerNonRecoverableGoingHighDeassert	Temperature Lower non-critical threshold has been exceeded	Major; Temperature has increased above lower non-recoverable threshold	
petTrapTemperatureUpperNonRecoverableGoingHigh	Temperature Lower non-critical threshold no longer exceeded	Critical; Temperature has increased above upper non-recoverable threshold	
Component, Device, and Firmware Events			

TABLE 2-10 PET Event Messages (*Continued*)

PET Event Message	ILOM Event Message	Severity and Description	Sensor Name
petTrapOEMStateDeassertedAssert	OEMReserved sensor ASSERT	Informational; An ESM fault has occurred (OEM State Deasserted assert)	/SYS/MB/RFEM _n /FAULT /SYS/MB/RFEM _n /ESM/FAULT
petTrapOEMPredictiveFailureAsserted	OEMReserved sensor DEASSERT	Major; OEM Predictive Failure Asserted	
petTrapOEMPredictiveFailureDeasserted	OEMReserved reporting Predictive Failure	Informational; OEM Predictive Failure Deasserted	/SYS/CMM/ERR /SYS/NEM _n /ERR /SYS/NEM _n /ERR
petTrapSystemFirmwareError	OEMReserved Return to normal	Informational; System Firmware Error reported	/SYS/BL _n /ERR /SYS/BL _n /ERR /SYS/BL _n /ERR /SYS/BL _n /ERR
petTrapModuleBoardTransitionToRunningAssert	Module Transition to Running assert	Informational	/SYS/NEM _n /STATE /SYS/NEM _n /STATE /SYS/BL _n /STATE /SYS/BL _n /STATE /SYS/BL _n /STATE /SYS/BL _n /STATE
petTrapModuleBoardTransitionToInTestAssert	Module Transition to In Test assert	Informational	/SYS/NEM _n /STATE /SYS/NEM _n /STATE /SYS/BL _n /STATE /SYS/BL _n /STATE /SYS/BL _n /STATE /SYS/BL _n /STATE
petTrapModuleBoardTransitionToPowerOffAssert	Module Transition to Power Off assert	Informational	/SYS/NEM _n /STATE /SYS/NEM _n /STATE /SYS/BL _n /STATE /SYS/BL _n /STATE /SYS/BL _n /STATE /SYS/BL _n /STATE
petTrapModuleBoardTransitionToOnLineAssert	Module Transition to On Line assert	Informational	/SYS/NEM _n /STATE /SYS/NEM _n /STATE /SYS/BL _n /STATE /SYS/BL _n /STATE /SYS/BL _n /STATE /SYS/BL _n /STATE

TABLE 2-10 PET Event Messages (*Continued*)

PET Event Message	ILOM Event Message	Severity and Description	Sensor Name
Undocumented PET 1378820	Module Transition to Off Line assert	Informational	/SYS/NEM _n /STATE /SYS/NEM _n /STATE /SYS/BL _n /STATE /SYS/BL _n /STATE /SYS/BL _n /STATE /SYS/BL _n /STATE
petTrapModuleBoardTransitionToOffDutyAssert	Module Transition to Off Duty assert	Informational	/SYS/NEM _n /STATE /SYS/NEM _n /STATE /SYS/BL _n /STATE /SYS/BL _n /STATE /SYS/BL _n /STATE /SYS/BL _n /STATE
petTrapModuleBoardTransitionToDegradedAssert	Module Transition to Degraded assert	Informational	/SYS/NEM _n /STATE /SYS/NEM _n /STATE /SYS/BL _n /STATE /SYS/BL _n /STATE /SYS/BL _n /STATE /SYS/BL _n /STATE
petTrapModuleBoardTransitionToPowerSaveAssert	Module Transition to Power Save assert	Informational	/SYS/NEM _n /STATE /SYS/NEM _n /STATE /SYS/BL _n /STATE /SYS/BL _n /STATE /SYS/BL _n /STATE /SYS/BL _n /STATE
petTrapModuleBoardInstallErrorAssert	Module Install Error assert	Informational	/SYS/NEM _n /STATE /SYS/NEM _n /STATE /SYS/BL _n /STATE /SYS/BL _n /STATE /SYS/BL _n /STATE /SYS/BL _n /STATE
Power Supply Events			
petTrapVoltageStateDeassertedDeassert	Voltage sensor ASSERT	Informational; Voltage event occurred	/SYS/PS _n /V_OUT_OK /SYS/PS _n /V_OUT_OK
petTrapVoltageStateAssertedDeassert	Voltage sensor DEASSERT		/SYS/PS _n /V_OUT_OK /SYS/PS _n /V_OUT_OK

TABLE 2-10 PET Event Messages (*Continued*)

PET Event Message	ILOM Event Message	Severity and Description	Sensor Name
Undocumented PET 132097	Voltage reporting Predictive Failure	Informational	/SYS/PSn/V_IN_ERR /SYS/PSn/V_IN_ERR
Undocumented PET 132096	Voltage Return to normal	Informational	/SYS/PSn/V_IN_ERR /SYS/PSn/V_IN_ERR
Fan Events			
petTrapFanPredictiveFailureDeasserted	Fan reporting Predictive Failure	Informational; Fan Predictive Failure state has been cleared	/SYS/FMn/ERR /SYS/FMn/ERR /SYS/FMn/ERR
petTrapFanLowerNonRecoverableGoingLow	Fan Return to normal	Critical; Fan speed has decreased below lower non-recoverable threshold. Fan failed or removed.	/SYS/FMn/ERR

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