Sun™ Integrated Lights Out Manager (ILOM) Feature Updates and Release Notes

Sun Microsystems, Inc.
www.sun.com

Part No. 820-7329-10
March 2009, Revision A

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Contents

Preface

Sun Integrated Lights Out Manager (ILOM) Feature Updates and Release Notes describes enhancements that have been made to ILOM firmware since the ILOM 3.0 release.

This document is written for system administrators who are familiar with networking concepts and basic system management protocols.

With ILOM, you can remotely monitor and manage your Sun system without consuming operating system resources. ILOM provides fully featured interfaces, including a browser-based web interface, a command-line interface, an SNMP interface, and an IPMI interface. These interfaces are based on industry standards and are intuitive to use.

Related Documentation

To fully understand the information that is presented in this guide, use this document in conjunction with the documents listed in the following table. These documents are available online at:

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

The following table lists the ILOM 3.0 Documentation Collection.

TABLE P-1 ILOM 3.0 Documentation Collection

Title	Content	Part Number	Format
Sun Integrated Lights Out Manager (ILOM) 3.0 Concepts Guide	Information that describes ILOM features and functionality	820-6410	PDF HTML
Sun Integrated Lights Out Manager (ILOM) 3.0 Getting Started Guide	Information and procedures for network connection, logging in to ILOM for the first time, and configuring a user account or a directory service	820-5523	PDF HTML
Sun Integrated Lights Out Manager (ILOM) 3.0 Web Interface Procedures Guide	Information and procedures for accessing ILOM functions using the ILOM web interface	820-6411	PDF HTML
Sun Integrated Lights Out Manager (ILOM) 3.0 CLI Procedures Guide	Information and procedures for accessing ILOM functions using the ILOM CLI	820-6412	PDF HTML
Sun Integrated Lights Out Manager (ILOM) 3.0 SNMP and IPMI Procedures Guide	Information and procedures for accessing ILOM functions using SNMP or IPMI management hosts	820-6413	PDF HTML
Sun Integrated Lights Out Manager Supplement	Platform-specific document that describes additional ILOM features and functionality related to a specific server that is not documented in the ILOM 3.0 Documentation Collection	Specific to document	PDF HTML

Documentation, Support, and Training

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

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 *Concept's Guide*. These are called *class* options. You *must* be superuser to do this. To delete a file, type `rm` *filename*.

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

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

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

Sun Integrated Lights Out Manager (ILOM) Feature Updates and Release Notes, part number 820-7329-10.

CHAPTER 1

About This Guide

Sun Integrated Lights Out Manager (ILOM) Feature Updates and Release Notes describes those new features and issues that are part of an ILOM 3.x.x update version. ILOM update versions are typically released every two to three months. New ILOM 3.x.x features that are common to all Sun rackmount servers and server modules (blades) are presented in this guide.

In addition, information is presented in some chapters that is not new to the ILOM 3.x.x update. This information is provided to augment the ILOM 3.0 Documentation Collection.

Finding New ILOM Release Information

Each chapter in this guide documents new ILOM features and issues associated with a specific ILOM update version. The first update version described in this document is for ILOM 3.0.3. When subsequent ILOM update versions are released, a new chapter will be added to this guide for those update versions. Therefore, a history is provided for the features and issues that were incorporated into the ILOM firmware for all update versions.

ILOM 3.0 Version Numbers

ILOM 3.0 has implemented a new version numbering scheme to help you identify which version of ILOM you are running on your system. The numbering scheme includes a five-field string, for example, `a.b.c.d.e`, where:

- `a` – Represents the major version of ILOM.
- `b` – Represents a minor version of ILOM.
- `c` – Represents the update version of ILOM.
- `d` – Represents a micro version of ILOM. Micro versions are managed per platform or group of platforms. See your platform Product Notes for details.
- `e` – Represents a nano version of ILOM. Nano versions are incremental iterations of a micro version.

For example, ILOM 3.1.2.1.a would designate:

- ILOM 3 as the major version of ILOM
- ILOM 3.1 as a minor version of ILOM 3
- ILOM 3.1.2 as the second update version of ILOM 3.1
- ILOM 3.1.2.1 as a micro version of ILOM 3.1.2
- ILOM 3.1.2.1.a as a nano version of ILOM 3.1.2.1

Related Documentation

To fully understand the information that is presented in this guide, use this document in conjunction with the documents listed in "Related Documentation" on page 1. These documents are available online at:

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

First read the ILOM 3.0 Concepts Guide to learn about ILOM's features and functionality. To set up a new system supported by ILOM, refer to the ILOM 3.0 Getting Started Guide, where you will find the procedures for connecting to the network, logging in to ILOM for the first time, and configuring a user account or directory service. Then, decide which ILOM interface you want to use to perform other ILOM tasks. You can now refer to the the appropriate ILOM 3.0 Procedures Guide for your selected interface.

For platform-specific ILOM updates, refer to your ILOM Supplement, which presents ILOM features and tasks that are specific to the server platform you are using. The ILOM Supplement is part of the documentation set for your server.

CHAPTER 2

Updates to the ILOM 3.0.3 Firmware

This chapter describes the new features and functionality that have been incorporated into the ILOM 3.0.3 release. Procedures to implement the new functionality are explained. System requirements and how to download the new firmware are also described. In addition, this chapter provides an overview of ILOM's implementation on a chassis monitoring module in a Sun Blade Modular System. Issues that have been resolved in the ILOM 3.0.3 release are also described.

Topics in the chapter include:

System Requirements and Firmware Compatibility

To help you determine system requirements and ILOM firmware compatibility, go to the following site:

http://www.sun.com/systemmanagement/ilom.jsp.

You can also download the latest version of ILOM firmware from this site.

Power Management Information

This section describes the new power management feature that provides rolling averages of power consumption in 15-, 30-, and 60-second intervals. It also briefly discusses power metrics that will appear on more platforms in future releases.

Topics

Description	Links
Learn about power history information that is now available	• "Power Management Information" on page 9
Learn about platform-specific power metrics that will become more available and refined in future releases of ILOM	• "Advanced Power Metrics" on page 14

Power Management Information

The `/CMM/powermgmt` node under the CLI and the System Monitoring --> Power Management page in the ILOM web interface display three types of power information:

- **Actual Power** – Represents consumed power of the rackmount server or chassis system. On a chassis monitoring module (CMM), this is the input power consumed by the entire chassis or shelf (all blades, NEMS, fans, and so forth). This value is also made available via the `/SYS/VPS` sensor.
- **Available Power** – Rack System: Maximum input power that the power supplies are capable of consuming. Chassis System: Amount of power guaranteed available to the server module by the chassis.
- **Permitted Power** – Rack System: Maximum input power that the server guarantees it will consume at any instant. Chassis System: Maximum power a server module guarantees it will consume at any instant

Some platforms provide platform-specific power information under the `/SP/powermgmt/advanced` node in the CLI or the Advanced Power Metrics table in the Power Management page in the web interface. Each advanced power metric includes a name, a unit, and a value. Refer to your ILOM Supplement for information about advanced power metrics support on your platform.

Note – Depending on your platform, the value for available power, permitted power, and actual power might not include the power consumed by the SP, which is generally fewer than 10 watts.

Power Consumption History

ILOM now displays rolling averages of power consumption in 15-, 30-, and 60-second intervals by leveraging ILOM's sensor history capability. Power consumption information is retrieved at a rate determined by the individual platform, which could range from 1 to 8 seconds, and usually averages around 3 to 5 seconds.

Note – Power consumption history is provided using the ILOM CLI and web interfaces. This information is not available through IPMI or SNMP.

▼ View Power Consumption History Using the CLI

Before You Begin

- To view power consumption history, you need the Read Only (o) role enabled.

Follow these steps to view power consumption history using the CLI:

1. **Log in to ILOM.**
2. **To display actual power consumption, type the following command:**
   - From the server SP:
     ->**show /SYS/VPS**
   - From the CMM:
     ->**show /CH/VPS**

   For example:

```
->show /CH/VPS

 /CH/VPS
    Targets:
        history

    Properties:
        type = Power Unit
        ipmi_name = VPS
        class = Threshold Sensor
        value = 1400.000 Watts
        upper_nonrecov_threshold = N/A
        upper_critical_threshold = N/A
        upper_noncritical_threshold = N/A
        lower_noncritical_threshold = N/A
        lower_critical_threshold = N/A
        lower_nonrecov_threshold = N/A
        alarm_status = cleared

    Commands:
        cd
        show
```

3. **To display 15-, 30-, and 60-second rolling power usage average, and to display a choice of targets for average consumption history, type the following command:**
   - From the server SP:
     ->**show /SYS/VPS/history**

- From the CMM:
  ->**show /CH/VPS/history**

For example:

```
->show /CH/VPS/history

 /CH/VPS/history
    Targets:
        0 (1 Minute Average, 1 Hour History)
        1 (1 Hour Average, 14 Day History)

    Properties:
        15sec_average = 1210.000
        30sec_average = 1400.000
        60sec_average = 1800.000

    Commands:
        cd
        show
```

4. To display average consumption history by the minute or hour respectively, type the following command with the appropriate target named. In the following example, average per minute is selected:

- From the server SP:
  ->**show /SYS/VPS/history/0**
- From the CMM:
  ->**show /CH/VPS/history/0**

For example:

```
->show /CH/VPS/history/0

/CH/VPS/history/
   Targets:
       list

   Properties:
       average = 1500.000
       minimum = 1500.000 at Mar  4 08:51:24
       maximum = 1500.000 at Mar  4 08:51:23
       period = 1 Minute Average
       depth = 1 Hour History

   Commands:
       cd
       show
```

5. **To display sample set details such as time stamp and power consumed in watts, type:**

   - From the server SP:
     ->**show /SYS/VPS/history/0/list**
   - From the CMM:
     ->**show /CH/VPS/history/0/list**

   For example:

```
->show /CH/VPS/history/0/list

/CH/VPS/history/0/list
   Targets:

   Properties:
       Mar  4 08:52:23 = 1500.000
       Mar  4 08:51:24 = 1500.000
       Mar  4 08:50:24 = 1500.000
       Mar  4 08:49:24 = 1500.000
       Mar  4 08:48:24 = 1500.000
       Mar  4 08:47:23 = 1500.000
   Commands:
       cd
       show
```

▼ View Power Consumption History Using the Web Interface

Before You Begin

- To view power consumption history, you need the Read Only (o) role enabled.

Follow these steps to view power consumption history using the web interface:

1. **Log in to ILOM.**
2. **Select System Monitoring --> Power Management.**

   The Power Management page appears.
3. **Click on the Power History jump link.**

   Two tables appear that show Power Usage Average and Power History.

For example:

Power History

Power Usage Average

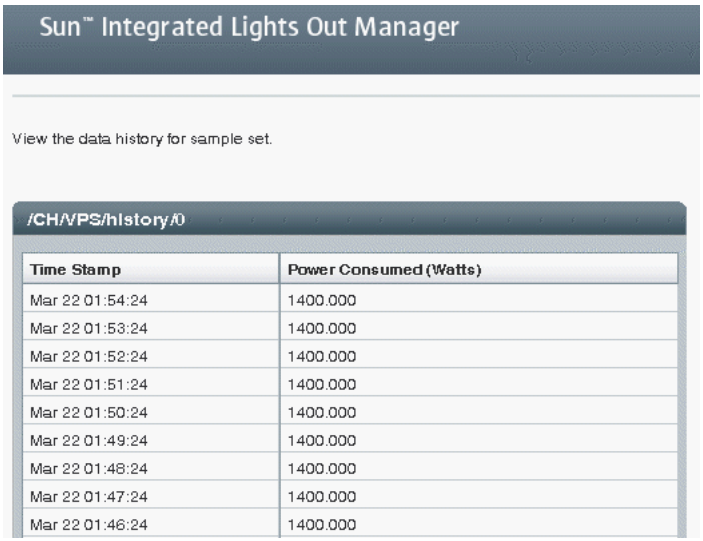
Sensor Name	15 Seconds Avg (Watts)	30 Seconds Avg (Watts)	60 Seconds Avg (Watts)
/CH/VPS	1400.000	1400.000	1400.000
/CH/BL0/VPS	No Data	No Data	No Data
/CH/BL1/VPS	No Data	No Data	No Data
/CH/BL2/VPS	No Data	No Data	No Data
/CH/BL3/VPS	No Data	No Data	No Data
/CH/BL4/VPS	No Data	No Data	No Data
/CH/BL5/VPS	No Data	No Data	No Data
/CH/BL6/VPS	No Data	No Data	No Data
/CH/BL7/VPS	No Data	No Data	No Data
/CH/BL8/VPS	10.000	10.000	10.000
/CH/BL9/VPS	10.000	10.000	10.000

Power History

Sensor Name	Sample Set	Min Power Consumed (Watts)	Avg Power Consumed (Watts)	Max Power Consumed (Watts)	Time Period	Depth
/CH/VPS	0 (1 Minute Average, 1 Hour History)	1400.000 at Mar 22 01:47:24	1400.000	1400.000 at Mar 22 01:47:24	1 Minute Average	1 Hour History
/CH/VPS	1 (1 Hour Average, 14 Day History)	1282.835 at Mar 21 05:49:25	1385.788	1400.000 at Mar 22 01:49:24	1 Hour Average	14 Day History
/CH/BL0/VPS	0 (1 Minute Average, 1 Hour History)	No Data	No Data	No Data	1 Minute Average	1 Hour History

4. **To view detailed power history (such as time stamp and power consumed in watts), select any live entry in the Sample Set column.**

   The following figure shows the sample set results of the target `/CH/VPS/0`.



Advanced Power Metrics

The targets under `/CMM/powermgmt/advanced` provide additional, platform-specific information about the power configuration of the chassis. These targets currently include the following and might change with future releases:

- **HW Config Power** – The maximum power each installed blade and the entire chassis is capable of consuming
- **Allocated Power** – The amount of power allocated to each component, blade slot and entire chassis
- **Available Power** – The total power the chassis power supplies can provide
- **Redundant Power** – The amount of power reserved for redundancy
- **Permitted Power** – The amount of power the chassis is permitted to consume
- **Allocatable Power** – The permitted power not yet allocated to a component or server module

Other New ILOM Features

This section presents other new features that have been incorporated into the ILOM 3.0.3 release.

Topics

Description	Links
Learn how you can override the boot device settings in BIOS using the CLI or web interface	• "Enhanced Ability to Override BIOS Host Boot Device" on page 15 • "Configure BIOS Host Boot Device Override Using the CLI" on page 16 • "Configure BIOS Host Boot Device Override Using the Web Interface" on page 17
Learn how to clear faults from the event log after fixing the faulted component	• "Clear Faults After Replacement of Faulted Component" on page 18 • "View and Clear Faults Using the CLI" on page 20 • "View and Clear Faults Using the Web Interface" on page 21

Enhanced Ability to Override BIOS Host Boot Device

You can now use the CLI and web interface to select a host boot device, overriding the boot device order settings in BIOS. This ability gives the CLI and web interface parity with the existing IPMI interface. Now that this feature is available in the CLI and web interface, a user who has logged in to the SP can quickly and easily change this value without having to use IPMItool externally.

The primary purpose of the boot device override feature is to allow the administrator to perform a one-time manual override of the server's BIOS boot order settings. This enables the administrator to quickly configure a machine or group of machines to boot from another device, such as the PXE boot environment.

▼ Configure BIOS Host Boot Device Override Using the CLI

Before You Begin

- To configure BIOS host boot device override, you need the Reset and Host Control (`r`) role enabled.

Follow these steps to configure BIOS host boot device override using the CLI:

1. **Log in to ILOM.**
2. **Use the `cd` and `show` commands to navigate to the host system.**

```
->cd /HOST
/HOST

->show

/HOST
   Targets:
       diag

   Properties:
       boot_device = default
       generate_host_nmi = (Cannot show property)

   Commands:
       cd
       set
       show
```

3. **To set the host boot device for the next time the system is powered on, type:**

   ->**`set boot_device=`***value*

   Possible values are:

   - `default` – Setting the value to `default` means that there is no override to the BIOS settings. Setting to `default` will also clear any previously chosen selection.
   - `pxe` – Setting the value to `pxe` means that at the next host boot, the BIOS boot order settings will be temporarily bypassed and instead the host will boot from the network, following the PXE boot specification.
   - `disk` – Setting the value to `disk` means that at the next host boot, the BIOS boot order settings will be temporarily bypassed and instead the host will boot from the first disk as determined by BIOS. The specific disk chosen depends on configuration. Typically, hosts use this option by default and the host's behavior might not change by selecting this option.

- `diagnostic` – Setting the value to `diagnostic` means that at the next host boot, the BIOS boot order settings will be temporarily bypassed and instead the host will boot into the diagnostic partition, if configured.
- `cdrom` – Setting the value to `cdrom` means that at the next host boot, the BIOS boot order settings will be temporarily bypassed and instead the host will boot from the attached CD-ROM or DVD device.
- `bios` – Setting the value to `bios` means that at the next host boot, the BIOS boot order settings will be temporarily bypassed and instead the host will boot into the BIOS Setup screen.

▼ Configure BIOS Host Boot Device Override Using the Web Interface

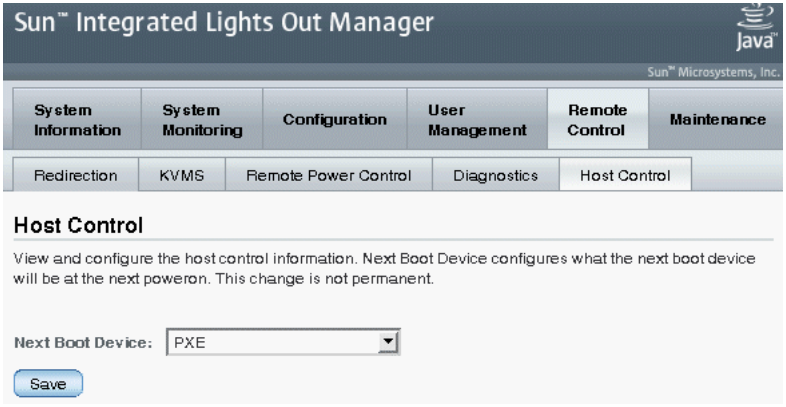
Before You Begin

- To configure BIOS host boot device override, you need the Reset and Host Control (`r`) role enabled.

Follow these steps to configure BIOS host boot device override using the web interface:

1. **Log in to ILOM.**
2. **Select Remote Control --> Host Control.**

   The Host Control page appears.



3. **From the Next Boot Device menu, select what the next boot device will be the next time the system is powered on.**

   Possible values are:

   - `default` – Setting the value to `default` means that there is no override to the BIOS settings. Setting to `default` will also clear any previously chosen selection.
   - `pxe` – Setting the value to `pxe` means that at the next host boot, the BIOS boot order settings will be temporarily bypassed and instead the host will boot from the network, following the PXE boot specification.
   - `disk` – Setting the value to `disk` means that at the next host boot, the BIOS boot order settings will be temporarily bypassed and instead the host will boot from the first disk as determined by BIOS. The specific disk chosen depends on configuration. Typically, hosts use this option by default and the host's behavior might not change by selecting this option.
   - `diagnostic` – Setting the value to `diagnostic` means that at the next host boot, the BIOS boot order settings will be temporarily bypassed and instead the host will boot into the diagnostic partition, if configured.
   - `cdrom` – Setting the value to `cdrom` means that at the next host boot, the BIOS boot order settings will be temporarily bypassed and instead the host will boot from the attached CD-ROM or DVD device.
   - `bios` – Setting the value to `bios` means that at the next host boot, the BIOS boot order settings will be temporarily bypassed and instead the host will boot into the BIOS Setup screen.

4. **Click Save for your changes to take effect.**

Clear Faults After Replacement of Faulted Component

The ILOM-based service processor (SP) receives error telemetry about error events that occur within the major system components on the host (CPU, memory, and I/O hub) and environmental subsytem within the chassis (fan, power supplies, temperature, and so forth). The components and conditions are then diagnosed as fault events and captured in the ILOM event log.

The steps that are necessary to clear a fault are largely dependent on the type of server platform you are using (server module versus rackmount server). For example:

- ILOM-based faults that occur on a server module are NOT persistent once the server module has been properly prepared for removal and is physically removed from the chassis. Therefore, no service actions are required to clear the fault after the component is physically replaced. The fault message is captured in the ILOM event log for historical purposes.
- ILOM-based faults that occur on a rackmount server ARE persistent and might require service actions to clear the fault after the component is physically replaced, unless the component is a hot-swappable component (such as a fan or power supply). Hot-swappable components are platform-specific; therefore, refer to the platform documentation for a list of the hot-swappable components. The fault message is captured in the ILOM event log for historical purposes. On a rackmount server, you must manually clear the following faults after physically replacing the components, which are not hot-swappable:
  - CPU fault
  - DIMM (memory module) fault
  - PCI card fault
  - Motherboard fault (if the motherboard is not being replaced)
- ILOM-based faults that occur on components within the chassis that supports the server module are automatically cleared by the ILOM CMM, when the components are replaced. If the chassis-level component is not hot-serviceable, then the fault needs to be manually cleared from the ILOM CMM. The following faults on a chassis that supports server modules are automatically cleared after the components are replaced:
  - CMM fault
  - Fan fault
  - Power supply fault
  - Network express module (NEM) fault
  - PCI express module fault

Note – For more information about the ILOM fault management features offered on your system, refer to the ILOM 3.0 Documentation Collection and the documentation provided with the Sun server platform.

▼ View and Clear Faults Using the CLI

Before You Begin

- To view faults, you need the Read Only (o) role enabled. To clear faults, you need the Admin (a) role enabled.

Follow these steps to view and clear faults using the CLI:

1. **Log in to ILOM.**
2. **To view a list of components that have been faulted, type:**
   - From a server:
     ->**show /SP/faultmgmt**
   - From the CMM:
     ->**show /CMM/faultmgmt**
3. **To display fault messages in the ILOM event log, type:**
   - From the server:
     ->**show /SP/logs/event/list**
   - From the CMM:
     ->**show /CMM/logs/event/list**
4. **Fix or replace the faulted component.**
5. **To clear a fault on a component, type the following command:**

```
->set component_path clear_fault_action=true
Are you sure you want to clear component_path (y/n)?  y
Set 'clear_fault_action' to 'true'
```

Where *component_path* is one of the following faulted components:

- Processor
- Memory
- Motherboard
- Fan Module
- Power Supply
- CMM fault
- NEM fault
- PCI card fault

For example, to clear a processor fault, you would type the following:

```
 ->set /SYS/MB/P0 clear_fault_action=true
Are you sure you want to clear /SYS/MB/P0 (y/n)?  y
Set 'clear_fault_action' to 'true'
```

▼ View and Clear Faults Using the Web Interface

Before You Begin

- To view faults, you need the Read Only (o) role enabled. To clear faults, you need the Admin (a) role enabled.

Follow these steps to view and clear faults using the web interface:

1. **Log in to ILOM.**
2. **Select the Fault Management tab.**

   The Fault Management page appears, listing faulted components by ID, FRU, and TimeStamp. You can access additional information about the faulted component by clicking the faulted component ID.
3. **Alternatively, you can identify the fault status of a component from the Component Management page.**

   a. **Select the Components tab.**

   b. **Click on a component name to view the fault status.**

      The status of the component appears in a separate window.
4. **Fix or replace the faulted component.**
5. **To clear a fault on a component, select the radio button next to the faulted component. From the menu, choose Clear Fault.**

Resolved Issues

This section describes the issues that have been resolved in the ILOM 3.0.3 release. Specific change request (CR) identification numbers and workarounds for the issues are provided, where available.

Topics

Description	Links
Learn about the Alt-Graph key functionality on international keyboards	• "Alt-Graph Key Functionality on International Keyboards" on page 22
Learn about a web interface update for uploading an SSL certificate	• "Web Interface Does Not Display the Browse Button When Uploading Files" on page 23
Learn how SSH keys are now available without restarting the SSH server	• "Newly Generated SSH Keys Are Now Available Immediately Without Requiring SSH Server Restart" on page 24
Learn about a modification that enables you to use an IP address in your email address	• "Email Address Using IP Address Is Accepted in Alert Management Rule Query" on page 24
Learn about a minor fix to an incorrect error code	• "Loading SSH Host Key No Longer Results in Error Message" on page 24

Alt-Graph Key Functionality on International Keyboards

When running certain versions of the Sun Remote Console application (JavaRConsole) on a client, the Alt-Graph key works incorrectly on international keyboards.

This problem was addressed in two phases:

1. **Workaround**: A Workaround is provided that adds a short-cut key combination (`ALT-z`) for toggling on or off the "Right Alt" Keyboard menu item in Sun ILOM Remote Console. This Workaround does not depend on a specific version of the Java Development Kit (JDK). However, this Workaround is limited in that it is not possible to send the `ALT-GR` key directly. To use the Workaround, you must be running a version of Sun ILOM Remote Console that contains the supported short-cut key (`ALT-z`).

2. **Complete Solution**: This solution sends the `ALT-GR` key directly without any special Sun Remote Console menu options or intervention. However, it requires using a more recent version of the JDK. To use the Complete Solution, you must be running a version of Sun ILOM Remote Console that sends the `ALT-GR` key directly. The following JDK requirements also apply to the Complete Solution:
   - For Windows, use JDK 1.5 or higher.
   - For Solaris and Linux, use JDK 1.6 update 10 or higher.

   You can use the ILOM `version` command to determine which version of ILOM is running on a platform.

Note – Linux and Solaris versions of ILOM 3.x contain both the Workaround and Complete Solution. Windows versions of ILOM 3.x contain the functionality as described for the Complete Solution, but not the Workaround.

Web Interface Does Not Display the Browse Button When Uploading Files

CR 6787083

Issue: In earlier versions of ILOM, a configuration page did not display the Browse option to upload an SSL certificate in the following situations:

- When uploading a different SSL certificate and key for HTTPS access
- When configuring an optional certificate for LDAP/SSL
- When configuring an optional certificate for Active Directory
- When configuring user SSH keys
- When configuring backup and restore operations

Clicking the Upload button to obtain an SSL certificate prompted a new window to appear; however, you were unable to select and upload a file.

Update: This issue is fixed in the ILOM 3.0.3 release. The Browse option to upload an SSL certificate is now available.

Newly Generated SSH Keys Are Now Available Immediately Without Requiring SSH Server Restart

CR 6781487

Issue: When you are generating a new SSH key, you do not need to restart the SSH server for the new key to take effect. The new SSH key will become immediately available for new connections.

Update: This issue is fixed in the ILOM 3.0.3 release. SSH keys are now available for new connections immediately without a server restart.

Email Address Using IP Address Is Accepted in Alert Management Rule Query

CR 6776214

Issue: When using ILOM's alert management feature, previous versions of ILOM required you to use a host name-based email address. You can now send an email alert using an IP address.

Update: A separate check for IP-based email addresses has been added to the ILOM 3.0.3 release so that if the original validation fails, the system will then check specifically for an email with an IP address.

Loading SSH Host Key No Longer Results in Error Message

CR 6776200

Issue: In earlier versions of ILOM, using the `load` command to upload an SSH host key might result in a `set: Command Failed` error message, even when the SSH host key was uploaded successfully. This error message no longer appears in ILOM 3.0.3 and later versions.

Update: This issue is fixed in the ILOM 3.0.3 release.

Known Issues

This section describes known issues in the ILOM 3.0.3 firmware.

Topics

Description	Links
Unexpected BIOS behavior	• "BIOS Upgrade Is Delayed After SP Reboot" on page 25
Unexpected behavior when resetting to defaults	• "External Serial Port Settings Do Not Reset to Default Value" on page 26
Hourly timestamp behavior	• "Hourly Power Average Timestamp Does Not Account for Increments of Less Than One Hour" on page 26
SSH keys are not loaded	• "SSH Keys Fail to Restore After a Backup/Restore" on page 27

BIOS Upgrade Is Delayed After SP Reboot

CR 6813514

Issue: When you upgrade the SP firmware, you can choose to upgrade the BIOS firmware immediately or to delay the BIOS upgrade until a later time. If you choose to immediately upgrade the BIOS, the SP firmware is upgraded, the host is forced to power off, and the SP reboots. If you choose to delay the BIOS upgrade, the SP firmware is upgraded and the SP reboots.

Regardless of your choice, the BIOS is not programmed immediately. Instead, the SP reboots the new 3.x image and waits for the host to power off. The host will be powered off if you chose the immediate BIOS upgrade option and will begin to program the host BIOS. This process can take two to five minutes to complete.

However, two issues can occur:

- Issue 1: If you chose the immediate BIOS upgrade option, while the host BIOS is being programmed, there is no indication that the BIOS upgrade is being programmed. If you power on the host while the BIOS is being programmed, the BIOS will become garbled and the host will not boot. The solution is to power off the host, wait two to five minutes for the SP to program the BIOS, then power on the host.

- Issue 2: If you chose the delayed BIOS option and do not power off the host, the BIOS will not be upgraded. The host must be powered off for the SP to program the BIOS. If you simply reboot the host, the old BIOS will still be present. Mismatched BIOS and SP firmware might result in incorrect system behavior.

Workaround: It is strongly recommended that you power off the host as soon as possible following an SP firmware upgrade, and wait at least five minutes before rebooting the system.

External Serial Port Settings Do Not Reset to Default Value

CR 6676339

Issue: The `reset_to_defaults` command enables a user to reset the ILOM configuration back to the default value. However, external serial port settings are not reset when `reset_to_defaults` action is performed.

Workaround: Use the CLI or web interface to set the external port settings to the desired values before rebooting ILOM. The external serial port settings can be accessed by typing `/SP/serial/external` in CLI or by selecting Configuration --> Serial Port in the web interface.

Hourly Power Average Timestamp Does Not Account for Increments of Less Than One Hour

CR 6803961

Issue: When logging in to a CMM using the CLI, the hourly power history includes an entry with a timestamp one hour into the future. This entry shows the average power from the prior timestamp to the current moment.

For example, a system is set to take power averages every hour, starting at 1:23 a.m. The first hourly power average increment will end at 2:23 a.m. At 1:24 a.m., an entry with timestamp 2:23 a.m. will be visible and contains the average power from 1:23 a.m. to 1:24 a.m. That entry will continue to be updated until 2:23 a.m., at which point, the hourly power average increment concludes, and the new hourly average timestamp will display as 3:23 a.m.

Update: This issue will be fixed in the ILOM 3.0.4 release.

SSH Keys Fail to Restore After a Backup/Restore

CR 6808138

Issue: When backing up and restoring an ILOM configuration, RSA and DSA private keys that exist under `/SP/services/ssh/keys` or `/CMM/services/ssh/keys` fail to restore.

Workaround: When a new key is generated on the SP, it will result in the following message:

```
Warning: the RSA host key for 'xxx.xxx.xxx.xxx' differs
from the key for the IP address 'xxx.xxx.xxx.xxx'
Offending key for IP in ~/.ssh/known_hosts:216
Matching host key in ~/.ssh/known_hosts:189

Are you sure you want to continue connecting (yes/no)?
```

Type **`yes`** or edit the `known_hosts` file.

Update: This issue will be fixed in the ILOM 3.0.4 release.

Documentation Updates and Errata

This section describes errors that have been found in the ILOM 3.0 Documentation Collection. Specific change request (CR) identification numbers and workarounds for the issues are provided, where available. In addition, information about ILOM on the CMM is provided to augment the ILOM 3.0 Documentation Collection

Topics

Description	Links
Learn about ILOM on the CMM	• "ILOM on the CMM" on page 28
Learn about errors in the table that describes targets, properties, and values for the `set` command	• "Targets, Properties, and Values for `set` Command" on page 33
Learn about the maximum number of active sessions supported on some SPARC systems	• "Some SPARC Systems Support a Maximum of Five Active Sessions" on page 35
Learn about a feature that was documented but not yet available on SPARC platforms	• "Power Policy Mentioned for SPARC Systems in the ILOM 3.0 Documentation Collection" on page 35

Topics

Description	Links
Learn about a correction in the instructions on downgrading firmware	• "Updating to a Previous ILOM Version Might Not Complete" on page 37
Learn about a correction for SSH Key functionality	• "SSHD Uses Newly Generated Key Without Restarting the SSH Server" on page 37
Learn about a correction for HTTPS SSL properties	• "ILOM HTTPS SSL Properties Are Not Visible in the ILOM Inventory" on page 38
Learn about a correction for SNMP command to monitor available power	• "SNMP Commands to Monitor Power Are Incorrect" on page 38
Learn about a correction for server serial connection to ILOM	• "Rackmount Servers Support Serial Connection to ILOM" on page 39
Learn about correction for supported transfer methods for the Snapshot utility	• "TFTP Is Not a Supported Transfer Method for the Snapshot Utility" on page 39
Learn about additional information for Storage Redirection	• "CMM Web Interface Provides Download Links to Storage Redirection Service and Client CLI Tools" on page 39
Learn about an exception to a power rule	• "Exception to the Rule That `available_power` Is Greater Than `hwconfig_power`" on page 40

ILOM on the CMM

Note – Overview information about ILOM on the CMM is provided to augment the content provided in the ILOM 3.0 Documentation Collection. With the exception of the Improved Chassis View information, ILOM on the CMM overview information has not changed in the ILOM 3.0.3 release.

ILOM is integrated into the CMM and each of the service processors (SPs) on Sun Blade server modules. Server modules (blades) are part of the Sun Blade Modular Systems, which join components through a chassis system. ILOM has a tiered management architecture that allows system management of individual Sun Blade server modules or aggregated management at the Sun Blade chassis level.

If you are using a Sun Blade Modular System, such as the Sun Blade 6000 chassis system or a Sun Blade 6048 shelf system, ILOM lets you manage the server modules directly via the serial port located on the front of the server module. However, you

can also manage the server modules and chassis components via the chassis monitoring module (CMM) using the CMM management network port or serial port on the CMM.

CMM Chassis-Level Management

The CMM is the primary point of management of all shared chassis components and functions in the Sun Blade Modular System chassis. The CMM is built into each Sun Blade Modular System chassis, and is configured with an individual IP address assigned either statically or dynamically using DHCP.

The CMM provides complete monitoring and management functionality for the chassis components while also providing access to server module management functions. In addition, the CMM supports HTTP and CLI "pass-thru" interfaces that provide access to each server module via serial or network connection.

The CMM's management functions include:

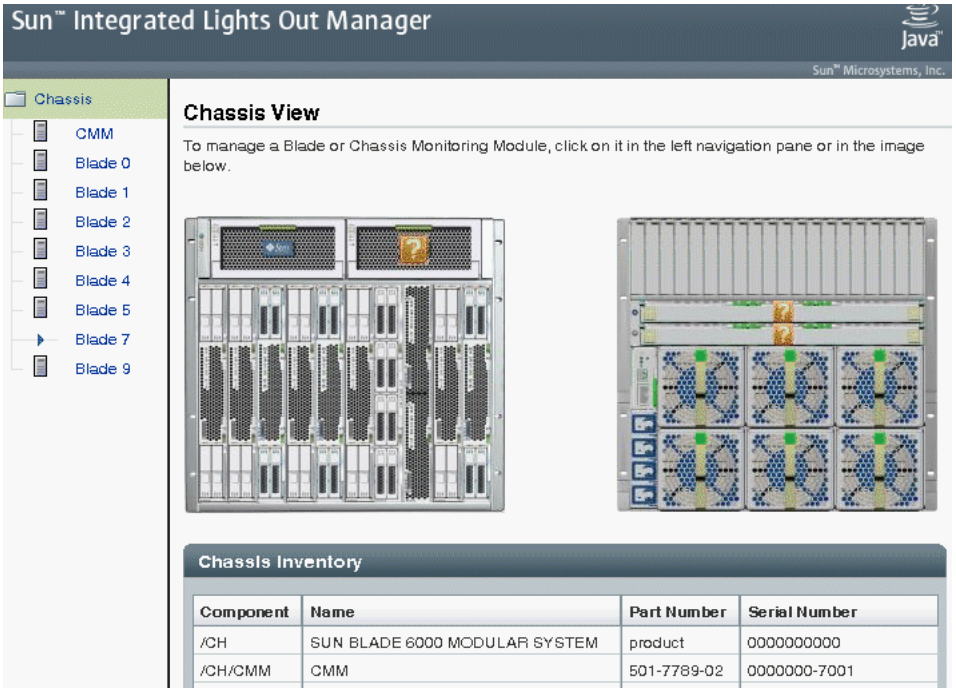
- Implementation of an IPMI satellite controller, making the chassis environmental sensors visible to the server module's BMC functions
- Direct environmental and inventory management via CLI, web, SNMP, and IPMI interfaces
- Firmware management of CMM, network express module (NEM), and server module SPs
- Pass-through management of server modules and HTTP links along with command-line interface (CLI) SSH contexts
- Chassis power control
- Access to the following components:
  - Chassis
  - Power supplies
  - Fans
  - Network express modules (NEMs)
  - Server module SPs

Improved Chassis View

In the ILOM web interface, the chassis view has been modified to include the following enhancements:

- The navigation pane on the left side of the screen now shows visible entries only for components that are present and manageable.

- A Chassis Inventory Table now appears in the main body page of the chassis view. The table provides information about name, part number, and serial number of all manageable components that are present in the chassis.



CMM Functionality

The CMM provides various management functions, including power control of the chassis as well as hot-plug operations of infrastructure components such as power supply modules, fan modules, server modules, and NEMs. The CMM acts as a conduit to the server module ILOM configuration, enabling settings such as network addresses and administrative user accounts to be configured or viewed.

Accessible to the end user through a serial port and a 10/100/1000-BASE-T network management port on the CMM, ILOM provides the administrator with full lights-out manageability of the server module. This includes the ability to power cycle, set up, manage, monitor and maintain the system locally or remotely. In addition, administrators can obtain chassis status information via each server module's ILOM SP.

CMM and SP Address Space

Users can interact with the CMM ILOM using the command-line interface (CLI) using the following address spaces:

- `/CMM` is used to manage the CMM ILOM, and replaces `/SP` on Sun Blade Modular Systems.
- `/CH` is used to provide inventory, environmentals, and hardware management at the chassis level. The `/CH` address space replaces `/SYS` on Sun Blade Modular Systems.
- `/SP` is used to configure the server module SP and for viewing logs and consoles.
- `/SYS` is used to provide inventory, environmentals, and hardware management at the server module level.
- `/HOST` is used to monitor and manage the host operating system.

CMM CLI Connection

You can access the ILOM CMM using a network connection, or by connecting to a terminal or PC running terminal emulation software. When the system has booted, the CMM ILOM displays its login prompt:

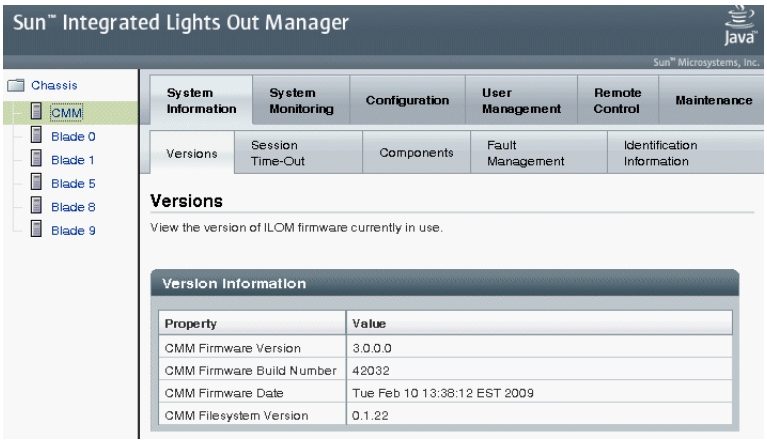
```
SUNCMMnnnnnnnnnn login:
```

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

CMM Web Interface Connection

You also can access the CMM ILOM using the ILOM web interface and its Navigation Pane. The Navigation Pane appears at the left of the main ILOM page. From the Navigation Pane, you can choose to manage all components in a chassis (using the CMM) or individual server module service processors (SPs).

The following figure shows the ILOM Navigation Pane.


Sun™ Integrated Lights Out Manager
Java
Sun™ Microsystems, Inc.
Chassis
CMM
Blade 0
Blade 1
Blade 5
Blade 8
Blade 9
System Information
System Monitoring
Configuration
User Management
Remote Control
Maintenance
Versions
Session Time-Out
Components
Fault Management
Identification Information
Versions
View the version of ILOM firmware currently in use.
Version Information
Property
Value
CMM Firmware Version
3.0.0.0
CMM Firmware Build Number
42032
CMM Firmware Date
Tue Feb 10 13:38:12 EST 2009
CMM Filesystem Version
0.1.22

Targets, Properties, and Values for `set` Command

Issue: In the *Sun Integrated Lights Out Manager (ILOM) 3.0 CLI Procedures Guide* (820-6412-10), there are incorrect entries for properties, values, and default values that correspond with valid targets in the `set` command. The following information is correct.

Valid Targets	Properties	Values	Default
/SP/clients/activedirectory	state	enabled | disabled	disabled
	defaultrole	administrator | operator | a | u | c | r | o | s	(none)
	dnslocatormode	enabled | disabled	disabled
	address	<ip address> or <DNS name>	(none)
	port	<integer between 0-65535>	0
	strictmode	enabled | disabled	disabled
	timeout	<integer>	4
	logdetail	none | high | medium | low | trace	none
/SP/clients/activedirectory/cert/	certstatus	<string>	certificate not present
	clear_action	true	(none)
	issuer	<string>	(none)
	load_uri	tftp | ftp | scp	(none)
	serial_number	<string>	(none)
	subject	<string>	(none)
	valid_from	<string>	(none)
	valid_until	<string>	(none)
	version	<string>	(none)
/SP/clients/activedirectory/alternateservers/*n* where *n* is 1-5	address	<ip address> or <DNS name>	(none)
	port	<integer>	0
/SP/clients/activedirectory/alternateservers/*n***/cert** where *n* is 1-5	certstatus	<string>	certificate not present
	clear_action	true	(none)
	issuer	<string>	(none)
	load_uri	tftp | ftp | scp	(none)
	serial_number	<string>	(none)
	subject	<string>	(none)
	valid_from	<string>	(none)
	valid_until	<string>	(none)
	version	<string>	(none)

Valid Targets	Properties	Values	Default
/SP/clients/ldapssl	state	enabled | disabled	disabled
	defaultrole	administrator | operator | a | u | c | r | o | s	(none)
	dnslocatormode	enabled | disabled	disabled
	address	<ip address> or <DNS name>	(none)
	port	<integer between 0-65535>	0
	strictmode	enabled | disabled	disabled
	timeout	<integer>	4
	logdetail	none | high | medium | low | trace	none
/SP/clients/ldapssl/cert/	certstatus	<string>	certificate not present
	clear_action	true	(none)
	issuer	<string>	(none)
	load_uri	tftp | ftp | scp	(none)
	serial_number	<string>	(none)
	subject	<string>	(none)
	valid_from	<string>	(none)
	valid_until	<string>	(none)
	version	<string>	(none)
/SP/clients/ldapssl/ alternateservers/*n***/cert** where *n* is 1-5	certstatus	<string>	(none)
	clear_action	true	(none)
	issuer	<string>	(none)
	load_uri	tftp | ftp | scp	(none)
	serial_number	<string>	(none)
	subject	<string>	(none)
	valid_from	<string>	(none)
	valid_until	<string>	(none)
	version	<string>	(none)
/SP/clients/ldapssl/customgroups/*n* where *n* is 1-5	name	<string>	(none)
	roles	administrator | operator | a | u | c | r | o | s	(none)
/SP/clients/ldapssl/ alternateserver/*n* where *n* is 1-5	address	<string>	(none)
	port	<integer>	0

Update: This information will be included in a future release of the ILOM Documentation Collection.

Some SPARC Systems Support a Maximum of Five Active Sessions

Issue: In the ILOM 3.0 Documentation Collection, it states that ILOM supports a maximum of 10 active user sessions. This is incorrect for some SPARC systems, which support a maximum of only five user sessions.

Update: This information will be included in a future release of the ILOM Documentation Collection.

Power Policy Mentioned for SPARC Systems in the ILOM 3.0 Documentation Collection

Issue: Power policy was incorrectly documented as an available feature on SPARC platforms in the following books within the ILOM 3.0 Documentation Collection:

- *Sun Integrated Lights Out Manager (ILOM) 3.0 CLI Procedures Guide* (820-6412-10)
- *Sun Integrated Lights Out Manager (ILOM) 3.0 SNMP and IPMI Procedures Guide* (820-6413-10)

Power policy is NOT available to SPARC platforms using ILOM 3.0 or ILOM 3.0.2.

Update: Power policy is now available, on some SPARC platforms, in ILOM 3.0.3. In the next release of the ILOM 3.0 Documentation Collection, the CLI and SNMP Procedures Guides will not change, but the following information will be added to the *Sun Integrated Lights Out Manager (ILOM) 3.0 Web Interface Procedures Guide*.

▼ Configure Power Policy Using the Web Interface

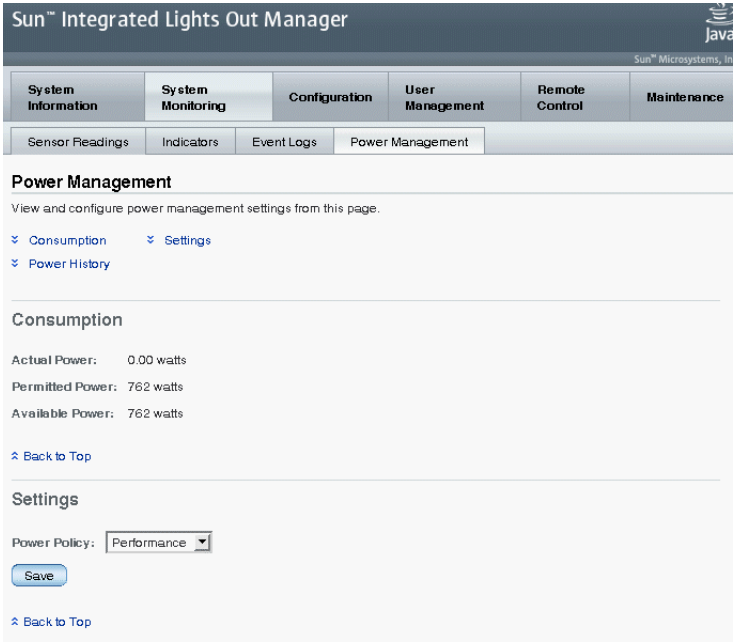
Before You Begin

- To set power policy, you need the Admin (a) role enabled.
- Refer to your platform ILOM Supplement for information about power policy implementation on a specific platform.

Note – The power policy described in this section might or might not be implemented on the platform that you are using. See the platform-specific ILOM Supplement or Product Notes for implementation details. You can find the ILOM Supplement and Product Notes within the documentation set for your system.

Follow these steps to configure power policy:

1. **Log in to ILOM.**
2. **Select System Monitoring --> Power Management.**
3. **Under Settings, select Performance or Elastic from the menu.**
4. **Click Save to save your settings.**



Updating to a Previous ILOM Version Might Not Complete

CR 6808009

Issue: In the *Sun Integrated Lights Out Manager 3.0 Concepts Guide* (820-6410-10), it states that when you are updating the ILOM firmware to a previous version with the Preserve Configuration option enabled, and if the preserved configuration file is not found, then the configuration will revert to the default settings when the update completes. That information is incorrect. In that scenario, during the update process, the following error message is reported and the update process is stopped:

```
The configuration matching the version cannot be restored.
Please retry without preserving config.

Firmware image update failed

load: Command Failed

->
```

To proceed, you should start the update process again and do not choose the Preserve Configuration option. When the update is complete and the system reboots, the ILOM default settings will be used.

Update: This information will be included in a future release of the ILOM 3.0 Documentation Collection.

SSHD Uses Newly Generated Key Without Restarting the SSH Server

CR 6781487

Issue: In the *Sun Integrated Lights Out Manager (ILOM) 3.0 CLI Procedures Guide* (820-6412-10), the *Sun Integrated Lights Out Manager (ILOM) Web Interface Procedures Guide* (820-6411-10), and the *Sun Integrated Lights Out Manager (ILOM) 3.0 SNMP and IPMI Procedures Guide* (820-6413-10), the documents state that when you are generating a new SSH key, you must restart the SSH server for the new key to take effect. That statement is no longer valid. The new SSH key will become immediately available for new connections. The SSH server does not need to be restarted for the new key to take effect.

Update: This information will be included in a future release of the ILOM Documentation Collection.

ILOM HTTPS SSL Properties Are Not Visible in the ILOM Inventory

CR 6749651

Issue: In the *Sun Integrated Lights Out Manager (ILOM) 3.0 CLI Procedures Guide* (820-6412-10), the following properties are listed incorrectly as present in the ILOM inventory. These properties are not part of the ILOM inventory:

- `-> show /SP/services/https/ssl/custom_cert serial_number`
- `-> show /SP/services/https/ssl/custom_cert version`
- `-> show /SP/services/https/ssl/default_cert issued_by`
- `-> show /SP/services/https/ssl/default_cert serial_number`
- `-> show /SP/services/https/ssl/default_cert version`

Update: This information will be updated in a future release of the ILOM Documentation Collection.

SNMP Commands to Monitor Power Are Incorrect

CR 6766948
Issue: In the S*un Integrated Lights Out Manager (ILOM) 3.0 SNMP and IPMI Procedures Guide* (820-6413-10), the commands for monitoring power are incorrect. The following commands are correct.

- **To monitor the hardware configuration maximum power consumption using SNMP, type this command:**

```
% snmpget -v2c -cprivate -mALL snmp_agent_ipaddress
sunHwCtrlPowerMgmtAvailablePower.0
```

- **To monitor the hardware configuration maximum power consumption using SNMP, type this command:**

```
% snmpget -v2c -cprivate -mALL snmp_agent_ipaddress
sunHwCtrlPowerMgmtHWConfigPower.0
```

- **To monitor permitted power consumption using SNMP, type this command:**

```
% snmpget -v2c -cprivate -mALL snmp_agent_ipaddress
sunHwCtrlPowerMgmtPermittedPower.0
```

Update: This information will be updated in a future release of the ILOM Documentation Collection.

Rackmount Servers Support Serial Connection to ILOM

CR 6792940

Issue: In the S*un Integrated Lights Out Manager (ILOM) 3.0 Concepts Guide* (820-6410-10), it is stated incorrectly in Table 2-1 that rackmount servers do not support a serial connection to ILOM. Rackmount servers do support a serial connection to ILOM.

Update: This information will be updated in a future release of the ILOM Documentation Collection.

TFTP Is Not a Supported Transfer Method for the Snapshot Utility

CR 6792940

Issue: In the *Sun Integrated Lights Out Manager (ILOM) 3.0 CLI Procedures Guide* (820-6412-10), TFTP is given incorrectly as a supported protocol to use when transferring the Snapshot data to a directory. TFTP is not a supported protocol for Snapshot data transfers. The supported transfer protocols are SFTP and FTP.

Update: This information will be updated in a future release of the ILOM Documentation Collection.

CMM Web Interface Provides Download Links to Storage Redirection Service and Client CLI Tools

CR 6793269

Issue: In the S*un Integrated Lights Out Manager (ILOM) 3.0 Concepts Guide* (820-6410-10), it states that the Storage Redirection feature is not supported on a chassis monitoring module (CMM) running ILOM 3.0 firmware. The Storage Redirection CLI feature in ILOM consists of a set of tools (a service and a client) that you run on your machine to connect to a supporting service processor (SP). The ILOM web interface acts as a "delivery system" for users to download these tools. While it is correct that redirection is not supported for any CMM, the CMM web interface still

provides the download links to the Storage Redirection service and client CLI tools. Once the service and client tools are downloaded and running on your machine, they can be used for Storage Redirection to a server module running ILOM 3.0.

Update: This additional information will be added to a future release of the ILOM Documentation Collection.

Exception to the Rule That `available_power` Is Greater Than `hwconfig_power`

CR 6802142

Issue: In the *Sun Integrated Lights Out Manager (ILOM) 3.0 Concepts Guide* (820-6410-10), available power is defined as the maximum power that the power supplies in the system can draw from an external source. Typically this number is greater than the hardware configuration maximum. In general, `available_power` is always greater than `hwconfig_power` in all Sun rackmount servers. An exception exists for the Sun Blade Modular Systems where `hwconfig_power` is greater than `available_power`.

The reason for the exception is because on a chassis system, the maximum power that could be consumed by each server module slot is included in the `hwconfig_power` number. However, the chassis guarantees that this maximum will never be allowed on all server module slots at the same time (and the allowed maximum is displayed in `permitted_power`).

Update: This information will be updated in a future release of the ILOM Documentation Collection.

Changes to Web Interface Pages

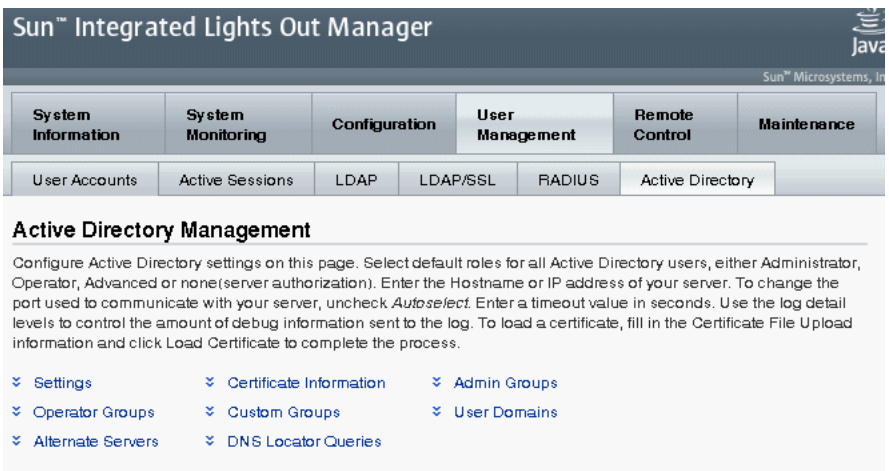
Some ILOM 3.0.3 web interface pages that provide multiple sections now have all "jump links" moved to the top of the web page for easier access. The information, settings, and controls on these pages are unchanged. Only the jump links, which aid navigation within the page, have been repositioned.

Topics

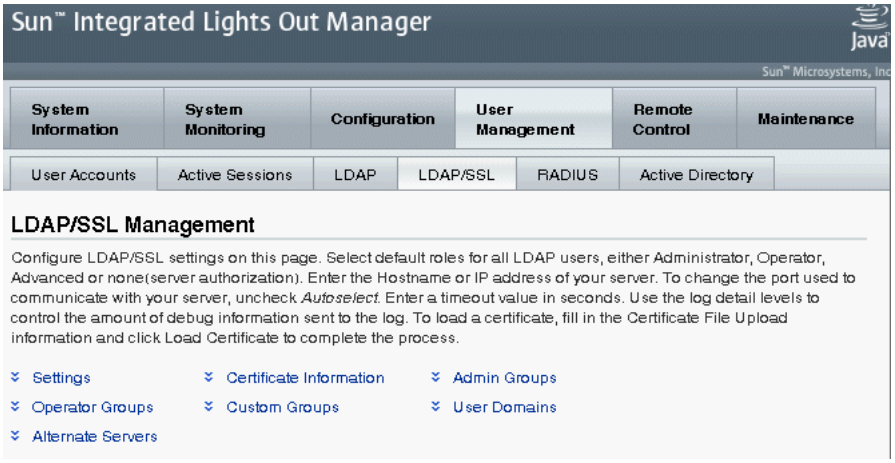
Description	Links
View changes to Active Directory page	• "User Management --> Active Directory" on page 41
View changes to the LDAP/SSL page	• "User Management -->LDAP/SSL" on page 42
View changes to the SNMP page	• "Configuration --> System Management Access -->SNMP" on page 42
View changes to the User Accounts page	• "User Management --> User Accounts" on page 43

The following figures show ILOM web interface pages in which jump links are now provided for easier navigation within pages.

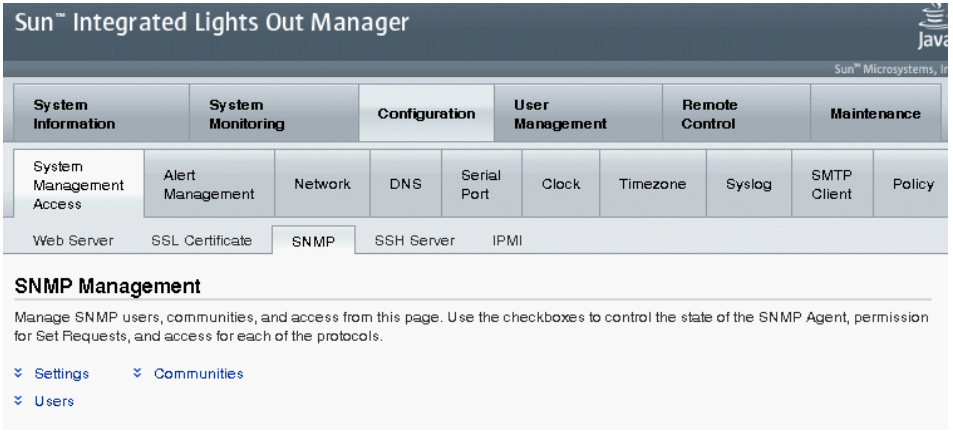
User Management --> Active Directory



User Management -->LDAP/SSL



Configuration --> System Management Access -->SNMP



User Management --> User Accounts