Oracle Integrated Lights Out Manager (ILOM) 3.0

Maintenance and Diagnostics — CLI and Web Guide

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Contents

Using This Documentation

This guide describes maintenance and diagnostics features that are available in both the Oracle Integrated Lights Out Manager (ILOM) 3.0 web interface and CLI.

Use this guide in conjunction with other guides in the Oracle ILOM 3.0 Documentation Library. This guide is intended for technicians, system administrators, authorized Oracle service providers, and users who have experience managing system hardware.

- "Related Documentation" on page vii
- "Documentation Feedback" on page viii
- "Product Downloads" on page viii
- "Oracle ILOM 3.0 Firmware Version Numbering Scheme" on page ix
- "Support and Accessibility" on page x

Related Documentation

Documentation	Links
All Oracle products	http://www.oracle.com/documentation
Oracle Integrated Lights Out Manager (ILOM) 3.0 Documentation Library	http://www.oracle.com/pls/topic/lookup?ctx=ilom30

Documentation	Links
System management, single system management (SSM) security, and diagnostic documentation	http://www.oracle.com/technetwork/documentation/sys-mgmt-networking-190072.html
Oracle Hardware Management Pack 2.0	http://docs.oracle.com/cd/E19960-01/index.html

Note: To locate Oracle ILOM 3.1 documentation that is specific to your Sun server platform, see the Oracle ILOM section of the administration guide that is available for your server.

Documentation Feedback

Provide feedback on this documentation at:

http://www.oracle.com/goto/docfeedback

Product Downloads

Updates to the Oracle ILOM 3.0 firmware are available through standalone software updates that you can download from the My Oracle Support (MOS) web site for each Sun server or Sun blade chassis system. To download these software updates from the MOS web site, see the instructions that follow.

▼ Download Product Software and Firmware

1. **Go to** http://support.oracle.com**.**
2. **Sign in to My Oracle Support.**
3. **At the top of the page, click the Patches and Updates tab.**
4. **In the Patches Search box, select Product or Family (Advanced Search).**
5. **In the Product? Is field, type a full or partial product name, for example Sun Fire X4470, until a list of matches appears, then select the product of interest.**
6. **In the Release? Is pull down list, click the Down arrow.**

7. **In the window that appears, click the triangle (>) by the product folder icon to display the choices, then select the release of interest.**
8. **In the Patches Search box, click Search.**

   A list of product downloads (listed as patches) appears.
9. **Select the patch name of interest, for example Patch 10266805 for the Oracle ILOM and BIOS portion of the Sun Fire X4470 SW 1.1 release.**
10. **In the right-side pane that appears, click Download.**

Oracle ILOM 3.0 Firmware Version Numbering Scheme

Oracle ILOM 3.0 uses a firmware version numbering scheme that helps you to identify the firmware version you are running on your server or CMM. This numbering scheme includes a five-field string, for example, a.b.c.d.e, where:

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

For example, Oracle ILOM 3.1.2.1.a would designate:

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

Tip – To identify the Oracle ILOM firmware version installed on your Sun server or CMM, click System Information --> Versions in the web interface, or type `version` in the command-line interface.

Support and Accessibility

Description	Links
Access electronic support through My Oracle Support	http://support.oracle.com For hearing impaired: http://www.oracle.com/accessibility/support.html
Learn about Oracle's commitment to accessibility	http://www.oracle.com/us/corporate/accessibility/index.html

Maintenance Operations Overview

Description	Links
Learn about updating system firmware	• "Firmware Updates Using Oracle ILOM" on page 1
Learn about resetting the service processor	• "Service Processor (SP) Reset" on page 3
Learn about backing up, restoring and resetting the Oracle ILOM configuration	• "Back Up, Restore, and Reset Oracle ILOM Configurations" on page 3

Related Information

- *Oracle ILOM 3.0 Daily Management – CLI Procedures*
- *Oracle ILOM 3.0 Daily Management – Web Interface Procedures*

Firmware Updates Using Oracle ILOM

To ensure that your system has the latest features and product enhancements installed, you should update the Oracle ILOM firmware on your system with the latest Oracle ILOM firmware release that is available.

The firmware for the following types of devices can be updated using Oracle ILOM:

- Blade or rackmount servers (x86 and SPARC) that contain a service processor (SP)
- Blade chassis network expansion modules (NEM) that include a service processor
- Blade chassis monitoring module (CMM)

Note – In a Sun Blade Modular System chassis running Oracle ILOM 3.0, the CMM can act as the primary point for managing firmware updates for chassis components.

When updating to a later firmware release, the Preserve Configuration option (when enabled) saves your existing Oracle ILOM configuration and restores the configuration after the update process is complete.

Note – The term *configuration* here refers to the settings configured in Oracle ILOM by a user. These settings can include user management settings, SP network settings, serial port settings, alert management configurations, remote management configurations, and so on.

If you are updating to a prior firmware release and Oracle ILOM detects a preserved configuration for that release, the Preserve Configuration option (when enabled) reverts to the configuration for the prior release after the update process completes.

Generally, you should *not* update the firmware on your system to a prior release. However, if you determine that you need to run an earlier version of the firmware on your system, you can update the firmware to any prior firmware release that is available for download.

Prior to updating the Oracle ILOM firmware, you should identify the Oracle ILOM firmware version that is running on the server SP, NEM SP, or CMM. For information about the firmware version numbering scheme used for Oracle ILOM 3.0, see "Oracle ILOM 3.0 Firmware Version Numbering Scheme" on page ix.

If you determine you are running Oracle ILOM 3.0 firmware on your server SP, NEM SP, or CMM, refer to any of the following Oracle ILOM 3.0 guides for instructions for updating the Oracle ILOM firmware.

Related Information

- "Updating Firmware" on page 7
- *Oracle ILOM 3.0 Daily Management – Web Interface Procedures Guide*
- *Oracle ILOM 3.0 Daily Management – CLI Procedures Guide*
- *Oracle Integrated Lights Out Manager (ILOM) CMM Administration Guide for Sun Blade 6000 and Sun Blade 6048 Modular Systems*
- Oracle ILOM supplement guide or platform administration guide provided for your server

Service Processor (SP) Reset

On occasion, the SP for a server, NEM, or CMM will need to be reset for you to complete an upgrade, or to clear an error state. The reset operation is similar to resetting a PC where all active processes are terminated and the system reboots.

If you need to reset your Oracle ILOM service processor (SP), you can do so without affecting the host OS. However, resetting an SP disconnects your current Oracle ILOM session and renders the SP unmanageable during reset.

Related Information

- "Resetting the Service Processor Using Oracle ILOM" on page 17
- *Oracle ILOM 3.0 Daily Management – Web Interface Procedures Guide*
- *Oracle ILOM 3.0 Daily Management – CLI Procedures Guide*
- *Oracle Integrated Lights Out Manager (ILOM) CMM Administration Guide for Sun Blade 6000 and Sun Blade 6048 Modular Systems*
- Oracle ILOM supplement guide or platform administration guide provided for your server

Back Up, Restore, and Reset Oracle ILOM Configurations

Oracle ILOM's configuration management tasks enable you to:

- Back up the Oracle ILOM configuration to a XML file on a remote system.
- Use the backup file to restore Oracle ILOM to the backed-up configuration.
- Use the backup file to install the backed-up configuration on other Oracle ILOM SPs.
- Reset the Oracle ILOM configuration to the default settings.

You can use the Backup and Restore and Reset to Defaults features together in the following ways:

- Save the Oracle ILOM configuration to a backup XML file, reset the Oracle ILOM configuration to the default settings, and use the command-line interface (CLI) or web interface to create a new Oracle ILOM configuration.

The privileges assigned to the user account that is used to execute the Backup operation determine how much of the configuration is included in the backup XML file. The Admin (a), User Management (u), Console (c), Reset and Host Control (r), and Read Only (o) roles have full privileges and create the most complete configuration backup file.

Note – For security reasons, if the user account used to execute the Restore operation has fewer privileges than the account used to create the backup file, some of the configurations might not be restored. For each configuration property that is not restored due to lack of privileges, a log entry is created.

- Use the CLI or web interface to create a new Oracle ILOM configuration, save the Oracle ILOM configuration to a backup XML file, edit the XML file to remove settings that are unique to a particular system, and perform restore operations to load the backup file to other systems.
- Reset the Oracle ILOM configuration to the default settings and restore it using a known good Oracle ILOM configuration backup file.

Given the above capabilities, the following use cases describe how you might typically use these features:

- You changed your Oracle ILOM configuration but it no longer works and you want to recover Oracle ILOM by restoring it to a known good configuration. To do this, first reset the Oracle ILOM configuration to the default settings and then perform a Restore operation using the known good configuration.
- You want to use the Backup and Restore feature to replicate an Oracle ILOM configuration onto other systems. To do this, create a standard Oracle ILOM configuration, back up the configuration, edit the backed up XML file to remove settings that are unique to a particular system (for example, the IP address), then perform Restore operations to replicate the configuration onto the other systems.
- You created a minimum Oracle ILOM configuration but to make it complete you need to configure a number of users (Oracle ILOM supports a maximum of 10 active user sessions per service processor). If you have backed up a configuration previously that has the same users, you can edit the XML file so that it only includes the user information and then simply perform a Restore operation to overlay the minimum configuration with the configuration that has the user accounts. Reuse of large network configurations such as Active Directory is another use case for this approach.

You can use either the web interface or the CLI to perform configuration management tasks in Oracle ILOM. For more information about these tasks, see:

Related Information

- "Backing Up, Restoring, or Resetting Oracle ILOM Configurations" on page 19

- *Oracle ILOM 3.0 Daily Management – Web Interface Procedures Guide*
- *Oracle ILOM 3.0 Daily Management – CLI Procedures Guide*
- *Oracle Integrated Lights Out Manager (ILOM) CMM Administration Guide for Sun Blade 6000 and Sun Blade 6048 Modular Systems*

Updating Firmware

The information in this section describes how to upgrade firmware on systems using Oracle ILOM.

Description	Links
Use the Oracle ILOM web interface to update a firmware image on the server or CMM	• "Updating Firmware Using Oracle ILOM (Web)" on page 8
Use the Oracle ILOM command-line interface to update a firmware image on the server or CMM	• "Updating Firmware Using Oracle ILOM (CLI)" on page 11
Use SNMP to get and set firmware management information (view version, set upgrade image locataion, initiate upgrade, etc.)	• "Manage Oracle ILOM Firmware Updates (SNMP)" in *Oracle ILOM 3.0 Protocol Management – SNMP, IPMI, CIM, WS-Man Guide*

Related Information

- *Oracle ILOM 3.0 Daily Management – CLI Procedures*
- *Oracle ILOM 3.0 Daily Management – Web Interface Procedures*
- *Oracle ILOM 3.0 Protocol Management – SNMP, IPMI, CIM, WS-Man*

Updating Firmware Using Oracle ILOM (Web)

Description	Links	Platform Feature Support
Identify requirements for updating firmware image	• "Before You Begin - Update Firmware Image" on page 8	• x86 system server SP • SPARC system server SP • CMM
Perform these procedures to update the Oracle ILOM firmware image on your server or CMM	• "Identify the Oracle ILOM Firmware Version" on page 9 • "Update Firmware Image" on page 9	
Troubleshoot network failure durng firmware update	• "Recover From a Network Failure During Firmware Update" on page 11	

Before You Begin - Update Firmware Image

Before you perform the procedures in this section, the following requirements must be met:

- Identify the version of Oracle ILOM that is currently running on your system. For details, see "Identify the Oracle ILOM Firmware Version" on page 9.
- Download the firmware image for your server or CMM from the Oracle download web site and place the image on a server supporting one of the following protocols: TFTP, FTP, SFTP, SCP, HTTP, or HTTPS. For download instructions, see "Product Downloads" on page viii.
- If required by your platform, shut down your host operating system before changing the firmware on your server SP.
- Obtain an Oracle ILOM user name and password that has Admin (`a`) role account privileges. You must have Admin (`a`) privileges to update the firmware on the system.
- The firmware update process takes several minutes to complete. During this time, do not perform other Oracle ILOM tasks. When the firmware update is complete, the system will reboot.

Note – As of Oracle ILOM 3.0.10, a new feature is available to manage firmware updates for Oracle Sun Modular System chassis components. For information and procedures for updating Oracle ILOM firmware on CMM chassis components, refer to the *Oracle Integrated Lights Out Manager (ILOM) CMM Administration Guide for Sun Blade 6000 and Sun Blade 6048 Modular Systems*.

▼ Identify the Oracle ILOM Firmware Version

To identify the firmware version installed on your server or CMM, follow these steps:

1. **Log in to the Oracle ILOM SP or CMM web interface interface.**
2. **Click System Information --> Versions.**

   The current firmware version information appears.

▼ Update Firmware Image

Before You Begin

- Met the requirements listed in "Before You Begin - Update Firmware Image" on page 8.
- If required by your platform, shut down your host operating system before updating the firmware on your server SP. To gracefully shut down your host operating system from the Oracle ILOM web interface, select the Graceful Shutdown and Power off options in the Remote Control --> Remote Power Control tab. From the Oracle ILOM CLI, issue the **`stop /SYS`** command.

To update the firmware image, follow these steps:

1. **Log in to the Oracle ILOM SP or CMM web interface**
2. **Click Maintenance --> Firmware Upgrade.**

   The Firmware Upgrade page appears.
3. **In the Firmware Upgrade page, click Enter Upgrade Mode.**

   An Upgrade Verification dialog box appears, indicating that other users who are logged in will lose their session when the update process is complete.
4. **In the Upgrade verification dialog box, click OK to continue.**

   The Firmware Upgrade page appears.
5. **In the Firmware Upgrade page, perform the following actions:**

a. **Specify the image location by performing one of the following:**
   - Click Browse to select the location of the firmware image you want to install.
   - If supported on your system, click Specify URL. Then, in the text field, type the URL that will locate the firmware image.

b. **Click the Upload button to upload and validate the file.**

   Wait for the file to upload and validate.

   The Firmware Verification page appears.

6. **In the Firmware Verification page, enable any of the following options:**
   - **Preserve Configuration.** Enable this option if you want to save your existing configuration in Oracle ILOM and restore that existing configuration after the update process is complete.
   - **Delay BIOS upgrade until next server power-off.** Enable this option if you want to postpone the BIOS upgrade until the next time the system reboots.

Note – The "Delay BIOS upgrade" option appears only for firmware updates to Oracle ILOM 3.0 or later on x86 systems.

Note – The BIOS default settings cannot be preserved when you update the SP firmware. After updating the SP firmware, the default settings are automatically loaded for the new BIOS image.

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7. **Click Start Upgrade to start the upgrade process, or click Exit to cancel the process.**

   When you click Start Upgrade the upload process starts and a prompt to continue the process appears.

8. **At the prompt, click OK to continue.**

   The Update Status page appears providing details about the update progress. When the update indicates 100%, the firmware upload is complete.

   When the upload is complete, the system *automatically* reboots.

Note – The Oracle ILOM web interface might not refresh properly after the update is complete. If the Oracle ILOM web page is missing information or displays an error message, you might be viewing a cached version of the page from the version previous to the update. Clear your browser cache and refresh your browser before continuing.

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9. **Reconnect to the Oracle ILOM SP (or CMM) web interface. Click System Information --> Version to verify that the firmware version on the SP or CMM corresponds to the firmware image you installed.**

▼ Recover From a Network Failure During Firmware Update

If you were performing the firmware update process through the Oracle ILOM web interface using a *local file* and a network failure occurs, Oracle ILOM automatically times out and reboots the system.

To recover from a network failure during firmware update, follow these steps:

1. **Address and fix the network problem.**
2. **Reconnect to the Oracle ILOM SP.**
3. **Restart the firmware update process.**

Updating Firmware Using Oracle ILOM (CLI)

Description	Links	Platform Feature Support
Review the prerequisites	• "Before You Begin - Firmware Image (CLI)" on page 12	• x86 system server SP • SPARC system server SP • CMM
Identify the current Oracle ILOM firmware version	• "Identify Oracle ILOM Firmware Version (CLI)" on page 12	
Update the firmware image	• "Update the Firmware Image (CLI)" on page 13	
Troubleshoot network problem during firmware update	• "Recover From a Network Failure During Firmware Update (CLI)" on page 15	

Before You Begin - Firmware Image (CLI)

Before you perform the procedures in this section, the following requirements must be met:

- Identify the version of Oracle ILOM that is currently running on your system. For details, see "Identify Oracle ILOM Firmware Version (CLI)" on page 12.
- Download the firmware image for your server or CMM from the Oracle download web site and place the image on a server supporting one of the following protocols: TFTP, FTP, SFTP, SCP, HTTP, or HTTPS. For download instructions, see "Product Downloads" on page viii.
- If required by your platform, shut down your host operating system before updating the firmware on your server SP.
- Obtain an Oracle ILOM user name and password that has Admin (`a`) role account privileges. You must have Admin (`a`) privileges to update the firmware on the system.
- The firmware update process takes several minutes to complete. During this time, do not perform other Oracle ILOM tasks. When the firmware update is complete, the system will reboot.

Note – As of Oracle ILOM 3.0.10, a new feature is available to manage firmware updates for Oracle Sun Modular System chassis components. For information and procedures for updating Oracle ILOM firmware on CMM chassis components, refer to the *Oracle Integrated Lights Out Manager (ILOM) CMM Administration Guide for Sun Blade 6000 and Sun Blade 6048 Modular Systems*.

▼ Identify Oracle ILOM Firmware Version (CLI)

To identify the Oracle ILOM firmware version, follow these steps:

1. **Log in to the Oracle ILOM CLI SP or CMM.**
2. **At the command prompt, type** `version`**.**

   The following information appears:

```
SP firmware 3.0.0.1
SP firmware build number: #####
SP firmware date: Fri Nov 28 14:03:21 EDT 2008
SP filesystem version: 0.1.22
```

▼ Update the Firmware Image (CLI)

Before You Begin

- Met the requirements listed in "Before You Begin - Firmware Image (CLI)" on page 12.
- If required by your platform, shut down your host operating system before updating the firmware on your server SP. To gracefully shut down your host operating system from the Oracle ILOM web interface, click the Graceful Shutdown and Power off options in the Remote Control --> Remote Power Control tab. From the Oracle ILOM CLI, issue the **`stop /SYS`** command.

1. **Log in to the Oracle ILOM CLI SP or CMM.**

2. **Verify that you have network connectivity to update the firmware.**

   For example:

   - To verify network connectivity on a server SP, type:

     -> **`show /SP/network`**

   - To verify network connectivity on a CMM, type:

     -> **`show /CMM/network`**

3. **To load the Oracle ILOM firmware image, type the following command:**

   -> **`load -source`** *<supported_protocol>*`:/ /`*<server_ip>*`/`*<path_to_firmware_image>*`/`*<filename.xxx>*

   A note about the firmware update process followed by message prompts to load the image are displayed. The text of the note depends on your server platform.

4. **At the prompt for loading the specified file, type `y` for yes or `n` for no.**

   The prompt to preserve the configuration appears. For example:

   ```
   Do you want to preserve the configuration (y/n)?
   ```

5. **At the preserve configuration prompt, type `y` for yes or `n` for no.**

   Type **`y`** to save your existing Oracle ILOM configuration and to restore that configuration when the update process completes.

Note – Typing **`n`** at this prompt will advance you to another platform-specific prompt.

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6. **Perform one of the following actions:**

   - If you have a 2.x firmware release installed on your system, the system loads the specified firmware file, then automatically reboots to complete the firmware update. Proceed to Step 7.

- If you have a 3.x firmware release installed on a SPARC system, the system loads the specified firmware file then automatically reboots to complete the firmware update. Proceed to Step 7.
- If you have a 3.x firmware release installed on an x86 system, a prompt to postpone the BIOS update appears. For example:

  ```
  Do you want to force the server off if BIOS needs to be
  upgraded (y/n)?
  ```

  At the prompt to postpone the BIOS update, type **y** for yes or **n** for no.

  The system loads the specified firmware file then automatically reboots to complete the firmware update.

Note – The BIOS prompt appears only on x86 systems currently running Oracle ILOM 3.x firmware release. If you answer yes (**y**) to the prompt, the system postpones the BIOS update until the next time the system reboots. If you answer no (**n**) to the prompt, the system automatically updates the BIOS, if necessary, when updating the firmware.

Note – The BIOS default settings cannot be preserved when you are updating the SP firmware. After you update the SP firmware, the default settings are automatically loaded for the new BIOS image.

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7. **Reconnect to the Oracle ILOM server SP or CMM using an SSH connection and using the same user name and password that you provided in Step 1 of this procedure.**

Note – If you did not preserve the Oracle ILOM configuration before the firmware update, you will need to perform the initial Oracle ILOM setup procedures to reconnect to Oracle ILOM.

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8. **Verify that the proper firmware version was installed. At the CLI prompt, type:**

   ```
   -> version
   ```

   The firmware version on the server SP or CMM should correspond with the firmware version you installed.

▼ Recover From a Network Failure During Firmware Update (CLI)

Note – If you were performing the firmware update process and a network failure occurs, Oracle ILOM automatically times out and reboots the system.

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1. **Address and fix the network problem.**
2. **Reconnect to the Oracle ILOM SP.**
3. **Restart the firmware update process.**

Resetting the Service Processor Using Oracle ILOM

Description	Links	Platform Feature Support
Use the Oracle ILOM web interface to reset the SP	• "Reset the SP Using the Oracle ILOM Web Interface" on page 17	• x86 system server SP • SPARC system server SP • CMM
Use the Oracle ILOM command-line interface to reset the SP	• "Reset the SP Using the Oracle ILOM CLI" on page 18	
Use SNMP to reset the SP	• 'Manage ILOM Backup and Restore Configurations (SNMP)" in *Oracle ILOM 3.0 Protocol Management – SNMP, IPMI, CIM, WS-Man Guide*	

Related Information

- "Updating Firmware Using Oracle ILOM (Web)" on page 8
- "Updating Firmware Using Oracle ILOM (CLI)" on page 11
- *Oracle ILOM 3.0 Protocol Management – SNMP, IPMI, CIM, WS-Man*

▼ Reset the SP Using the Oracle ILOM Web Interface

Before You Begin

- If you need to reset your Oracle ILOM service processor (SP), you can do so without affecting the host OS. However, resetting an SP disconnects your current Oracle ILOM session and renders the SP unmanageable during reset.

- To reset the SP, you need the Reset and Host Control (`r`) role enabled.

To reset the power on the Oracle ILOM SP, follow these steps:

1. **Log in to the Oracle ILOM SP web interface.**
2. **Click Maintenance --> Reset SP.**

   The Reset Service Processor page appears.
3. **Click the Reset SP button.**

   Oracle ILOM reboots. The web interface is unavailable while Oracle ILOM reboots.

▼ Reset the SP Using the Oracle ILOM CLI

Before You Begin

- Resetting the Oracle ILOM service processor (SP) does not affect the host OS. However, resetting the SP disconnects your current Oracle ILOM session and renders the SP unmanageable during the reset.
- To reset the SP, you need the Reset and Host Control (`r`) role enabled.
- After updating the Oracle ILOM/BIOS firmware, you must reset the Oracle ILOM SP or CMM.

To reset the power on the Oracle ILOM SP, follow these steps:

1. **Log in to the Oracle ILOM CLI server SP or CMM.**
2. **Use the `reset` command to boot the power on the server SP or CMM.**

   For example:

   ```
   -> reset /SP
   ```

   or

   ```
   -> reset /CMM
   ```

   The SP or CMM resets and reboots.

Backing Up, Restoring, or Resetting Oracle ILOM Configurations

Description	Links
Back up the Oracle ILOM configuration	• "Backing Up Configurations" on page 20
Optionally edit the backup XML file	• "Optionally Edit the Backup XML File" on page 24
Restore the Oracle ILOM configuration	• "Restoring Configurations" on page 28
Reset Oracle ILOM configuration to default settings	• "Resetting Oracle ILOM Configuration Settings to the Defaults" on page 32
Use SNMP to get and set Oracle ILOM configuration backup, restore and reset management information	• "Manage ILOM Backup and Restore Configurations (SNMP)" in *Oracle ILOM 3.0 Protocol Management – SNMP, IPMI, CIM, WS-Man Guide*

Related Information

- *Oracle ILOM 3.0 Daily Management – CLI Procedures*
- *Oracle ILOM 3.0 Daily Management – Web Interface Procedures*
- *Oracle ILOM 3.0 Protocol Management – SNMP, IPMI, CIM, WS-Man*

Backing Up Configurations

Description	Links	Platform Feature Support
Use the Oracle ILOM web inteface to back up Oracle ILOM's configuration parameters	• "Back Up the Oracle ILOM Configuration (Web)" on page 20	• x86 system server SP • SPARC system server SP • CMM
Use the Oracle ILOM command-line interface to back up Oracle ILOM's configuration parameters	• "Back Up the Oracle ILOM Configuration (CLI)" on page 23	

Related Information

- "Restoring Configurations" on page 28
- "Optionally Edit the Backup XML File" on page 24
- "Resetting Oracle ILOM Configuration Settings to the Defaults" on page 32

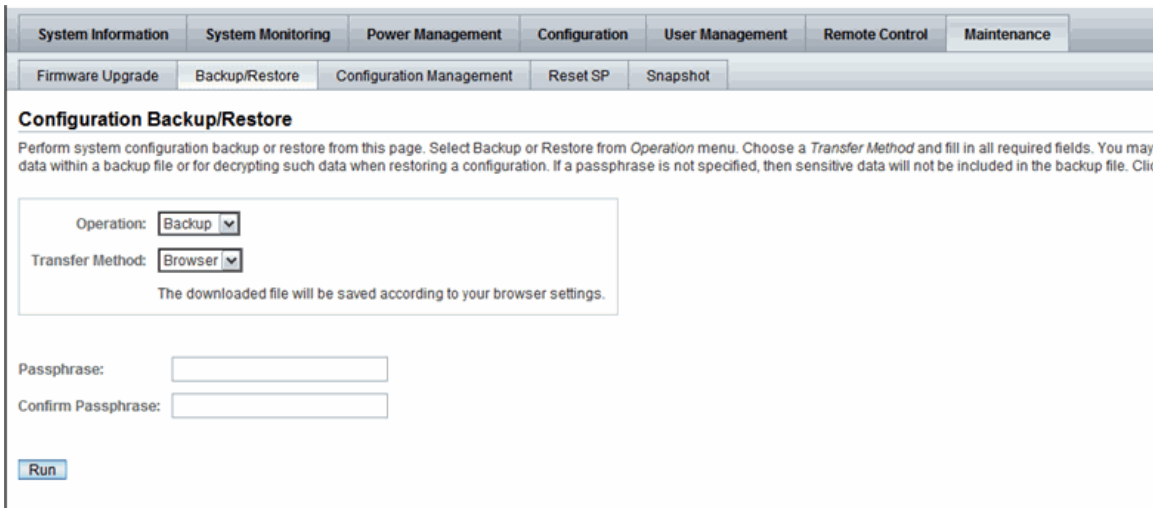
▼ Back Up the Oracle ILOM Configuration (Web)

Before You Begin

- To back up the Oracle ILOM configuration, you need the Admin (`a`), User Management (`u`), Console (`c`), Reset and Host Control (`r`), and Read Only (`o`) roles enabled.
- If you use a user account that does *not* have the roles listed here, the configuration backup file created might not include all of the Oracle ILOM SP configuration data.

1. **Log in to the Oracle ILOM SP or CMM web interface.**
2. **Click Maintenance --> Backup/Restore.**

   The Configuration Backup/Restore page appears.



3. **From the Operation drop-down list, select Backup.**

4. **From the Transfer Method drop-down list, select a transfer method.**

   The following transfer methods are available:

   - Browser
   - TFTP
   - FTP
   - SFTP
   - SCP
   - HTTP
   - HTTPS

5. **If you select the Browser transfer method, the backup file is saved according to your browser settings.**

6. **If you select the TFTP transfer method, the prompts shown in the following figure appear, and you must provide the following information:**

   - **Host** – Enter the remote host IP address or, if you have DNS configured, the name of the remote host.
   - **Filepath** – Enter the path to which to save the configuration backup file in the format: `directoryPath/filename`.

7. **If you select the SCP, FTP, SFTP, HTTP, or HTTPS transfer method, the prompts shown in the following figure appear, and you must provide the following information:**
   - **Host** – Enter the remote host IP address or, if you have DNS configured, the name of the remote host.
   - **Filepath** – Enter the path to which to save the configuration backup file in the format: `directoryPath/filename`.
   - **Username** – Enter the user name of your account on the remote system.
   - **Password** – Enter the password for your account on the remote system.

8. **If you want sensitive data, such as passwords, SSH keys, certificates, and so forth, to be backed up, you must provide a passphrase. Type a passphrase in the Passphrase field and confirm the passphrase in the Confirm Passphrase field.**

   If you do not type a passphrase, sensitive data will not be backed up.

9. **To initiate the backup operation, click Run.**

   The Backup operation is executed.

Note – While the Backup operation is executing, sessions on the Oracle ILOM SP will be momentarily suspended. The sessions will resume normal operation once the Backup operation is complete. A Backup operation typically takes two to three minutes to complete.

▼ Back Up the Oracle ILOM Configuration (CLI)

Before You Begin

- Log in to the Oracle ILOM CLI as a user assigned the Admin, User Management, Console, Reset and Host Control, and Read Only (`a,u,c,r,o`) roles. These roles are required for you to perform a complete backup of the Oracle ILOM SP configuration.
- If you use a user account that does not have the roles listed here, the configuration backup file that is created might not include all of the Oracle ILOM SP configuration data.

Caution – Oracle ILOM will not back up the SSL custom certificate directory unless both a custom SSL certificate and key have been uploaded to Oracle ILOM. If only one of the two customer-provided SSL files (custom certificate or key) have been uploaded, Oracle ILOM will not back up the following directory: `/SP/services/https/ssl`.

---

1. **Log in to the Oracle ILOM CLI SP or CMM.**
2. **Change to the** `/SP/config` **directory. Type:**

   -> **`cd /SP/config`**
3. **If you want sensitive data, such as user passwords, SSH keys, certificates, and so forth, to be backed up, you must provide a passphrase. Type:**

   -> **`set passphrase=`***passphrase*
4. **To initiate the Backup operation, type the following command from within the** `/SP/config` **directory:**

   -> **`set dump_uri=`**
   *transfer_method***`://`***username:password***`@`***ipaddress_or_hostname***`/`***directorypath***`/`***filename*

   Where:

   - *transfer_method* can be `tftp`, `ftp`, `sftp`, `scp`, `http`, or `https`.
   - *username* is the name of the user account on the remote system. (*username* is required for `scp`, `sftp`, and `ftp`. *username* is not used for `tftp`, and it is optional for `http` and `https`.)
   - *password* is the password for the user account on the remote system. (*password* is required for `scp`, `sftp`, and `ftp`. *password* is not used for `tftp`, and it is optional for `http` and `https`.)
   - *ipaddress_or_hostname* is the IP address or the host name of the remote system.
   - *directorypath* is the storage location on the remote system.

- *filename* is the name assigned to the configuration backup file.

For example:

```
-> set dump_uri=
scp://adminuser:userpswd@1.2.3.4/Backup/Lab9/SP123.config
```

The Backup operation executes, and you will be prompted when the operation is complete. A Backup operation typically takes two to three minutes to complete.

Note – While the Backup operation is executing, sessions on the Oracle ILOM SP will be momentarily suspended. The sessions will resume normal operation once the Backup operation is complete.

▼ Optionally Edit the Backup XML File

Before You Begin

- You can restore an Oracle ILOM configuration backup to another system to duplicate configurations. Before you use an XML backup file on another system, you should edit the file to remove any information that is unique to a particular system, for example, the IP address.

The following is an example of a backed-up XML file. The content of the file is abbreviated for this procedure.

```
<SP_config version="3.0">
<entry>
<entry>
<property>/SP/check_physical_presence</property>
<entry>
<property>/SP/config/passphrase</property>
<value encrypted="true">89541176be7c</value>
</entry>
.
.
.
```

```
<property>/SP/clock/datetime</property>
<value>false</value>
<entry>
<property>/SP/network/pendingipaddress</property>
<value>1.2.3.4</value>
</entry>
.
.
.
<value>Mon May 12 15:31:09 2010</value>
</entry>
<entry>
<property>/SP/network/commitpending</property>
<value>true</value>
</entry>
.
.
.
</entry>
<entry>
<entry>
<property>/SP/services/snmp/sets</property>
<value>enabled</value>
</entry>
.
.
.
.
<property>/SP/hostname</property>
<entry>
<property>/SP/users/john/role</property>
<value>aucro</value>
</entry>
<entry>
<property>/SP/users/john/password</property>
<value encrypted="true">c21f5a3df51db69fdf</value>
</entry>
</SP_config>
.
<value>labysystem12</value>
.
</entry>
<entry>
<property>/SP/system_identifier</property>
<value>SUN BLADE X8400 SERVER MODULE, ILOM v3.0.0.0,
r32722</value>
</entry>
.
.
```

```
.
```

1. **Consider the following in the example XML file:**
   - The configuration settings, with exception of the password and the passphrase, are in clear text (unencrypted).
   - The `check_physical_presence` property, which is the first configuration entry in the file, is set to `false`. The default setting is `true` so this setting represents a change to the default Oracle ILOM configuration.
   - The configuration settings for `pendingipaddress` and `commitpending` are examples of settings that should be deleted before you use the backup XML file for a Restore operation because these settings are unique to each server.
   - The user account `john` is configured with the `a`, `u`, `c`, `r`, `o` roles. The default Oracle ILOM configuration does *not* have any configured user accounts so this account represents a change to the default Oracle ILOM configuration.
   - The SNMP `sets` property is set to enabled. The default setting is disabled.
2. **To modify the configuration settings that are in clear text, change the values or add new configuration settings.**

   For example:
   - To change the roles assigned to the user `john`, change the text as follows:

```
<entry>
<property>/SP/users/john/role</property>
<value>auo</value>
</entry>
```

- To add a new user account and assign that account the `a`, `u`, `c`, `r`, `o` roles, add the following text directly below the entry for user `john`:

```
<entry>
<property>/SP/users/bill/role</property>
<value>aucro</value>
</entry>
```

- To change a password, delete the `encrypted="true"` setting and the encrypted password string and type in the new password. For example, to change the password for the user `john`, modify the XML as follows:

  Change:

```
<entry>
<property>/SP/users/john/password</property>
<value encrypted="true">c21f5a3df51db69fdf</value>
</entry>
```

  To:

```
<entry>
<property>/SP/users/john/password</property>
<value>newpassword</value>
</entry>
```

3. **After you have made the changes to the backup XML file, save the file so that you can use it for a Restore operation on the same system or a different system.**

Related Tasks

- "Backing Up Configurations" on page 20
- "Restoring Configurations" on page 28
- "Resetting Oracle ILOM Configuration Settings to the Defaults" on page 32

Restoring Configurations

Description	Links	Platform Feature Support
Use the Oracle ILOM web interface to restore Oracle ILOM configuration settings	• "Restore the Oracle ILOM Configuration (Web)" on page 28	• x86 system server SP • SPARC system server SP • CMM
Use the Oracle ILOM command-line interface to restore Oracle ILOM configuration settings	• "Restore the Oracle ILOM Configuration (CLI)" on page 30	

Related Information

- "Backing Up Configurations" on page 20
- "Optionally Edit the Backup XML File" on page 24
- "Resetting Oracle ILOM Configuration Settings to the Defaults" on page 32

▼ Restore the Oracle ILOM Configuration (Web)

Before You Begin

- To restore the Oracle ILOM configuration you need the Admin (`a`), User Management (`u`), Console (`c`), Reset and Host Control (`r`), and Read Only (`o`) roles enabled.
- If you use a user account that does not have the roles listed here, some of the information in the configuration file might not be restored. When executing a Restore operation, use a user account that has the same or more privileges than the user account that was used to create the backup file; otherwise, some of the backed-up configuration data might not be restored. All configuration properties that are not restored appear in the event log. Therefore, you can verify whether all the configuration properties were restored by checking the event log.

1. **Log in to the Oracle ILOM SP or CMM web interface.**
2. **Click Maintenance --> Backup/Restore.**

   The Configuration Backup/Restore page appears.

3. **From the Operation drop-down list, select Restore.**

   The Configuration Backup/Restore page used for Restore operations appears.

4. **From the Transfer Method drop-down list, select the transfer method.**

   The following transfer methods are available:

   - Browser
   - TFTP
   - FTP
   - SFTP
   - SCP
   - HTTP
   - HTTPS

5. **If you select the Browser transfer method, type the directory path and file name for the configuration backup file, or click the Browse button to determine the backup file location.**

6. **If you select the TFTP transfer method, the prompts shown in the following figure appear, and you must provide the following information:**

   - **Host** – Enter the remote host IP address or, if you have DNS configured, the name of the remote host.
   - **Filepath** – Enter the path to the configuration backup file in the format: `directoryPath/filename`.

7. **If you select the SCP, FTP, SFTP, HTTP, or HTTPS transfer method, the prompts shown in the following figure appear, and you must provide the following information:**

   - **Host** – Enter the remote host IP address or, if you have DNS configured, the name of the remote host.
   - **Filepath** – Enter the path to the configuration backup file in the format: `directoryPath/filename`.
   - **Username** – Enter the user name of your account on the remote system.
   - **Password** – Enter the password for your account on the remote system.

8. **If a passphrase was provided when the backup file was created, type the passphrase in the Passphrase field and confirm it in the Confirm Passphrase field.**

   The passphrase must be the same passphrase that was used when the backup file was created.

9. **To initiate the Restore operation, click Run.**

   The Restore operation executes.

Note – While the Restore operation is executing, sessions on the Oracle ILOM SP will be momentarily suspended. The sessions will resume normal operation once the Restore operation is complete. A Restore operation typically takes two to three minutes to complete.

▼ Restore the Oracle ILOM Configuration (CLI)

Before You Begin

- Log in to the Oracle ILOM CLI as a user assigned the Admin, User Management, Console, Reset and Host Control, and Read Only (`a,u,c,r,o`) roles. These roles are required to perform a complete restore of the Oracle ILOM SP configuration.
- When executing a Restore operation, use a user account that has the same or more privileges than the user account that was used to create the backup file; otherwise, some of the backed up configuration data might not be restored. All configuration properties that are not restored appear in the event log. Therefore, one way to verify whether all the configuration properties were restored is to check the event log.

1. **Log in to the Oracle ILOM CLI SP or CMM.**

2. **Change to the** `/SP/config` **directory. Type:**

   -> **`cd /SP/config`**

3. **If a passphrase was specified when the backup file was created, you must specify the same passphrase to perform the Restore operation. Type:**

   -> **`set passphrase=`***passphrase*

   The passphrase must be the same passphrase that was used when the backup file was created.

4. **To initiate the Restore operation, type the following:**

   -> **`set load_uri=`**
   *transfer_method***`://`***username:password***`@`***ipaddress_or_hostname***`/`***directorypath***`/`***filename*

   Where:

   - *transfer_method* can be `tftp`, `ftp`, `sftp`, `scp`, `http`, or `https`.
   - *username* is the name of the user account on the remote system. (*username* is required for `scp`, `sftp`, and `ftp`. *username* is not used for `tftp`, and it is optional for `http` and `https`.)
   - *password* is the password for the user account on the remote system. (*password* is required for `scp`, `sftp`, and `ftp`. *password* is not used for `tftp`, and it is optional for `http` and `https`.)
   - *ipaddress_or_hostname* is the IP address or the host name of the remote system.
   - *directorypath* is the storage location on the remote system.
   - *filename* is the name assigned to the backup file.

   For example:

   -> **`set load_uri=`**
   `scp://adminuser:userpswd@1.2.3.4/Backup/Lab9/SP123.config`

   The Restore operation executes. The XML file is parsed. A Restore operation typically takes two to three minutes to complete.

Note – While the Restore operation is executing, sessions on the Oracle ILOM SP will be momentarily suspended. The sessions will resume normal operation once the Restore operation is complete.

Resetting Oracle ILOM Configuration Settings to the Defaults

Description	Links	Platform Feature Support
Use the Oracle ILOM web interface to reset Oracle ILOM configuration properties to default settings	• "Reset the Oracle ILOM Configuration to Defaults (Web)" on page 32	• x86 system server SP • SPARC system server SP • CMM
Use the Oracle ILOM command-line interface to reset the Oracle ILOM configuration to the default settings	• "Reset the Oracle ILOM Configuration to Defaults (CLI)" on page 33	

Related Information

- "Backing Up Configurations" on page 20
- "Optionally Edit the Backup XML File" on page 24
- "Restoring Configurations" on page 28

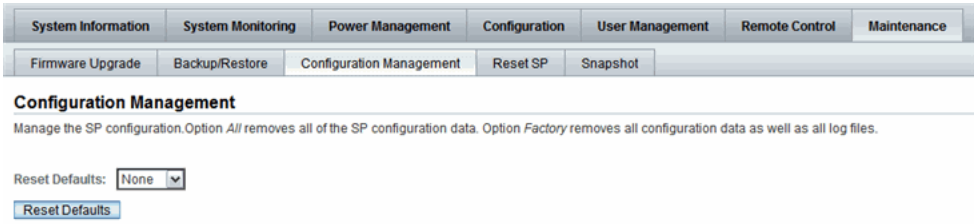
▼ Reset the Oracle ILOM Configuration to Defaults (Web)

Before You Begin

- To reset the Oracle ILOM configuration to defaults, you need the Admin (a) role enabled.

1. **Log in to the Oracle ILOM SP or CMM web interface.**
2. **Click Maintenance --> Configuration Management.**

   The Configuration Management page appears.



3. **In the Reset Defaults drop-down list, click Reset Defaults, and then select one of the following options:**
   - **All** – If you want to reset all of the Oracle ILOM configuration data to the default settings with the exception of the log files, select All and click Reset Defaults. The next time the Oracle ILOM SP reboots, the configuration will be restored to the default settings.
   - **Factory** – If you want to reset all of the Oracle ILOM configuration data to the default settings and also erase the log files, select Factory and click Reset Defaults. The next time the Oracle ILOM SP reboots, the configuration will be restored to the default settings and the log files will be erased.
   - **None** – If you want to cancel the reset to defaults operation just previously issues, select None and click Reset Defaults. The previously issued reset to defaults operation is canceled provided the None option is executed before the Oracle ILOM SP reboots.

▼ Reset the Oracle ILOM Configuration to Defaults (CLI)

Before You Begin

- To reset the Oracle ILOM configuration to the default settings, you need the Admin (`a`) role enabled.

1. **Log in to the Oracle ILOM CLI SP or CMM.**
2. **Change to the `/SP` directory, type:**

   -> **`cd /SP`**

3. **Type one of the following commands, depending on the option you select to reset the default settings.**
   - If you want to reset the Oracle ILOM configuration using the `all` option, type:

     -> **`set reset_to_defaults=all`**

     On the next reboot of the Oracle ILOM SP, the Oracle ILOM configuration default settings will be restored.

- If you want to reset the Oracle ILOM configuration using the `factory` option, type:

  -> **`set reset_to_defaults=factory`**

  On the next reboot of the Oracle ILOM SP, the Oracle ILOM configuration default settings will be restored and the log files will be erased.

- If you want to cancel a reset operation just previously specified, type:

  -> **`set reset_to_defaults=none`**

  The previously issued `reset_to_defaults` command is canceled provided the `reset_to_defaults=none` command is issued before the Oracle ILOM SP reboots.

Diagnostic Tools Overview

Description	Links
Learn how to access diagnostic tools in Oracle ILOM.	• "Server SP Diagnostic Tools" on page 35
Learn about available hardware diagnostic tools for x86 and SPARC servers that can be launched from Oracle ILOM	• "PC-Check (x86 Systems)" on page 36 • "Generate NMI (x86 Systems)" on page 37 • "SPARC System Diagnostic Configuration Settings" on page 37
Learn about Oracle service-designated snapshot and fault management diagnostic tools available in Oracle ILOM	• "Collect SP Data to Diagnose System Problems" on page 39 • "Fault Management Using the Restricted Shell" on page 39

Related Information

- *Oracle ILOM 3.0 Daily Management – CLI Procedures*
- *Oracle ILOM 3.0 Daily Management – Web Interface Procedures*

Server SP Diagnostic Tools

All diagnostics have the same goals: stimulate some component or components, observe the behavior of the components under test, and determine whether the behavior is expected. If the behavior is not expected, diagnostic tools can help to identify the likely cause of the error and send a clear message or notification to the user.

Diagnostic configuration options in Oracle ILOM are accessible from the Remote Control --> Diagnostics tab in the Oracle ILOM web interface or by using the CLI.

Refer to the following sections and your platform Oracle ILOM supplement guide or platform administration guide for information about all supported diagnostics.

PC-Check (x86 Systems)

Pc-Check is a DOS-based utility that is integrated into your system service processor (SP) firmware. This utility can be accessed from Oracle ILOM, or the utility can be accessed and executed from your server Tools and Drivers DVD. Pc-Check tests all motherboard components (CPU, memory, and I/O), ports, and slots. When enabled, this utility runs at host power-on. The Pc-Check utility is disabled by default in Oracle ILOM.

Pc-Check has four operating modes that you can run either through the Oracle ILOM web interface or through the Oracle ILOM CLI. These modes are as follows:

- **Enabled** – If you want to run Pc-Check diagnostic tests upon start-up of the host, select this mode. It is recommended that you run this mode prior to a mission-critical application to ensure the quality of the system. This mode runs a predefined test suite without user intervention and, upon completion, will continue to boot the next device based on the BIOS Boot Priority List. Use this mode as a quick test for first-time field installation. These basic diagnostic tests typically take five minutes to complete.
- **Extended** – If you want to run extended Pc-Check diagnostic tests upon start-up of the host, select this mode. You should run this mode for first-time installation of the system. This mode runs a comprehensive test suite to ensure that the system was transported without physical damage. This mode should also be run any time you physically change the system configuration to ensure that newly added components are installed correctly prior to running production operating systems and applications. These extended diagnostic tests typically take 20 to 40 minutes to complete.
- **Manual** – If you want to run select Pc-Check diagnostic tests upon start-up of the host, select this mode. You can use this mode to select individual tests from the Pc-Check menus, or to select predefined test suites available through the Immediate Burn-in test menu.
- **Disabled** – If you do not want to run Pc-Check diagnostic tests upon start-up of the host, select this mode. This is the default mode when your system arrives. You should set up Pc-Check to Disabled mode when you have concluded running the diagnostic tests.

For more information about specific test suites and in-depth instructions for running the Pc-Check diagnostics utility, refer to the *Oracle x86 Servers Diagnostics Guide*.

Related Information

- "x86 Server SP Diagnostic Tools" on page 41
- *Oracle x86 Servers Diagnostics Guide*
- Service and administration documentation for your server

Generate NMI (x86 Systems)

You can send a non-maskable interrupt (NMI) to the host operating system using either the CLI or the web interface. Note that sending an NMI to the host could cause the host to stop responding and wait for input from an external debugger. Therefore, you should use this feature only if prompted to do so by Oracle Services personnel.

Related Information

- "x86 Server SP Diagnostic Tools" on page 41
- *Oracle x86 Servers Diagnostics Guide*
- Service and administration documentation for your server

SPARC System Diagnostic Configuration Settings

On an Oracle SPARC system using Oracle ILOM, you can enable the diagnostic mode, specify triggers and the level of diagnostics, as well as the verbosity of the diagnostic output. For more information about SPARC platform diagnostics, see your platform- specific service manual.

Oracle ILOM web interface examples of x86 server and SPARC server Diagnostics pages are displayed in the following figures.

FIGURE: Diagnostic Page for x86 Systems

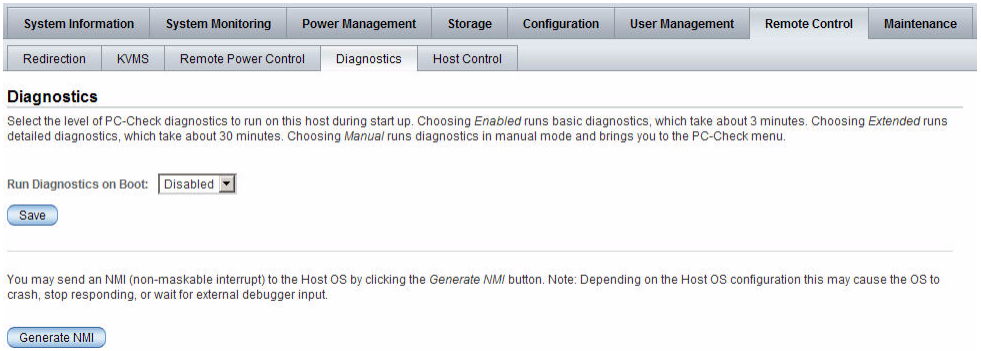
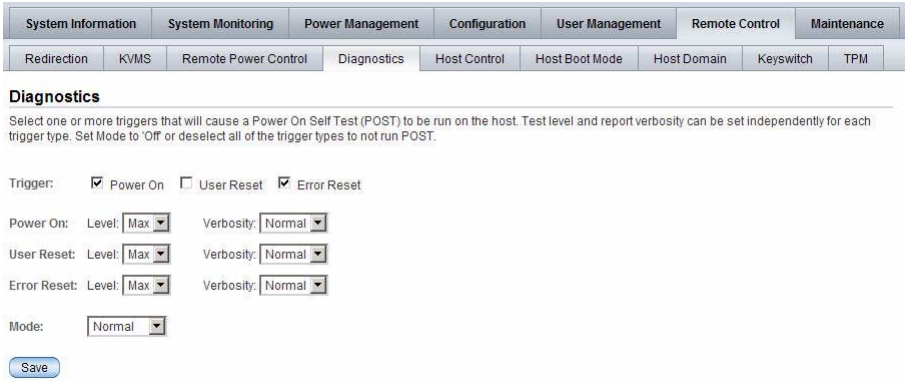


FIGURE: Diagnostics Page for SPARC Servers



Related Information

- "SPARC Server SP Diagnostic Tools" on page 47
- Service and administration documentation for your server

Oracle Service-Designated Diagnostic Tools

The topics in this section describe tools used by Oracle Services for troubleshooting system issues.

- "Collect SP Data to Diagnose System Problems" on page 39
- "Fault Management Using the Restricted Shell" on page 39

Collect SP Data to Diagnose System Problems

The Oracle ILOM Service Snapshot utility enables you to produce a snapshot of the server processor at any instant in time. You can run the utility from the Oracle ILOM CLI or the web interface.

Caution – The purpose of the Oracle ILOM Service Snapshot utility is to collect data for use by Oracle Services personnel to diagnose system problems. Customers should not run this utility unless requested to do so by Oracle Services personnel.

The Oracle ILOM Service Snapshot utility gathers SP state data. The utility collects log files, runs various commands and collects their output, and sends the data collection as a downloaded file to a user-defined location.

As of Oracle ILOM 3.0.3, a FRUID data set option is available from the Snapshot utility. Specifically, this option enables Services personnel to analyze data in a binary format about field-replaceable hardware installed on a server. This FRUID option is not for customer use, unless an authorized Services representative instructs a customer to use the option.

Related Information

- "Collecting SP Data to Diagnose System Problems" on page 53
- Service and administration documentation for your server

Fault Management Using the Restricted Shell

The Oracle ILOM Fault Management shell can be used by administrators and Oracle Services personnel to view and modify system fault management configuration parameters maintained by Oracle ILOM.

Oracle ILOM receives information relating to problems detected by the system software, diagnoses those problems, and initiates proactive self-healing activities such as disabling faulty components. Most of these fault management activities are automated. If additional intervention is required by an administrator or Oracle Services personnel, Oracle ILOM produces a message indicating what's required. During a manual diagnostic process, utilities provided in the Fault Management shell can be used to gather more information or perform additional tasks.

The Fault Management shell is a captive shell. It must be run as a separate shell from the Oracle ILOM CLI. Only Fault management commands are allowed in this shell.

Note – Other platform specific fault management commands might be available for use, to determine if other platform fault management commands exist for your server, refer to the ILOM supplement, administration guide, or service manual for the server.

Related Information

- "Using the Oracle ILOM Fault Management Shell" on page 57
- Service and administration documentation for your server

x86 Server SP Diagnostic Tools

Description	Links
Learn how to diagnose x86 server hardware issues with Pc-Check and to generate a server non-maskable interrupt using Oracle ILOM	• "Diagnosing x86 Systems Hardware Issues (Web)" on page 41 • "Diagnosing x86 Systems Hardware Issues (CLI)" on page 43

Related Information

- *Oracle x86 Servers Diagnostics Guide*
- Service and administration documentation for your server

Diagnosing x86 Systems Hardware Issues (Web)

Note – For additional information about common x86 diagnostic tools, refer to the *Oracle x86 Servers Diagnostic Guide*.

Description	Links	Platform Feature Support
Use Oracle ILOM to launch x86 Pc-Check diagnostic software	• "Configure Pc-Check Diagnostics for x86 Systems" on page 42	• x86 system server SP
Use Oracle ILOM to generate a non-maskable interrupt on an x86 server	• "Generate an NMI" on page 42	

▼ Configure Pc-Check Diagnostics for x86 Systems

Before You Begin

- To diagnose x86 systems hardware issues, you need the Reset and Host Control (`r`) role enabled.
- After you configure the Pc-Check diagnostics, you must reset the host to run diagnostic tests.

To configure Pc-Check diagnostics, follow these steps:

1. **Log in to the Oracle ILOM SP web interface.**
2. **Click Remote Control --> Diagnostics.**

   The Diagnostics page appears.
3. **From the Run Diagnostics on Boot drop-down list, select one of the following options:**
   - **Disabled** – If you do not want to run Pc-Check diagnostic tests upon startup of a remote host server, select Disabled.
   - **Enabled** – If you want to run basic Pc-Check diagnostic tests upon start-up of the remote host server, select Enabled. These basic diagnostic tests typically take 5 minutes to complete.
   - **Extended** – If you want to run extended Pc-Check diagnostic tests upon start-up of the remote host server, select Extended. These extended diagnostic tests typically take 20 to 40 minutes to complete.
   - **Manual** – If you want to run select Pc-Check diagnostic tests upon start-up of the remote host server, select Manual.
4. **Click Save for your settings to take effect.**

   If you selected the Manual option, the graphical interface for Pc-Check diagnostics appears after the host is reset. From this interface, you can select which Pc-Check diagnostic tests to run.

▼ Generate an NMI

Caution – Depending on the host operating system configuration, generating a non-maskable interrupt (NMI) might cause the operating system to crash, stop responding, or wait for external debugger input.

To generate a NMI, follow these steps:

1. **Log in to the Oracle ILOM SP web interface.**

2. **Click Remote Control --> Diagnostics.**

   The Diagnostics page appears.

3. **Click the Generate NMI button.**

   A non-maskable interrupt (NMI) is generated to the host operating system.

Diagnosing x86 Systems Hardware Issues (CLI)

Description	Links	Platform Feature Support
Configure and run Pc-Check diagnostic test	• "Configure and Run Pc-Check Diagnostics (CLI)" on page 43	• x86 system server SP
Generate an NMI to a host	• "Generate a Non-Maskable Interrupt (CLI)" on page 44	
Run other x86 system hardware diagnostic tests and tools	• *Oracle x86 Servers Diagnostics Guide*	

▼ Configure and Run Pc-Check Diagnostics (CLI)

Before You Begin

- To diagnose x86 systems hardware issues, you need the Reset and Host Control (`r`) role enabled.
- After you configure the Pc-Check diagnostics, you must reset the host to run diagnostic tests.

To configure Pc-Check diagnostics, follow these steps:

1. **Log in to the Oracle ILOM CLI server SP.**

2. **Type the following commands to enable the diagnostic tests:**

```
-> cd /HOST/diag/
/HOST/diag

-> show /HOST/diag
    Targets:
```

```
    Properties:
        state = disabled

    Commands:
        cd
        set
        show

-> set state=extended  This will enable Pc-Check to run a 20-40 minute test suite
OR
-> set state=enabled  This will enable Pc-Check to run a 4-5 minute test suite
OR
-> set state=manual  This will enable you to select specific Pc-Check tests to run

-> show
    Targets:

    Properties:
        state = enabled

    Commands:
        cd
        set
        show
```

3. **Reset the power on the host to run the PC diagnostic tests.**

▼ Generate a Non-Maskable Interrupt (CLI)

Caution – Depending on the host OS configuration, generating a non-maskable interrupt (NMI) might cause the OS to crash, stop responding, or wait for external debugger input.

1. **Log in to the Oracle ILOM CLI server SP.**
2. **Type the following commands:**

```
-> cd /HOST
/HOST

-> show
/HOST
    Targets:
        diag
```

```
    Properties:
        generate_host_nmi = (Cannot show property)

    Commands:
        cd
        set
        show

-> set generate_host_nmi=true
set 'generate_host_nmi' to 'true'
```

SPARC Server SP Diagnostic Tools

Description	Links
Learn how to diagnose SPARC server hardware issues using Oracle ILOM	• "Diagnosing SPARC Systems Hardware Issues (Web)" on page 47 • "Diagnosing SPARC Systems Hardware Issues (CLI)" on page 49
Use SNMP to get and set SPARC host diagnostic properties	• "Managing SPARC Diagnostic, POST, and Boot Mode Properties (SNMP)" in *Oracle ILOM 3.0 Protocol Management – SNMP, IPMI, CIM, WS-Man Guide*

Related Information

- *Oracle ILOM 3.0 Daily Management – CLI Procedures*
- *Oracle ILOM 3.0 Daily Management – Web Interface Procedures*
- *Oracle ILOM 3.0 Protocol Management – SNMP, IPMI, CIM, WS-Man*

Diagnosing SPARC Systems Hardware Issues (Web)

Description	Link	Feature Platform Support
Diagnose SPARC system hardware issue	• "Configure Diagnostics Settings for SPARC Systems" on page 48	• SPARC system server SP

▼ Configure Diagnostics Settings for SPARC Systems

Before You Begin

- To configure and run diagnostic tests on a SPARC processor-based system, you need the Reset and Host control (`r`) role enabled.

To configure diagnostic settings for SPARC systems, follow these steps:

1. **Log in to the Oracle ILOM SP web interface.**
2. **Click Remote Control > Diagnostics.**

   The Diagnostics page appears.
3. **Select a value for Trigger:**
   - **Power On** – Diagnostics will be run when power is applied.
   - **User Reset** – Diagnostics will be run upon a user-invoked reset.
   - **Error Reset** – Diagnostics will be run upon any error-invoked reset.
4. **Select a value for Verbosity for each trigger type:**
   - **None** – Diagnostics do not print any output on the system console when running, unless a fault is detected.
   - **Min** – Diagnostics print a limited amount of output on the system console (the default value).
   - **Normal** – Diagnostics print a moderate amount of output on the system console, including the name and results of each test being run.
   - **Debug** – Diagnostics print extensive debugging output on the system console, including devices being tested and debug output of each test.
5. **Select a value for Level for each trigger type:**
   - **Min** – Run the minimum level of diagnostics to verify the system.
   - **Max** – Run the maximum set of diagnostics to fully verify system health (the default value).
6. **Select a value for Mode:**
   - **Off** – Do not run any diagnostics.
   - **Normal** – Run diagnostics (the default value).
7. **Click Save for your settings to take effect.**

Diagnosing SPARC Systems Hardware Issues (CLI)

Description	Links	Platform Feature Support
Configure the system to run diagnostic tests	• "Configure Diagnostics Mode (CLI)" on page 49	• SPARC system server SP
Specify which diagnostic triggers to activate	• "Specify the Diagnostics Trigger (CLI)" on page 50	
Specify the level of diagnostics that you want to execute	• "Specify Level of Diagnostics (CLI)" on page 50	
Specify the verbosity output of the executed diagnostic tests	• "Specify Verbosity of Diagnostics Output (CLI)" on page 51	

▼ Configure Diagnostics Mode (CLI)

Before You Begin

- To configure and run diagnostic tests on a SPARC processor-based system, you need the Reset and Host control (`r`) role enabled.
- Use the `/HOST/diag` host mode property to control whether diagnostics are enabled and to specify which diagnostic mode is enabled.

To configure the diagnostic mode, follow these steps:

1. **Log in to the Oracle ILOM CLI server SP.**
2. **At the command prompt, type the following command:**

   -> **`set /HOST/diag mode`**=*value*

   where *value* is one of the following:

   - `off` – Do not run any diagnostics.
   - `normal` – Run diagnostics (the default value).
3. **Reset the power on the host to run the diagnostic tests.**

▼ Specify the Diagnostics Trigger (CLI)

Before You Begin

- To configure and run diagnostic tests on a SPARC processor-based system, you need the Reset and Host control (`r`) role enabled.
- You can select one or more triggers that will cause a power-on self-test (POST) to be run on the host.

To set the trigger levels, follow these steps:

1. **Log in to the Oracle ILOM CLI server SP.**
2. **At the command prompt, type the following command**

   -> **`set /HOST/diag trigger=`***value*

   where *value* can be one of the following:

   - `none` – Diagnostics will not be triggered to run.
   - `user-reset` – Diagnostics will be run upon a user-invoked reset.
   - `power-on-reset` – Diagnostics will be run when power is applied.
   - `error-reset` – Diagnostics will be run upon any error-invoked reset.
   - `all-resets` – Diagnostics will be run for any of the reset types.

▼ Specify Level of Diagnostics (CLI)

Before You Begin

- To configure and run diagnostic tests on a SPARC processor-based system, you need the Reset and Host control (`r`) role enabled.
- Use the `/HOST/diag` *level* property to specify the level of diagnostic testing to be executed when diagnostics are enabled.

There are separate Oracle ILOM CLI properties that enable you to specify the level of diagnostic testing to be executed, depending on how the diagnostics were triggered to run. This gives granular control of how much diagnostic testing is performed in different host reset situations.

To specify the level of diagnostics to be executed, follow these steps:

1. **Log in to the Oracle ILOM CLI server SP.**
2. **Perform the one of the following commands, depending on how the host is reset:**
   - To specify the diagnostic level when the host is powered on, type the following command:

> **set /HOST/diag power_on_level=***value*

- To specify the diagnostic level when the host is reset by the user, type the following command:

  -> **set /HOST/diag user_reset_level=***value*

- To specify the diagnostic level when the host is reset due to a system error, type the following command:

  -> **set /HOST/diag error_reset_level=***value*

where *value* is one of the following:

- `min` – Run the minimum level of diagnostics to verify the system.
- `max` – Run the maximum set of diagnostics to fully verify system health (the default value).

Note – For backward compatibility with Oracle ILOM 2.x, the former property `/HOST/diag` *level* is still supported as a shortcut for specifying the same diagnostic level for all trigger types. Any value set to `/HOST/diag` *level* will be applied to all three trigger-specific properties: `power_on_level`, `user_reset_level`, and `error_reset_level`.

---

3. **Reset the power on the host to run the diagnostic tests.**

▼ Specify Verbosity of Diagnostics Output (CLI)

Before You Begin

- To configure and run diagnostic tests on a SPARC processor-based system, you need the Reset and Host control (`r`) role enabled.
- Use the `/HOST/diag` *level* property to specify the level of diagnostic testing to be executed when diagnostics are enabled.

There are separate Oracle ILOM CLI properties that enable you to specify the level of diagnostic testing to be executed, depending on how the diagnostics were triggered to run. This gives granular control of how much diagnostic testing is performed in different host reset situations.

To specify the verbosity of the diagnostics output, follow these steps:

1. **Log in to the Oracle ILOM CLI server SP.**

2. **Perform one of the following commands, depending on how the host was reset:**

   - To specify the output verbosity for diagnostics executed when the host is powered on, type the following command:

     -> **set /HOST/diag power_on_verbosity=***value*

- To specify the output verbosity for diagnostics executed when the host is reset by the user, type the following command:

  -> **set /HOST/diag user_reset_verbosity=***value*

- To specify the output verbosity for diagnostics executed when the host is reset due to a system error, type the following command:

  -> **set /HOST/diag error_reset_verbosity=***value*

Where *value* is one of the following:

- `none` – Diagnostics do not print any output on the system console when running, unless a fault is detected.
- `min` – Diagnostics print a limited amount of output on the system console.
- `normal` – Diagnostics print a moderate amount of output on the system console (the default value).
- `max` – Diagnostics print full output on the system console, including the name and results of each test being run.
- `debug` – Diagnostics print extensive debugging output on the system console, including devices being tested and debug output of each test.

Note – For backward compatibility with Oracle ILOM 2.x, the former property `/HOST/diag` *verbosity* is still supported as a shortcut for specifying the same output verbosity for all trigger types. Any value set to `/HOST/diag` *verbosity* will be applied to all three trigger-specific verbosity properties: `power_on_verbosity`, `user_reset_verbosity`, and `error_reset_verbosity`.

---

3. Reset the power on the host to run the diagnostic tests.

Oracle Services-Designated Diagnosic Tools

Descriptions	Links	Platform Feature Support
Use the Oracle ILOM snapshot feature to collect SP data to diagnose server issues	• "Collecting SP Data to Diagnose System Problems" on page 53	• Oracle Services personnel feature only
Use the Oracle ILOM Fault Management Shell to diagnose server issues	• "Using the Oracle ILOM Fault Management Shell" on page 57	

Related Information

- *Oracle ILOM 3.0 Daily Management – CLI Procedures*
- *Oracle ILOM 3.0 Daily Management – Web Interface Procedures*

Collecting SP Data to Diagnose System Problems

Descriptions	Links	Platform Feature Support
Use the Oracle ILOM snapshot feature to collect SP data to diagnose server issues	• "Using the Oracle ILOM Snapshot Utility (Web)" on page 54 • "Using the Oracle ILOM Snapshot Utility (CLI)" on page 55	• Oracle Service personnel feature only

▼ Using the Oracle ILOM Snapshot Utility (Web)

Before You Begin

- To collect SP data using the Service Snapshot utility, you need the Admin (a) role enabled.

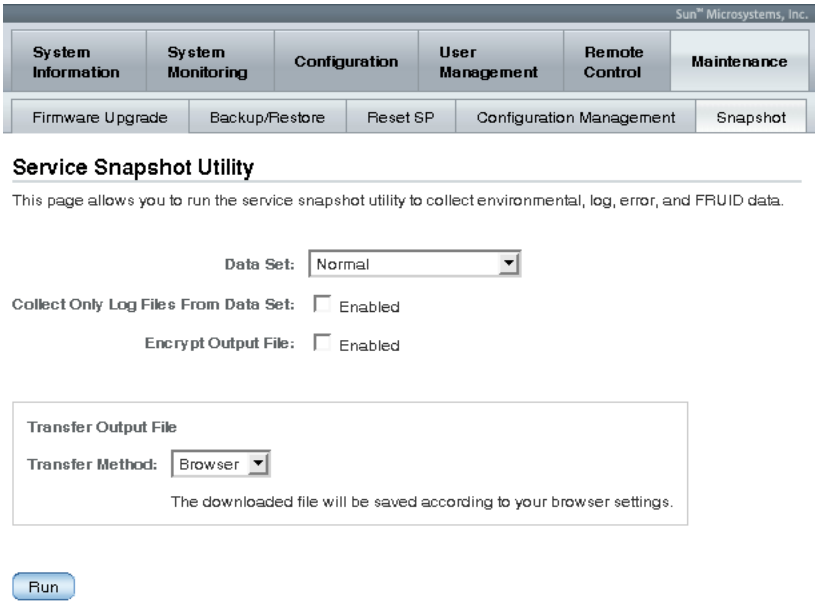
To override the BIOS boot device setting from Oracle ILOM by using the Host Control features, perform the following steps:

Caution – The purpose of the Oracle ILOM Services Snapshot utility is to collect data for use by Oracle Services personnel to diagnose system problems. Customers should not run this utility unless requested to do so by Oracle Services.

---

1. **Log in to the Oracle ILOM SP web interface.**
2. **Click Maintenance --> Snapshot.**

   The Service Snapshot Utility page appears.



3. **Select the data set: Normal, FRUID, Full, or Custom.**
   - **Normal** – Specifies that Oracle ILOM, operating system, and hardware information is to be collected.
   - **FRUID** – Available as of Oracle ILOM 3.0.3, specifies that information about FRUs currently configured on your server in addition to the data collected by the Normal set option is to be collected.

- **Full** – Specifies that all data is to be collected. Selecting Full might reset the system.
- **Custom** – Allows you to choose one or more of the following data sets:
  - Oracle ILOM data
  - Hardware data
  - Basic OS data
  - Diagnostic data
  - FRUID data

4. **If you want to collect only log files from the data set, click the Enabled check box.**
5. **If you want to encrypt the output file, click the Enabled check box.**
6. **Select one of the following methods to transfer the output file:**
   - Browser
   - SFTP
   - FTP
7. **Click Run.**

   A Save As dialog box appears.
8. **In the dialog box, specify the directory to which to save the file and the file name.**
9. **Click OK.**

   The file is saved to the specified directory.

▼ Using the Oracle ILOM Snapshot Utility (CLI)

Before You Begin

- To collect SP data using the Service Snapshot utility, you need the Admin`(a)` role enabled.

To run the Service Snapshot utility, follow these steps:

Caution – The purpose of the Oracle ILOM Service Snapshot utility is to collect data for use by Oracle Services personnel to diagnose system problems. Customers should not run this utility unless requested to do so by Oracle Services.

---

1. **Log in to the Oracle ILOM CLI server SP.**

2. **Type the following commands:**

```
->set /SP/diag/snapshot dataset=data
->set /SP/diag/snapshot dump_uri=URI
```

where *data* and *URI* are one of the following:

Variable	Option	Description
data	`normal`	Specifies that Oracle ILOM, operating system, and hardware information is to be collected.
	`FRUID`	Available as of Oracle ILOM 3.0.3, requests Oracle ILOM to collect information about FRUs currently configured on your server in addition to the data collected by the `normal` option.
	`full`	Specifies that all data is to be collected ("full" collection). **Note -** Using this option might reset the running host.
	• `normal-logonly` • `fruid-logonly` • `full-logonly`	Specifies that only log files are to be collected.

URI	Any valid target directory location	Specifies the URI of the target directory. The URI format is as follows:
		`protocol://username:password@host/directory`
		where `protocol` can be one of these transfer methods: SFTP or FTP.
		For example, to store the snapshot information in the directory named `data` on the host, define the *URI* as follows:
		`ftp://joe:`*mypasswd@host_ip_address*`/data`
		The directory `data` is relative to the user's login, so the directory would probably be `/home/joe/data`.

Using the Oracle ILOM Fault Management Shell

Descriptions	Links	Platform Feature Support
Understand the terms used in Oracle ILOM fault management	• "Fault Management Terms" on page 57	• Oracle Service personnel feature only
Launch, exit, or view the log of Fault Management shell sessions	• "Starting, Stopping, and Logging Fault Management Shell Sessions" on page 58	
Learn how to use Fault Management shell commands and options	• "Fault Management Shell Command Reference" on page 59	

Fault Management Terms

The following fault management terms are defined.

Term	Description
Fault	A detected error condition in the hardware or software. A fault can be logged to the ILOM system event log.
FMRI	Fault Management Resource Identifier. This could be either the FRU name or UUID.
FRU	Field replaceable unit (such as a drive, memory DIMM, or printed circuit board).
Proactive Self-Healing	Proactive Self-Healing is an architecture and methodology for automatically diagnosing, reporting, and handling software and hardware fault conditions. This reduces the time required to debug a hardware or software problem and provides the administrator or Oracle support with detailed data about each fault. The architecture consists of an event management protocol, the fault manager, and the fault-handling software.
Universal Unique Identifier (UUID)	Used to uniquely identify a problem across any set of systems.

▼ Starting, Stopping, and Logging Fault Management Shell Sessions

The Fault Management shell is launched as a separate shell through the Oracle ILOM CLI. Only fault management commands can be run from this shell. To run standard Oracle ILOM commands, you must first exit the Fault Management shell.

Caution – The purpose of the Oracle ILOM Fault Management restricted shell is to help Oracle Services personnel diagnose system problems. Customers should not run commands in the shell unless requested to do so by Oracle Services.

---

1. **To launch the shell, enter the following command when logged in to the command-line interface of the system's Oracle ILOM service processor:**

   ```
   -> start /SP/faultmgmt/shell
   ```

   The Fault Management shell command prompt is displayed:

   ```
   faultmgmtsh>
   ```

2. **At the fault management shell prompt, enter a command.**

   The Fault Management shell includes the following commands.

Command	Description
`fmadm`	Administers the fault management service.
`fmdump`	Displays contents of the fault and ereport/error logs.
`fmstat`	Displays statistics on fault management operations.
`echo`	Displays the exit code of the last command executed.
`help`	Displays a list of the fault management commands that you can run after starting the shell.
`exit`	Exits the Fault Management shell.

3. **To exit the shell, enter the following command from the prompt:**

   ```
   faultmgmtsh> exit
   ```

4. **View an audit log of all commands executed during the session.**

   An audit log will is saved to the SP event log at:

   ```
   /SP/logs/event
   ```

Fault Management Shell Command Reference

Descriptions	Links
Administering the fault management service using `fmadm`	• "fmadm – Fault Management Administration Tool" on page 59
Displaying the contents of the fault and ereport/error logs using `fmdump`	• "fmdump – Fault Management Log Viewer" on page 63
Displayings statistics on fault mangement operations using `fmstat`	• "fmstat – Statistical Module Report Generator" on page 65
Displaying the exit code of the last command executed using `echo`	• "echo – Display Exit Code for Last Command" on page 67
Displaying a list of the fault management commands that can run after entering the shell using `help`	• "help – Display Command Online Help" on page 67

`fmadm` – Fault Management Administration Tool

The `fmadm` utility can be used by administrators and service personnel to view and modify system fault management configuration parameters maintained by ILOM. Use `fmadm` to:

- View the list of system components that have been diagnosed as faulty.
- Perform administrative tasks related to these entities.

Note – The `fmadm` utility requires the user to be logged into ILOM with administrator privileges.

Syntax

`fmadm` **[***subcommand* **[***arguments***]]**

Subcommands

The `fmadm` utility accepts the following subcommands. Some of the subcommands accept or require additional options and operands

Subcommand	Description
`acquit` *fru*	Notify the Fault Manager that the specified *fru* is not to be considered to be a suspect in the fault event identified by *uuid*, or if no UUID is specified, then in any fault or faults that have been detected. The `fmadm acquit` subcommand should be used only at the direction of a documented Oracle repair procedure. Administrators might need to apply additional commands to re-enable a previously faulted resource. Example: **`fmadm acquit /SYS/hdd1`**
`acquit` *uuid*	Notify Oracle ILOM that the fault event identified by *uuid* can be safely ignored. The `fmadm acquit` subcommand should be used only at the direction of a documented Oracle repair procedure. Administrators might need to apply additional commands to re-enable any previously faulted resources. Example: **`fmadm acquit 6d76a0f4-b5f5-623c-af8b-9d7b53812ea1`**

Subcommand	Description
`faulty [-afrs] [-u` *uuid*`]`	Display status information for resources that Oracle ILOM has detected as faulty. The following arguments are supported: • `-a` Display all faults. (Default.) • `-f` Display faulty FRUs (Field Replaceable Units). • `-r` Display faulty FRUs and their fault management state (states are described below). • `-s` Display one line fault summary for each fault event. • `-u` *uuid* Only display faults for a given *uuid*. Oracle ILOM associates the following management states with every resource for which telemetry information has been received: • `ok` The resource is present and in use and has no known problems detected by Oracle ILOM. • `unknown` The resource is not present or not usable but has no known problems. This might indicate the resource has been disabled or deconfigured by an administrator. Consult the appropriate management tools for more information. • `faulted` The resource is present but is not usable because one or more problems have been diagnosed by Oracle ILOM. The resource has been disabled to prevent further damage to the system. • `degraded` The resource is present and usable, but one or more problems have been diagnosed in the resource by Oracle ILOM. If all affected resources are in the same state, this is reflected in the message at the end of the list. Otherwise the state is given after each affected resource.

Subcommand	Description
`repaired` *fru* | *uuid*	Notify Oracle ILOM that a repair procedure has been carried out on the specified *fru* or *uuid*. The `fmadm repaired` subcommand should be used only at the direction of a documented Oracle repair procedure. Administrators might need to apply additional commands to re-enable a previously faulted resource. An equivalent to this command is **`fmadm repair`** *fru*.
`replaced` *fru* | *uuid*	Notify Oracle ILOM that the specified *fru* or *uuid* resource has been replaced. This command should be used in those cases where Oracle ILOM is unable to automatically detect the replacement. The `fmadm replaced` subcommand should be used only at the direction of a documented Oracle repair procedure. Administrators might need to apply additional commands to re-enable a previously faulted resource.
`rotate errlog | fltlog`	The rotate subcommand causes the specified log file (the error log or fault log file) to be rotated. Up to ten files are maintained in the rotation with the most recent version ending with a `.0`. Example: **`fmadm rotate /SP/logs/event/errlog`**

Example

This example displays the logged faults.

```
faultmgmtsp> fmadm faulty -a
------------------- ------------------------------------ ------------- -------
Time                UUID                                 msgid         Severity
------------------- ------------------------------------ ------------- -------
2011-02-02/16:18:29 d3547797-014f-edff-cbb4-e9bef7dc3c9d SPX86-8000-33  Major

Fault class : fault.chassis.device.fan.fail

FRU         : /SYS/FM0
(Part Number: unknown)
(Serial Number: unknown)

Description : Fan tachometer speed is below its normal operating range.
```

```
Response    : The service-required LED may be illuminated on the affected
FRU and chassis.  System will be powered down when the High
Temperature threshold is reached.

Impact      : System may be powered down if redundant fan modules are not
operational.

Action      : The administrator should review the ILOM event log for
additional information pertaining to this diagnosis.  Please
refer to the Details section of the Knowledge Article for
additional information.
```

Exit Status

Value	Description
0	Successful completion.
1	An error occurred. Errors include a failure to communicate with ILOM or insufficient privileges to perform the requested operation.

`fmdump` – Fault Management Log Viewer

The `fmdump` utility can be used to display the contents of any of the log files associated with Oracle ILOM. Oracle ILOM receives telemetry information relating to problems detected by the system software, diagnoses these problems, and initiates proactive self-healing activities such as disabling faulty components. Oracle ILOM maintains two sets of log files for use by administrators and service personnel:

`error` log	A log which records error telemetry; the symptoms of problems detected by the system.
`fault` log	A log which records fault diagnosis information; the problems possibly related to the symptoms.

By default, `fmdump` displays the contents of the fault log, which records the result of each diagnosis made by the fault manager or one of its component modules.

Here is an example of a default `fmdump` display:

```
faultmgmtsp> fmdump
TIMESTAMP           UUID                                 MSGID
2010-02-25/06:05:38 6d76a0f4-b5f5-623c-af8b-9d7b53812ea1 SPX86-8001-TS
```

Each problem recorded in the fault log is identified by:

- The time of its diagnosis.
- A Universal Unique Identifier (UUID) that can be used to uniquely identify a particular problem across any set of systems.
- A message identifier that can be used to access a corresponding knowledge article located on Oracle's support web site.

If a problem requires action by a human administrator or service technician or affects system behavior, ILOM also issues a human-readable message to its Event Log. This message provides a summary of the problem and a reference to the knowledge article on the Oracle web site.

You can use the `-v` and `-V` options to expand the display from a single-line summary to increased levels of detail for each event recorded in the log. The -u option can be used to filter the output by selecting only those events that match the specified uuid.

Syntax

fmdump [*options* [*argument*]]

Options

The following options are supported:

Option	Description
`-e`	Display events from the fault management error log instead of the fault log. This option is shorthand for specifying the pathname of the error log file. The error log file contains Private telemetry information used by Oracle's automated diagnosis software. This information is recorded to facilitate post-mortem analysis of problems and event replay, and should not be parsed or relied upon for the development of scripts and other tools.
`-u` *uuid*	Select fault diagnosis events that exactly match the specified argument (*uuid*). Each diagnosis is associated with a Universal Unique Identifier (UUID) for identification purposes. The `-u` option can be combined with other options such as `-v` to show all of the details associated with a particular diagnosis. If the `-e` option and -u option are both present, the error events that are cross-referenced by the specified diagnosis are displayed.
`-v`	Display verbose event detail. The event display is enlarged to show additional common members of the selected events.

Option	Description
-V	Display very verbose event detail. The event display is enlarged to show every member of the name-value pair list associated with each event. In addition, for fault logs, the event display includes a list of crossreferences to the corresponding errors that were associated with the diagnosis.

Example

This example dumps the fault log for the designated FRU UUID.

```
faultmgmtsp> fmdump -V -u edddce14-bf6f-eca7-aff8-dd84e9be27dc
2010-10-05/12:02:18  edddce14-bf6f-eca7-aff8-dd84e9be27dc   SPX86-8000-33

fault = fault.chassis.device.fan.fail@/sys/fm1
certainty = 100.0 %
FRU       = /sys/fm1
ASRU      = /sys/fm1
chassis_serial_number = 0000000-0000000000
product_serial_number = 1234567890
detector     = /SYS/FM1/ERR
[skipped fruid update]
```

Exit Status

Value	Description
0	Successful completion. All records in the log file were examined successfully.
1	Invalid command-line options were specified.

`fmstat` – Statistical Module Report Generator

The `fmstat` utility can be used by administrators and service personnel to report statistics associated with the Oracle ILOM Fault Manager and its associated set of modules. The Fault Manager runs in the background on each Oracle ILOM system. It receives telemetry information relating to problems detected by the system software, diagnoses these problems, and initiates proactive self-healing activities such as disabling faulty components.

You can use `fmstat` to view statistics for diagnosis engines that are currently participating in fault management.

The `fmstat` utility reports the following statistics for each of the diagnosis engines:

`engine`	The name of the diagnosis engine. The engines execute rules for the fault diagnosis daemon based on ereport input. Oracle ILOM Fault Management engines include: • `repair` - Rule that indicates a fault should be considered repaired if a specified ereport is logged. For example, the fault "fault.chassis.power.inadequate@/sys" would be considered repaired if "ereport.chassis.boot.power-off-requested@/sys" was logged. • `hysteresis` - Rule to diagnose a fault if ereport *A* (initiation) is logged and ereport *B* (cancelation) is not logged within some specified time afterwards. For example, ereport A is "ereport.fan.speed-low-asserted" and ereport B is "ereport.fan.speed-low-deasserted". The time limit between the initiation/cancelation can be no greater than 10 seconds. • `SERD` - Soft Error Rate Discrimination (SERD) is used in tracking multiple occurences of an ereport. If more than *N* ereports show up within time period *T*, the fault is diagnosed. For example, if too many correctable memory error ereports are logged within a specific time frame, a DIMM fault will be diagnosed. • `simple` - Rule to allow one ereport to result in the diagnosis of multiple faults. For example, an ereport for an uncorrectable memory error can be diatnosed to the faults for two DIMMs in a DIMM pair.
`status`	The status of the engine, either uninit, empty, enqueued, busy, or exiting.
`evts_in`	The number of events received by the engine as relevant to a diagnosis.
`evts_out`	The number of events sent by the engine.
`errors`	The number of errors detected by the engine.

Syntax

`fmstat`

Example

```
faultmgmtsp> fmstat
fdd statistics    2011-02-03/19:12:51

engine                status    evts_in  evts_out  errors
repair                empty          8         0       0
hysteresis            empty          0         0       0
SERD                  empty          0         0       0
simple                empty         12         0       0
```

Exit Status

Value	Description
0	Successful completion.
1	An error occurred.

echo – Display Exit Code for Last Command

The echo command is used to display the exit code for the last executed Fault Management command.

Syntax

echo $?

help – Display Command Online Help

The help command is used to display online help for the specified Fault Management command.

Syntax

help

or

command **-h | -help**

or

help *command*

Exit Status

Value	Description
0	Successful completion.
1	An error occurred.

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