Sun™ Integrated Lights Out Manager 2.0 Supplement for Sun SPARC® Enterprise T5440 Server

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Contents

Preface

The *Sun Integrated Lights Out Manager 2.0 Supplement for Sun* SPARC® *Enterprise T5440 Server* contains information about the Integrated Lights Out Manager (ILOM) service processor (SP). The SP enables you to remotely manage and administer your servers. You should be an experienced system administrator with a knowledge of UNIX® commands.

How This Book Is Organized

Chapter 1 introduces the Integrated Lights Out Manager (ILOM).

Chapter 2 describes managing Sun SPARC specific features of the host.

Chapter 3 describes managing Sun SPARC specific features of the SP.

Chapter 4 describes managing Sun SPARC specific features of system devices.

Chapter 5 identifies IPMI sensor data (the `/SYS` namespace).

Chapter 6 lists and describes ALOM CMT compatibility shell equivalents for ILOM commands and properties.

Shell Prompts (R)

TABLE P-1

Shell	Prompt
C shell	*machine-name*%
C shell superuser	*machine-name*#
Bourne shell and Korn shell	$
Bourne shell and Korn shell superuser	#
ILOM service processor	->
ALOM compatibility shell	sc>
OpenBoot PROM firmware	ok

Related Documentation (R)

For more information about how to work with your host server, the following documentation provides information about how to perform certain tasks related to ILOM.

TABLE P-2

Task	Title
Information that is common to all platforms managed by ILOM	Sun Integrated Lights Out Manager 2.0 User's Guide
Performing diagnostic tests	*SunVTS User's Guide* *SunVTS Quick Reference Guide* *SunVTS Test Reference Manual* *Sun Management Center Software User's Guide*
System and network administration	*Solaris System Administrator Guide* *SPARC: Installing Solaris Software*
Using the operating system	*Solaris User's Guide*

Documentation, Support, and Training (R)

TABLE P-3

Function	URL
Documentation	`http://www.sun.com/documentation/`
Support	`http://www.sun.com/support/`
Training	`http://www.sun.com/training/`

Third-Party Web Sites (R)

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CHAPTER 1

ILOM for the SPARC Enterprise T5440 Server

This chapter introduces ILOM for the SPARC Enterprise T5440 server and provides references to more generic ILOM documentation.

Understanding ILOM

Integrated Lights Out Manager (ILOM) is system management firmware that is preinstalled on some SPARC servers. ILOM enables you to actively manage and monitor components installed in your server. ILOM provides a browser-based web interface and a command-line interface, as well as an SNMP and IPMI interfaces. For general information about ILOM, see:

- *Integrated Lights Out Manager 2.0 User's Guide*
- *Addendum to the Integrated Lights Out Manager 2.0 User's Guide*

Platform Specific ILOM Features

ILOM operates on many platforms, supporting features that are common to all platforms. Some ILOM features belong to a subset of platforms but not to all. This document describes features that belong to SPARC Enterprise T5440 server, augmenting the set of features described in the *Integrated Lights Out Manager 2.0 User's Guide*.

ILOM Features Not Supported in SPARC Enterprise Servers

Among the ILOM features supported on other platforms, ILOM does not support the following features on SPARC Enterprise T5440 server:

- ILOM Remote Console via the web interface.

Note – Remote console access is available from the ILOM CLI using the `start /SP/console` command, or through the ALOM compatibility shell using the `sc> console` command.

- Chassis Monitoring Module (CMM) features, such as single sign on

CHAPTER 2

Manage the Host

This section contains information about ILOM features on the SPARC Enterprise T5440 server that augment the array of properties that are common to ILOM on other platforms. In particular, this chapter describes the properties in the `/HOST` namespace. This chapter consists of:

Description	Tasks
Understand new Host reset behavior.	"Reset the Host" on page 4
Manage the Host boot mode.	"Manage the Host's Boot Mode LDoms Configuration Using the CLI" on page 5 "Manage the Host's Boot Mode Script Using the CLI" on page 6 "Change the Host's Boot Mode Behavior at Reset Using the CLI" on page 6 "Display the Host's Boot Mode Expiration Date Using the CLI" on page 7 "Change Boot Mode Configuration Settings Using the Web Interface" on page 7
View Host information and set system policy concerning error conditions.	"Display the Host's MAC Address Using the CLI" on page 9 "Display the Host's OpenBoot Version Using the CLI" on page 9 "Display the Host's POST Version Using the CLI" on page 9 "Specify Host Behavior When the Watchdog Timer Expires Using the CLI" on page 9 "Specify Host Behavior When an Error Is Discovered During Diagnostics Using the CLI" on page 10 "View Host Information Using the Web Interface" on page 10

Description	Tasks
Manage Host diagnostics.	“Change the Diagnostics Mode Using the CLI” on page 12 “Specify Diagnostic Trigger Conditions Using the CLI” on page 12 “Specify the Level of Diagnostics Using the CLI” on page 13 “Choose the Amount of Verbosity in Diagnostic Output Using the CLI” on page 13 “Manage Diagnostics Settings Using the Web Interface” on page 14
Manage system user interactions.	“Enable the System to Send a Break Signal or Force a Core Dump Using the CLI” on page 15 “Display Host Status Information Using the CLI” on page 15
Optimize IO Paths	“IO Path Reconfiguration” on page 16 “Manage IO Path Reconfiguration Settings Using the CLI” on page 17

Reset the Host

Host reset behavior has changed to support the additional functionality of domains. The `reset` command still generates a graceful or forced hardware reset of the host, but now offers additional options to manage a control domain. See the available options for both the ILOM and ALOM compatibility CLIs, in “ILOM and ALOM CMT Command Comparison” on page 44.

Managing Host Boot Mode

Use the boot mode properties to specify how ILOM handles boot.

Boot Mode

Boot mode (`bootmode`) properties enable you to override the default method the server uses when it boots. This ability is useful to override particular OpenBoot™ or LDoms settings, to set up OpenBoot variables using a script, or similar tasks.

For example, you can set the `bootmode state` property to `reset_nvram` then reset the server to its factory default OpenBoot settings.

Service personnel might instruct you to use the `bootmode script` property for problem resolution. The full extent of script capabilities are not documented and exist primarily for debugging.

Because `bootmode` is intended to be used to correct a problem with the OpenBoot or LDoms settings, the `bootmode` takes effect for a single boot only. Additionally, to prevent an administrator from setting a `bootmode state` property and forgetting about it, a `bootmode state` property expires if the host is not reset within 10 minutes of the `bootmode` state property being set.

▼ Manage the Host's Boot Mode LDoms Configuration Using the CLI

- **At the `->` prompt, type:**

```
-> set /HOST/bootmode config=configname
```

where the `config` property takes a *configname* value such as a named logical domain configuration downloaded to the SP using the Logical Domains software.

For example, if you have created a logical domain configuration called `ldm-set1`:

```
-> set /HOST/bootmode config=ldm-set1
```

To return the boot mode `config` to the factory default configuration, specify `factory-default`.

For example:

```
-> set /HOST/bootmode config=factory-default
```

▼ Manage the Host's Boot Mode Script Using the CLI

- **At the `->` prompt, type:**

```
-> set /HOST/bootmode script=value
```

where `script` controls the host server OpenBoot PROM firmware method of booting. It does not affect the current `/HOST/bootmode` setting. *string* can be up to 64 bytes in length. You can specify a `/HOST/bootmode` setting and set the script within the same command.

For example:

```
-> set /HOST/bootmode state=reset_nvram script="setenv diag-switch? true"
```

After the server resets and OpenBoot PROM reads the values stored in the script, it sets the OpenBoot PROM variable `diag-switch?` to the user-requested value of `true`.

Note – If you set `/HOST/bootmode script=""`, ILOM sets the `script` to empty. If you set `/HOST/bootmode config=""`, ILOM sets the `config` to empty.

▼ Change the Host's Boot Mode Behavior at Reset Using the CLI

The /HOST/bootmode state property controls how OpenBoot nonvolatile random access memory (NVRAM) variables are used. Normally the current settings of these variables are retained. Setting `/HOST/bootmode state=reset_nvram` changes the OpenBoot NVRAM variables to their default settings at the next reset.

- **At the `->` prompt, type:**

```
-> set /HOST/bootmode state=value
```

where *value* is one of the following:

- `normal` – At next reset, retains current NVRAM variable settings.
- `reset_nvram` – At next reset, returns OpenBoot variables to default settings.

Note – The `state=reset_nvram` command will return to normal after the next server reset or 10 minutes (see `expires` property in "Display the Host's Boot Mode Expiration Date Using the CLI" on page 7). `config` and `script` properties do not expire and will be cleared upon the next server reset or manually by setting *string* to `""`.

▼ Display the Host's Boot Mode Expiration Date Using the CLI

- **At the `->` prompt, type:**

```
-> show /HOST/bootmode expires
     Properties:
         expires = Thu Oct 18 18:24:16 2007
```

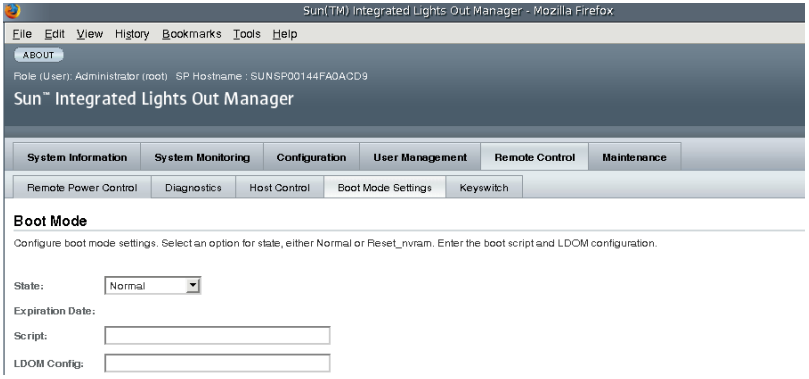
where `expires` is the date and time when the current bootmode will expire.

▼ Change Boot Mode Configuration Settings Using the Web Interface

ILOM provides several ways to configure the server's firmware environment. There are four aspects to configuring the boot mode:

- State
- Expiration Date
- Script
- LDom Configuration

1. **Log in to the ILOM web interface as Administrator (`root`) to open the web interface.**
2. **Select Remote Control -> Boot Mode Settings.**



3. **Select the Boot Mode State, if desired.**
4. **View the Expiration Date.**
5. **Specify a boot script, if desired.**
6. **Specify an LDoms configuration file, if desired.**
7. **Click Save.**

Viewing Host Information and Setting System Policy Concerning Error Conditions

Use the host information properties to view system configuration and firmware version information.

- "Display the Host's MAC Address Using the CLI" on page 9
- "Display the Host's OpenBoot Version Using the CLI" on page 9
- "Display the Host's POST Version Using the CLI" on page 9
- "Specify Host Behavior When the Watchdog Timer Expires Using the CLI" on page 9
- "Specify Host Behavior When an Error Is Discovered During Diagnostics Using the CLI" on page 10
- "View Host Information Using the Web Interface" on page 10

▼ Display the Host's MAC Address Using the CLI

The /HOST macaddress property is automatically configured by the system software, so you cannot set or change the property. The value is read and determined from the server's removable system configuration card (SCC PROM) and then stored as a property in ILOM.

The /HOST macaddress is the MAC address for the net0 port. The MAC addresses for each additional port increments from the /HOST macaddress. For example, net1 is equal to the value of /HOST macaddress plus one (1).

- **To view the current setting for this property, type:**

```
-> show /HOST macaddress
```

▼ Display the Host's OpenBoot Version Using the CLI

The /HOST obp_version property displays information about the version of OpenBoot on the host.

- **To view the current setting for this property, type:**

```
-> show /HOST obp_version
```

▼ Display the Host's POST Version Using the CLI

The /HOST post_version property displays information about the version of POST on the host.

- **To view the current setting for this property, type:**

```
-> show /HOST post_version
```

▼ Specify Host Behavior When the Watchdog Timer Expires Using the CLI

Use the /HOST autorestart property to specify how ILOM should handle expiration of the Solaris watchdog timer.

- **To set this property, type:**

```
-> set /HOST autorestart=value
```

where values can be

- `none` – ILOM takes no action other than to issue a warning.
- `reset` – ILOM attempts to reset the system when the Solaris watchdog timer expires (the default).
- `dumpcore` – ILOM attempts to force a core dump of the OS when the watchdog timer expires.

▼ Specify Host Behavior When an Error Is Discovered During Diagnostics Using the CLI

Use the `/HOST autorunonerror` property to specify whether the host should continue to boot after system diagnostics have discovered an error.

- **To set this property, type:**

```
-> set /HOST autorunonerror=value
```

where *value* is one of the following:

- `false` – The system stops booting after an error has been discovered (the default).
- `true` – The system attempts to continue booting after an error has been discovered.

▼ View Host Information Using the Web Interface

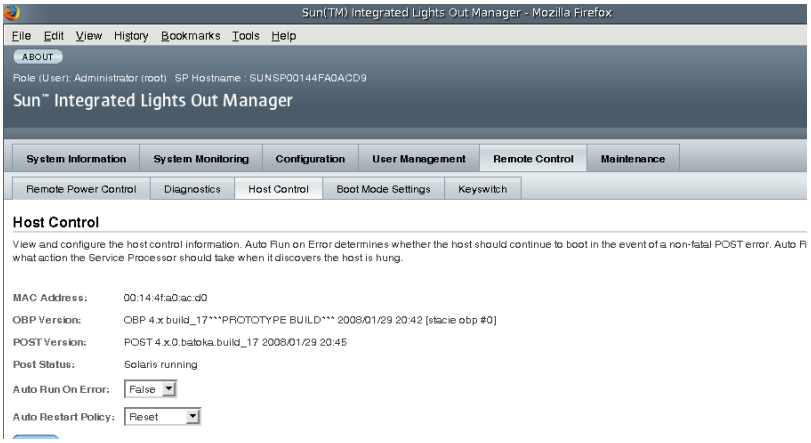
This procedure describes how to view and configure several kinds of host information.

ILOM provides several ways to view or configure host control features. There are six aspects to host control:

- MAC address
- OpenBoot version
- POST version
- HOST status
- Auto Run On Error

- Auto Restart Policy

1. **Log in to the ILOM web interface as Administrator (`root`) to open the web interface.**
2. **Select Remote Control -> Host Control.**



3. **View the MAC address.**
4. **View the OpenBoot version.**
5. **View the POST version.**
6. **Select a value for Auto Run On Error, if desired.**
7. **Select a value for Auto Restart Policy, if desired.**
8. **Click on Save.**

Managing Host Diagnostics

Use the diagnostic control properties to specify how ILOM controls the diagnostics of the host server.

ILOM uses the following diagnostic system interface property:

- "Change the Diagnostics Mode Using the CLI" on page 12
- "Specify Diagnostic Trigger Conditions Using the CLI" on page 12
- "Specify the Level of Diagnostics Using the CLI" on page 13

- "Choose the Amount of Verbosity in Diagnostic Output Using the CLI" on page 13
- "Manage Diagnostics Settings Using the Web Interface" on page 14

▼ Change the Diagnostics Mode Using the CLI

Use the /HOST/diag mode property to control whether diagnostics are enabled and to specify which diagnostic mode is enabled.

- **At the -> prompt, type:**

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

where *value* is one of the following:

- `off` – Do not run any diagnostics.
- `normal` – Run diagnostics (the default value).
- `service` – Run service-technician diagnostics, equivalent to using the preset values of `/HOST/diag trigger=all-resets`, `/HOST/diag verbosity`, and `/HOST/diag level=max`. Setting `/HOST/diag mode=service` has the same effect as issuing the set `/SYS keyswitch_state=diag` command.

▼ Specify Diagnostic Trigger Conditions Using the CLI

Use the /HOST/diag trigger property to control the conditions under which POST runs if diagnostics are enabled.

- **At the -> prompt, type:**

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

where *value* is one (or a combination, supplied within quote marks) of the following:

- `user-reset` – Run diagnostics when the system is reset.
- `error-reset` – Run diagnostics when the system takes a fatal error that requires the system to reset itself to recover.
- `power-on-reset` – Run diagnostics when the system is powered on.
- `all-resets` – Run diagnostics at any server reset.

- none – Skip diagnostics.

For example:

```
-> set /HOST/diag trigger="user-reset power-on-reset"
-> show /HOST/diag trigger
user-reset power-on-reset
```

The default value is the combination of power-on-reset error-reset.

▼ Specify the Level of Diagnostics Using the CLI

Use the /HOST/diag level property to specify the level of diagnostic testing to be executed when diagnostics are enabled.

- **At the -> prompt, type:**

```
-> set /HOST/diag 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).

▼ Choose the Amount of Verbosity in Diagnostic Output Using the CLI

Use the /HOST/diag verbosity property to specify the verbosity level of the output from POST diagnostics, if diagnostics are enabled.

- **At the -> prompt, type:**

```
-> set /HOST/diag 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).

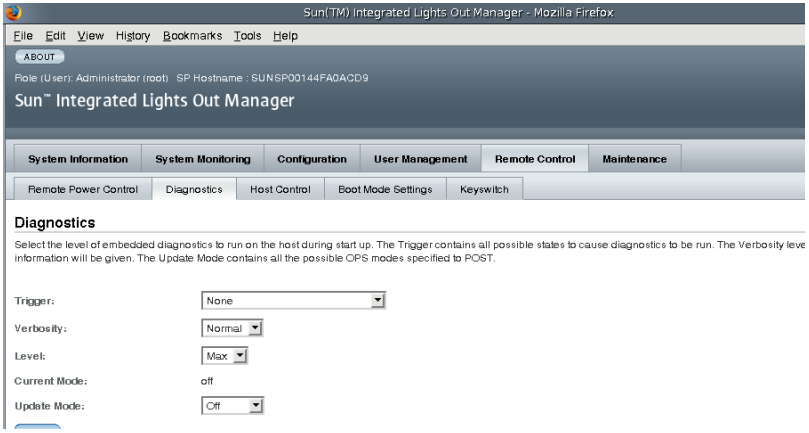
- `max` – Diagnostics print full output on the system console, including the name and results of each test being run.
- `debug` – Diagnostics print extensive debugging output on the system console, including devices being tested and debug output of each test.

▼ Manage Diagnostics Settings Using the Web Interface

ILOM provides several ways to view or configure diagnostics. There are four aspects to host control:

- Trigger
- Verbosity
- Level
- Mode

1. **Log in to the ILOM web interface as Administrator (`root`) to open the web interface.**
2. **Select Remote Control -> Diagnostics.**



3. **Select a value for Trigger, if desired.**
4. **Select a value for Verbosity, if desired.**
5. **Select a value for Level, if desired.**
6. **View the Current Mode.**
7. **Select a value for Update Mode, if desired.**

Managing System User Interactions

The system user properties enable you to customize the way ILOM identifies and interacts with the host server.

▼ Enable the System to Send a Break Signal or Force a Core Dump Using the CLI

Use the `set /HOST send_break_action` command to bring the server to a menu from which you can choose to go to the OpenBoot PROM prompt (`ok`). If you have configured the `kmdb` debugger, then specifying the `send_break_action=break` brings the server in to debug mode. Specify `send_break_action=dumpcore` to force a core dump.

- **At the `->` prompt, type:**

```
-> set /HOST send_break_action=value
```

where *value* is one of the following:

- `break` – Sends a break to the host.
- `dumpcore` – Forces a panic core dump of the managed system OS (not supported by all OS versions).

▼ Display Host Status Information Using the CLI

Use the `show /HOST status` command to display information about the host server's status.

- **At the -> prompt, type:**

```
-> show /HOST status
```

The command returns information similar to the following:

```
-> show /HOST status
    Properties:
        status = Running

    Commands:
        show ->
```

Optimizing IO Paths

Optimizing IO paths enables you to maximize system performance based on your CMP configuration.

IO Path Reconfiguration

The SPARC Enterprise T5440 includes an `ioreconfigure` parameter that enables you to control how often the SP checks the system hardware and, if necessary, reconfigures the IO paths to optimize system performance based on your CMP configuration.

The `ioreconfigure` parameter is set through ILOM and has three values:

Parameter Value	Description	Notes
`true`	The SP checks and reconfigures, if necessary, the IO paths each time the host is powered on.	
`false`	The SP never reconfigures the IO paths.	After initial host power on, this is the default setting.
`nextboot`	The SP reconfigures the IO paths on the next host power on, then automatically resets this parameter to `false`.	Systems ship from the factory will this setting. It is also useful when adding or replacing CMP modules.

Note – Reconfiguring the IO paths will change the PCIe addresses and external addresses formerly associated with a CMP module. For information on managing these addresses, see the *SPARC Enterprise T5440 Server Product Notes.*

For more information, check the server product notes, and see:

"Manage IO Path Reconfiguration Settings Using the CLI" on page 17.

▼ Manage IO Path Reconfiguration Settings Using the CLI

Use the `set /HOST ioreconfigure` command to control the conditions under which the SP reconfigures and optimizes the IO paths.

- **At the `->` prompt, type:**

```
-> set /HOST/ioreconfigure=value
```

where *value* is one of the following:

- `true` – The SP checks and reconfigures, if necessary, the IO paths each time the host is powered on.
- `false` –The SP never reconfigures the IO paths.
- `nextboot` – The SP reconfigures the IP paths on the next host power on, then automatically resets this parameter to `false`

Note – Reconfiguring the IO paths will change the PCIe addresses and external addresses formerly associated with a CMP module. For information on managing these addresses, see the *SPARC Enterprise T5440 Server Product Notes.*

CHAPTER 3

Manage the Service Processor

This section contains information on ILOM properties on the SPARC Enterprise T5440 server that augment the array of properties that are common to ILOM on other platforms. In particular, this chapter covers properties in the `/SP` namespace.

Description	Task
Store customer information.	"Change Customer FRU Data Using the CLI" on page 20 "Change System Identification Information Using the CLI" on page 21 "Change Customer Identification Information Using the Web Interface" on page 21
Change service processor setting to the defaults.	"Reset the Service Processor Settings to Factory Defaults Using the CLI" on page 22 "Reset the Service Processor Settings to Factory Defaults Using the Web Interface" on page 22
Modify console escape characters.	"Change Console Escape Characters Using the CLI" on page 23
Change configuration policy settings.	"Specify Backup of the User Database Using the CLI" on page 24 "Specify Host Power-On Policy Using the CLI" on page 24 "Disable or Re-Enable Power-On Delay Using the CLI" on page 25 "Manage Configuration Policy Settings Using the Web Interface" on page 26

Description	Task
Display power management metrics.	"View Power Management Properties Using the CLI" on page 27 "View the Total Power Consumed By the System" on page 28 "View Power Management Properties Using the Web Interface" on page 28
Manage network access.	"Disable or Re-Enable Network Access to the SP Using the CLI" on page 29 "Display the DHCP Server's IP Address" on page 30
Manage SSH server settings.	"Change the Type of SSH Keys Using the CLI" on page 31 "Generate a New Set of SSH Keys Using the CLI" on page 31 "Restart the SSH Server Using the CLI" on page 31 "Enable or Disable the SSH Service Using the CLI" on page 31 "Manage SSH Server Settings Using the Web Interface" on page 32

Storing Customer Information

This section describes ILOM features that enable you to store information (for purposes such as inventory control or site resource management) on the SP and FRU PROMs.

- "Change Customer FRU Data Using the CLI" on page 20
- "Change System Identification Information Using the CLI" on page 21
- "Change System Identification Information Using the CLI" on page 21

▼ Change Customer FRU Data Using the CLI

Use the `/SP` customer_frudata property to store information in all FRU PROMs.

- **At the `->` prompt, type:**

```
-> set /SP customer_frudata="data"
```

Note – The data string *("data")* must be enclosed in quote marks.

▼ Change System Identification Information Using the CLI

Use the /SP system_identifier property to store customer identification information.

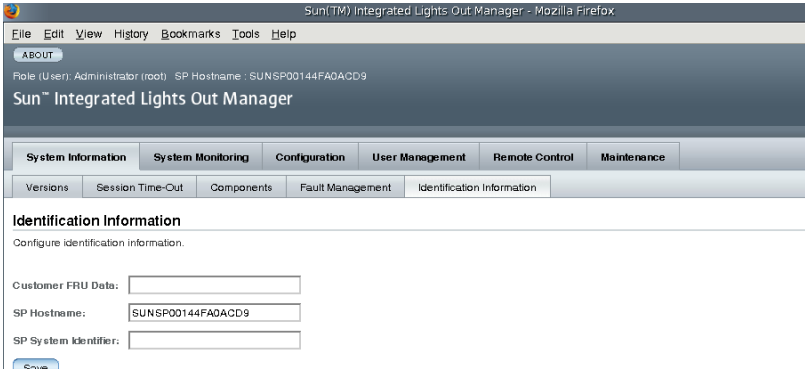
- **At the -> prompt, type:**

```
-> set /SP system_identifier="data"
```

▼ Change Customer Identification Information Using the Web Interface

ILOM provides features that enable you to store information on FRUs and the SP.

1. **Log in to the ILOM web interface as Administrator (`root`) to open the web interface.**
2. **Select System Information --> Identification Information.**



3. **Edit the Customer FRU data field, if desired.**
4. **Edit the SP Hostname, if desired.**
5. **Edit the SP System Identifier field, if desired.**
6. **Click Save.**

Changing Service Processor Settings to Factory Defaults

This section describes how to set service processor settings back to the factory defaults.

▼ Reset the Service Processor Settings to Factory Defaults Using the CLI

Use the `set /SP reset_to_defaults` command to set all ILOM configuration properties back to their factory default values. The `all` option sets the ILOM configuration and all user information back to the factory default values.

1. **At the `->` prompt, type:**

```
-> set /SP reset_to_defaults=all
```

   where for `reset_to_defaults` can be set to one of the following:

   - `none` – Make no changes.
   - `all` – At the next SP reset, clear the user database and change all configuration properties to their defaults.

2. **Reset the service processor so that the new property value can take effect.**

▼ Reset the Service Processor Settings to Factory Defaults Using the Web Interface

1. **Log in to the ILOM web interface as Administrator (`root`) to open the web interface.**

2. **Select Maintenance --> Configuration Management.**

3. **Select a Reset Defaults value.**

4. **Click** `Reset Defaults`**.**

Modifying Console Escape Characters

This section describes creating new character combinations for use as escape characters.

▼ Change Console Escape Characters Using the CLI

Use the `/SP/console escapechars` property to change the escape character sequence to switch from a system console session back to ILOM.

- **At the** `->` **prompt, type:**

```
-> set /SP/console escapechars=xx
```

The sequence is limited to two characters. The default value is `#.` (Hash-Period). The sequence can be customized.

where *xx* are any printable characters.

Note – Changing the escape character does not take effect in a currently active console session.

Changing Configuration Policy Settings

This section describes managing configuration system policies using ILOM.

▼ Specify Backup of the User Database Using the CLI

The `/SP/policy BACKUP_USER_DATA` property specifies whether the local user database on ILOM (that is, user, password, and permission information) should be backed up. When this property is set to `enable`, this data is backed up on the removable system configuration card (SCC PROM) on the system.

- **At the `->` prompt, type:**

```
-> set /SP/policy BACKUP_USER_DATA=value
```

where the *value* is one of the following:

- `enabled` – Backs up the user database to the SCC (This is the default value).
- `disabled` – No backup.
- For example, if you want the local user database on ILOM to be backed up, type:

```
-> set /SP/policy BACKUP_USER_DATA=enabled
```

▼ Specify Host Power-On Policy Using the CLI

Use the `/SP/policy HOST_LAST_POWER_STATE` property to control the behavior of the server after an unexpected power outage. When external power is restored, the ILOM service processor starts to run automatically. Normally, the host power is not turned on until you use ILOM to turn it on.

ILOM records the current power state of the server in non-volatile storage. If the HOST_LAST_POWER_STATE policy is enabled, ILOM can restore the host to the previous power state. This policy is useful in the event of a power failure, or if you physically move the server to a different location.

For example, if the host server is running when power is lost and the /SP/policy HOST_LAST_POWER_STATE property is set to disabled, the host server remains off when power is restored. If the /SP/policy HOST_LAST_POWER_STATE property is set to enabled, the host server restarts when the power is restored.

1. **At the -> prompt, type:**

```
-> set /SP/policy HOST_LAST_POWER_STATE=enabled
```

   where the value for this property is one of the following:

   - enabled – When power is restored, returns the server to the state it was in before the power was removed.
   - disabled – Keeps the server off when power is applied (the default).

   If you enable HOST_LAST_POWER_STATE, you should also configure /SP/policy HOST_POWER_ON_DELAY as well. For further information, see "Disable or Re-Enable Power-On Delay Using the CLI" on page 25

   Use /SP/policy HOST_AUTO_POWER_ON to power on the host automatically when the service processor has been booted. If this policy is set to enabled, the service processor sets HOST_LAST_POWER_STATE to disabled.

2. **At the -> prompt, type:**

```
-> set /SP/policy HOST_AUTO_POWER_ON=enabled
```

   where the value for this property is one of the following:

   - enabled – When power is applied, automatically powers on the host when the SP has been booted.
   - disabled – Keeps the host power off when power is applied (the default).

▼ Disable or Re-Enable Power-On Delay Using the CLI

Use the /SP/policy HOST_POWER_ON_DELAY property to cause the server to wait for a short time before powering on automatically. The delay is a random interval of one to five seconds. Delaying the server poweron helps minimize current surges on the main power source. This poweron delay is important when multiple servers in racks power on after a power outage.

This property takes effect only if `/SP/policy HOST_LAST_POWER_STATE` is set to `enabled`.

- **At the `->` prompt, type:**

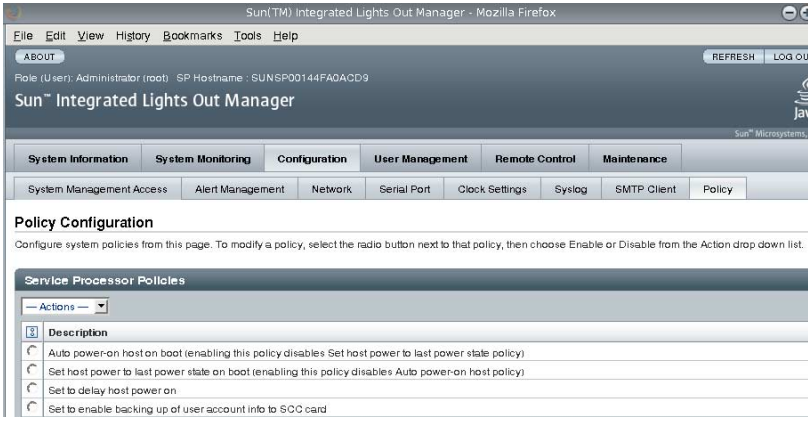
```
-> set /SP/policy HOST_POWER_ON_DELAY=value
```

where *value* can be

- `enabled`
- `disabled` (the default)

▼ Manage Configuration Policy Settings Using the Web Interface

1. **Log in to the ILOM web interface as Administrator (`root`) to open the web interface.**
2. **Select Configuration --> Policy.**



3. **Click the Policy radio button of the policy you want to change.**
4. **Select an Action value to apply the Action (enable or disable) you have chosen.**

Displaying Power Management Metrics

This section describes using ILOM to view the server's power metrics.

▼ View Power Management Properties Using the CLI

- **At the -> prompt, type:**

```
-> show /SP/powermgmt
```

For example,

```
-> show /SP/powermgmt

/SP/powermgmt
   Targets:

   Properties:
       actual_power = 534
       permitted_power = 2626
       available_power = 2626
       control = local
       policy = performance
       regulated_budget = (none)
       elastic_budget = (none)

   Commands:
       cd
       set
       show
```

where

- `actual_power` displays the input power (in watts) consumed by all power supplies in the system.
- `available_power` displays the input power capacity (in watts) that is available to system components.
- `permitted_power` displays the maximum power consumption (in watts) expected.
- `control` option not currently supported on this platform.
- `policy` option not currently supported on this platform.
- `regulated_budget` option not currently supported on this platform.
- `elastic_budget` option not currently supported on this platform.

▼ View the Total Power Consumed By the System

The value of `/SYS/VPS` is equivalent to the value of `/SP/powermgmt actual_power`.

- **At the `->` prompt, type**

```
-> show /SYS/VPS
```

For example,

```
-> show /SYS/VPS

 /SYS/VPS
    Targets:

    Properties:
        type = Power Unit
        class = Threshold Sensor
        value = 528.031 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

    Commands:
        cd
        show
```

▼ View Power Management Properties Using the Web Interface

1. **Log in to the ILOM web interface as Administrator (`root`) to open the web interface.**
2. **Select System Monitoring -> Power Management.**

3. **View the Actual Power consumption.**
4. **View the Permitted Power consumption.**
5. **View the Available Power.**

Managing Network Access

This section describes managing network access to the SP using ILOM.

▼ Disable or Re-Enable Network Access to the SP Using the CLI

Use the `/SP/network state` property to enable or disable the service processor's network interface.

- **At the `->` prompt, type:**

```
-> set /SP/network state=value
```

where *value* can be

- `enabled` (the default)
- `disabled`

▼ Display the DHCP Server's IP Address

To display the IP address of the DHCP server that provided the dynamic IP address requested by the service processor, view the `dhcp_server_ip` property.

- **To see the** `dhcp_server_ip` **property, type** `show /SP/network`

  For example,

```
-> show /SP/network

 /SP/network  /SP/network
     Targets:

     Properties:
         commitpending = (Cannot show property)
         dhcp_server_ip = 10.8.31.5
         ipaddress = 10.8.31.188
         ipdiscovery = dhcp
         ipgateway = 10.8.31.248
         ipnetmask = 255.255.252.0
         macaddress = 00:14:4F:7E:83:4F
         pendingipaddress = 10.8.31.188
         pendingipdiscovery = dhcp
         pendingipgateway = 10.8.31.248
         pendingipnetmask = 255.255.252.0
         state = enabled

     Commands:
         cd
         set
         show
```

Managing SSH Server Settings

▼ Change the Type of SSH Keys Using the CLI

Use the `set /SP/services/ssh generate_new_key_type` command to change the type of Secure Shell (SSH) host keys generated on your server. After changing the type, you must use the `set /SP/services/ssh generate_new_key_action` command to generate a new set of keys of the new type.

- **At the `->` prompt, type:**

```
-> set /SP/services/ssh generate_new_key_type=value
```

where *value* can be `rsa` or `dsa`.

▼ Generate a New Set of SSH Keys Using the CLI

Use the `set /SP/services/ssh generate_new_key_action` command to generate a new set of Secure Shell (SSH) host keys.

- **At the `->` prompt, type:**

```
-> set /SP/services/ssh generate_new_key_action=true
```

▼ Restart the SSH Server Using the CLI

Use the `set /SP/services/ssh` restart_sshd_action command to restart the SSH server after you have generated new host keys using the `set /SP/services/ssh generate_new_key_action` command. This action reloads the keys in to the server's dedicated data structure in memory.

- **At the `->` prompt, type:**

```
-> set /SP/services/ssh restart_sshd_action=true
```

▼ Enable or Disable the SSH Service Using the CLI

Use the `/SP/services/ssh` state property with the `set` command to enable or disable the SSH service. If the SSH service has been disabled, you can re-enable it through the Serial Management (SER MGT) port or the ILOM web interface.

- **At the -> prompt, type:**

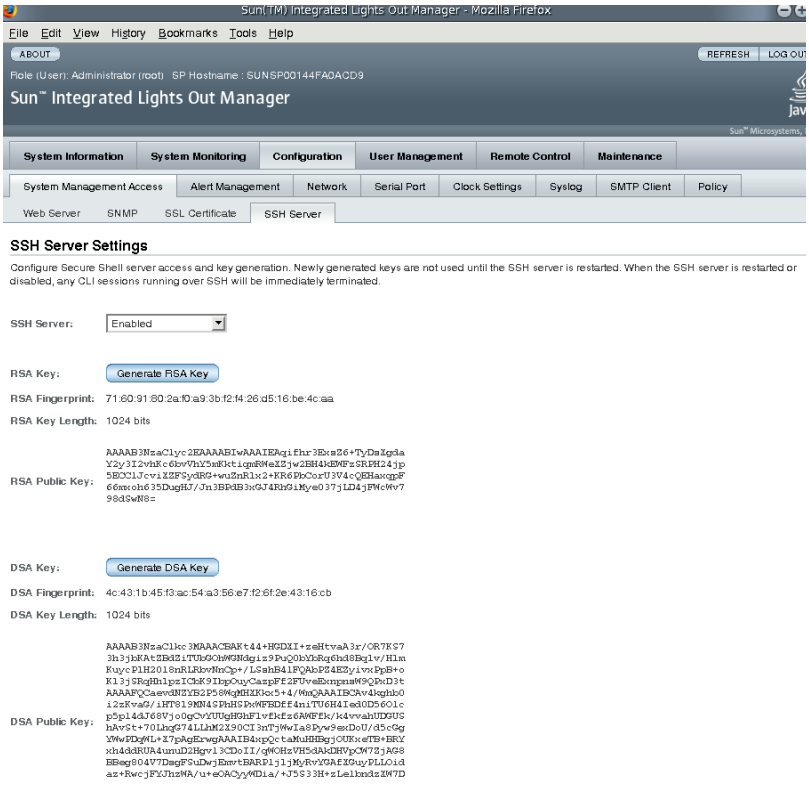
```
-> set /SP/services/ssh state=value
```

where *value* is one of the following:

- `enabled` (the default)
- `disabled`

▼ Manage SSH Server Settings Using the Web Interface

1. **Log in to the ILOM web interface as Administrator (`root`) to open the web interface.**
2. **Select Configuration --> SSH Server Settings.**



3. **Select an action from the SSH Server pulldown menu:**

- Enable the SSH server
- Disable the SSH server
- Restart the SSH server

4. **Click Generate RSA Key or Click Generate DSA Key to generate a new key type and a new key.**

   If you have generated a new key, you must restart the SSH server for the new key to take effect.

Note – When the SSH server is restarted or disabled, any CLI sessions running over SSH will be terminated immediately.

CHAPTER 4

Managing Virtual Keyswitch Settings

This chapter contains information on using the SPARC Enterprise T5440 virtual keyswitch, useful for managing devices.

▼ Control the Virtual Keyswitch Using the CLI

Use the /SYS `setkeyswitch_state` property to control the position of the virtual keyswitch.

- **At the `->` prompt, type:**

```
-> set /SYS keyswitch_state=value
```

where *value* is one of the following:

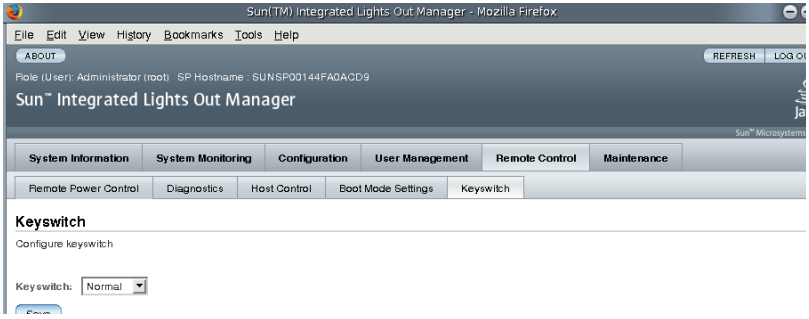
- `normal` – The system can power itself on and start the boot process (the default).
- `standby` – Powers off the `HOST`, cannot power itself on.
- `diag` – The system can power itself on using preset values of diagnostic properties (`/HOST/diag level=max`, `/HOST/diag mode=max`, `/HOST/diag verbosity=max`) to provide thorough fault coverage. This option overrides the values of diagnostic properties that you might have set.

- `locked` – The system can power itself on, however you are prohibited from updating any of the flash devices or setting `/HOST send_break_action`.

▼ Control the Virtual Keyswitch Using the Web Interface

You can use the web interface to control the virtual keyswitch position of the system.

1. **Log in to the ILOM web interface as Administrator (`root`) to open the web interface.**
2. **Select Remote Control --> Keyswitch.**



3. **Select the Keyswitch state value.**
4. **Click Save.**

CHAPTER 5

IPMI Sensor Reference

Your server includes a number of IPMI-compliant sensors and indicators. Sensors measure voltages, temperature ranges, and detection of when components are installed and removed. Indicators, such as Light Emitting Diodes (LEDs) notify you of important server conditions, such as when service is required.

This appendix contains the following topics:

Sensors on SPARC Enterprise T5440 Server

TABLE 5-1 Temperature Sensors

Path	Description
/SYS/MB/T_*	Motherboard
/SYS/MB/DVRM_*/T_*	Motherboard Voltage Regulator
/SYS/MB/CPU*n*/T_*	CPU Board (0-3)
/SYS/MB/CPU*n*/DVRM_*/T_*	CPU Board (0-3) Voltage Regulator
/SYS/MB/MEM*n*/DVRM_*/T_*	Memory Board (0-3) Voltage Regulator

TABLE 5-2 Voltage Sensors

Path	Description
/SYS/MB/V_*	Motherboard
/SYS/MB/DVRM_*/V_*	Motherboard Voltage Regulator
/SYS/MB/CPU*n*/V_*	CPU Board (0-3)
/SYS/MB/CPU*n*/DVRM_*/V_*	CPU Board (0-3) Voltage Regulator
/SYS/MB/MEM*n*/DVRM_*/V_*	Memory Board (0-3) Voltage Regulator
/SYS/MB/SP/V_*	Service Processor

TABLE 5-3 Load (Current) Sensors

Path	Description
/SYS/PS*n*/I_*	Power Supply (0-3)
/SYS/MB/CPU*n*/DVRM_*/I_*	CPU Board (0-3) Voltage Regulator

TABLE 5-4 Power Supply Status Sensors

Path	Description
/SYS/PS*n*/*_POK	Power Supply (0-3) Power OK
/SYS/PS*n*/*_FAULT	Power Supply (0-3) Fault

TABLE 5-5 Fan Tachometer Sensors

Path	Description
/SYS/MB/FT*n*/TACH	Fan Tachometer (0-3)

Indicators on the SPARC Enterprise T5440 Server

TABLE 5-6 Indicators on the SPARC Enterprise T5440 Server

Name	Path	Description
System Level Indicators		
LOCATE	/SYS/LOCATE	Locate indicator
ACT	/SYS/ACT	System Power Activity indicator
SERVICE	/SYS/SERVICE	Service indicator
Individual Component Indicators		
PS_FAULT	/SYS/PS_FAULT	Power Supply Fault indicator
TEMP_FAULT	/SYS/TEMP_FAULT	Temperature Fault indicator
FAN_FAULT	/SYS/FAN_FAULT	Fan Fault indicator
HDD*n*/FAULT	/SYS/HDD*n*/FAULT	Hard Disk (0-3) Fault indicator
HDD*n*/OK2RM	/SYS/HDD*n*/OK2RM	Hard Disk (0-3) Okay to Remove indicator
FT*n*/FAULT	/SYS/MB/FT*n*/FAULT	Fan Module Fault indicator
CPU*n*/FAULT	/SYS/MB/CPU*n*/FAULT	CPU Board Fault indicator

TABLE 5-6 Indicators on the SPARC Enterprise T5440 Server *(Continued) (Continued)*

Name	Path	Description
MEM*n*/FAULT	/SYS/MB/MEM*n*/FAULT	Memory Board Fault indicator
/CPU*n*/CMP*n*/BR*n*/CH*n*/D0	/SYS/MB/CPU*n*/CMP*n*/BR*n*/CH*n*/D0	CPU Board DIMM Fault indicator
/MEM*n*/CMP*n*/BR*n*/CH*n*/D*n*	/SYS/MB/MEM*n*/CMP*n*/BR*n*/CH*n*/D*n*	Memory Board DIMM Fault indicator

CHAPTER 6

ALOM CMT Compatibility Shell

ILOM supports some of the features of the ALOM CMT command-line interface by means of a compatibility shell. There are significant differences between ILOM and ALOM CMT. This appendix describes those differences. This appendix includes the following topics:

Commit ILOM Network Configuration Properties

When changing the values of some ALOM CMT variables (such as network and serial port configuration variables), it was necessary to reset the system controller before the changes took effect. By comparison, in ILOM it is not necessary to reset the service processor after changing the values of comparable properties. In ILOM, if you change the value of the property and then reset the SP, you will lose the new property setting.

Instead, change the network configuration property then *commit* it using setsc netsc_commit in the ALOM compatibility CLI or `set /SP/network commitpending` using the ILOM CLI. To change the serial port configuration property, first set the desired property and then commit it using setsc ser_commit in the ALOM compatibility CLI or `set /SP/serial/external commitpending` using the ILOM CLI.

For example, set a static IP address using the ALOM compatibility CLI:

```
sc> setsc netsc_ipaddr xxx.xxx.xxx.xxx
sc> setsc netsc_commit true
```

To set the same property using the ILOM CLI:

```
-> set /SP/network pendingipaddress=xxx.xxx.xxx.xxx
Set 'pendingipaddress' to 'xxx.xxx.xxx.xxx'
-> set /SP/network commitpending=true
Set 'commitpending' to 'true'
->
```

In summary, you must *commit* the changes before they can take effect.

TABLE 6-1 ALOM CMT `commit` Variables and Comparable ILOM Properties

ALOM CMT Variable	Comparable ILOM Property
netsc_commit	/SP/network commitpending
ser_commit	/SP/serial/external commitpending

▼ Create an ALOM CMT Compatibility Shell

Your server is configured to operate under an ILOM shell, by default. You can create an ALOM compatibility shell if you prefer to use commands that resemble ALOM CMT commands to administer your server.

1. **Log onto the service processor with the username:** `root`**.**

   When powered on, the SP boots to the ILOM login prompt. The factory default password is `changeme`.

```
XXXXXXXXXXXXXXXXXX login: root
Password:
Waiting for daemons to initialize...
Daemons ready

Integrated Lights Out Manager

Version 2.0.0.0
```

```
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Use is subject to license terms.

Warning: password is set to factory default.
```

2. **Create a user named** `admin`, **and set the** `admin` **account role to** `Administrator` **and the CLI mode to** `alom`**.**

```
-> create /SP/users/admin
Creating user...
Enter new password: ********
Enter new password again: ********
Created /SP/users/admin

-> set /SP/users/admin role=Administrator
Set 'role' to 'Administrator'

->set /SP/users/admin cli_mode=alom
Set 'cli_mode' to 'alom'
```

Note – The asterisks in the example will not appear when you enter your password.

You can combine the `create` and `set` commands on a single line:

```
-> create /SP/users/admin role=Administrator cli_mode=alom
Creating user...
Enter new password: ********
Enter new password again: ********
Created /SP/users/admin
```

3. **Log out of the** `root` **account after you have finished creating the** `admin` **account.**

```
-> exit
```

4. **Log in to the ALOM CLI shell (indicated by the `sc>` prompt) from the ILOM login prompt,**

```
XXXXXXXXXXXXXXXXX login: admin
Password:
Waiting for daemons to initialize...

Daemons ready

Integrated Lights Out Manager

Version 2.0.0.0

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sc>
```

In the ALOM CMT compatibility shell (with a few exceptions) you can use commands that resemble the commands of ALOM CMT. Remember that the ALOM CMT compatibility shell is an ILOM interface. The comparisons between the ILOM CLI and the ALOM CMT compatibility CLI are described in "ILOM and ALOM CMT Command Comparison" on page 44.

ILOM and ALOM CMT Command Comparison

The following table provides a command-by-command comparison between the command sets of ALOM CMT and the default ILOM CLI command set. Only the supported ALOM CMT command options are listed in the tables below. Where there are ALOM CMT command-line arguments that have no corresponding ILOM properties, those ALOM CMT arguments have been omitted. The command set of the ALOM compatibility shell provides a close approximation of the equivalent commands and arguments (where supported) in ALOM CMT.

Note – By default, when displaying information ALOM CMT commands limit their output to a terse format, offering more verbose output if a `-v` flag is supplied with the command. ILOM's `show` commands do not have a terse output format. They always provide verbose output.

TABLE 6-2 ALOM CMT Shell Configuration Commands

ALOM CMT Command	Summary	Comparable ILOM Command
`password`	Changes the login password of the current user.	`set /SP/users/username password`
`restartssh`	Restarts the SSH server so that new host keys generated by the `ssh-keygen` command are reloaded.	`set /SP/services/ssh restart_sshd_action=true`
`setdate` [[*mmdd*]*HHMM* | *mmddHHMM*[*cc*]*yy*][.*SS*]	Sets ALOM CMT date and time.	`set /SP/clock datetime=`*value*
`setdefaults`	Resets all ALOM CMT configuration parameters to their default values. The `-a` option resets the user information to the factory default (one `admin` account only).	`set /SP reset_to_defaults=`*configuration*
`setdefaults`		`set /SP reset_to_defaults=all`
`setkeyswitch [normal|stby|diag|locked]`	Sets the status of the virtual keyswitch. Setting the virtual keyswitch to standby (`stby`) powers off the server. Before powering off the host server, ALOM CMT asks for a confirmation.	`set /SYS keyswitch_state=`*value*
`setsc` [*param*] [*value*]	Sets the specified ALOM CMT parameter to the assigned value.	`set` *target property=value*
`setupsc`	Runs the interactive configuration script. This script configures the ALOM CMT configuration variables.	No equivalent in ILOM
`showplatform [-v]`	Displays information about the host system's hardware configuration, and whether the hardware is providing service. The `-v` option displays verbose information about the displayed components.	`show /HOST`
`showfru`	Displays information about the field-replaceable units (FRUs) in a host server.	No equivalent in ILOM

TABLE 6-2 ALOM CMT Shell Configuration Commands *(Continued)*

ALOM CMT Command	Summary	Comparable ILOM Command
`showusers`	Displays a list of users currently logged in to ALOM CMT. The display for this command has a similar format to that of the UNIX command `who`. The `-g` option pauses the display after the number of lines you specify for *lines*.	`show /SP/sessions`
`showusers -g` *lines*		No equivalent in ILOM
`showhost`	Displays version information for host-side components. The *version* option displays the same information as the `showhost` command with no option.	`show /HOST`
`showhost` *version*		
`showkeyswitch`	Displays status of virtual keyswitch.	`show /SYS keyswitch_state`
`showsc` [*param*]	Displays the current non-volatile random access memory (NVRAM) configuration parameters.	`show` *target property*
`showdate`	Displays the ALOM CMT date. ALOM CMT time is expressed in Coordinated Universal Time (UTC) rather than local time. The Solaris OS and ALOM CMT time are not synchronized.	`show /SP/clock datetime`
`ssh-keygen -l`	Generates Secure Shell (SSH) host keys and displays the host key fingerprint on the SC.	`show /SP/services/ssh/keys rsa|dsa`
`ssh-keygen -r`		`set /SP/services/ssh generate_new_key_action= true`
`ssh-keygen -t {rsa|dsa}`		`set /SP/services/ssh generate_new_key_type= [rsa|dsa]`
`usershow` [*username*]	Displays a list of all user accounts, permission levels, and whether passwords are assigned.	`show /SP/users`
`useradd` *username*	Adds a user account to ALOM CMT.	`create /SP/users/`*username*

TABLE 6-2 ALOM CMT Shell Configuration Commands *(Continued)*

ALOM CMT Command	Summary	Comparable ILOM Command
`userdel` *username* `userdel -y` *username*	Deletes a user account from ALOM CMT. The `-y` option enables you to skip the confirmation question.	`delete /SP/users/`*username* `delete -script /SP/users/`*username*
`userpassword` [*username*]	Sets or changes a user password.	`set /SP/users/`*username* `password`
`userperm` [*username*] [`c`] [`u`] [`a`] [`r`]	Sets the permission level for a user account.	`set /SP/users/`*username* `role=` *permissions* (where *permissions* are `Administrator` or `Operator`)

TABLE 6-3 ALOM CMT Shell Log Commands

ALOM CMT Command	Summary	Comparable ILOM Command
`showlogs` [`-b` *lines*|`-e` *lines*|`-v`] [`-g` *lines*] [`-p` *logtype*`[r|p]]`	Displays the history of all events logged in the ALOM CMT RAM event log, or major and critical events in the persistent log. The `-p` option selects whether to display entries only from the RAM event log (*logtype* `r`) or the persistent event log (*logtype* `p`).	`show /SP/logs/event/list` No equivalent in ILOM
`consolehistory` [`-b` *lines*|`-e` *lines*|`-v`] [`-g` *lines*] [`boot`|`run`]	Displays the host server console output buffers.	`show /SP/console/history`

TABLE 6-4 ALOM CMT Shell Status and Control Commands

ALOM CMT Command	Summary	Comparable ILOM Command
`showenvironment`	Displays the environmental status of the host server. This information includes system temperatures, power supply status, front panel LED status, hard disk drive status, fan status, voltage, and current sensor status.	`show -o table -level all /SYS`
`showpower [-v]`	Displays power metrics for the host server.	`show /SP/powermgmt`
`shownetwork [-v]`	Displays the current network configuration information. The `-v` option shows additional information about your network, including information about your DHCP server.	`show /SP/network`
`console`	Connects to the host system console. The `-f` option forces the console write lock from one user to another.	`start /SP/console`
`console -f`		No equivalent in ILOM
`break -c`	Drops the host server from running the Solaris OS software into OpenBoot PROM or `kmdb` depending upon the mode in which the Solaris software was booted.	`set /HOST send_break_action=break`
`break -D`		`set /HOST send_break_action=dumpcore`
`bootmode [normal] [reset_nvram] [config=`*configname*`][bootscript =`*string*`]`	Controls the host server OpenBoot PROM firmware method of booting.	`set /HOST/bootmode` *property=value* (where *property* is `state`, `config`, or `script`)
`flashupdate -s` *IPaddr* `-f` *pathname* `[-v]`	Downloads and updates system firmware (both host firmware and ALOM CMT firmware). For ILOM, *ipaddr* must be a TFTP server. If DHCP is used, *ipaddr* can be replaced by the name of the TFTP host.	`load -source tftp://`*ipaddr*`/`*pathname*

TABLE 6-4 ALOM CMT Shell Status and Control Commands *(Continued)*

ALOM CMT Command	Summary	Comparable ILOM Command
`reset [-c]`	Attempts to gracefully reset the system. If that fails, this option forcefully reset the system.	`reset /SYS`
`reset [-y][-c]`		`reset -script /SYS`
`reset -f`	Forcfully resets the system.	`reset -f /SYS`
`reset -d`	Attempts to gracefully reset the control domain. If that fails, this option forcefully reset the control domain.	`reset /HOST/domain/control`
`reset [-d][-f]`	Forcefully resets the control domain.	`reset - f /HOST/domain/control`
`reset [-d][-n]`	When resetting the control domain, this option may automatically boot (this is the default behavior when the `auto-boot` option is *not* specified).	`set /HOST/domain/control auto-boot=disable reset /HOST/domain/control`
`reset [-d][-f][-n]`	When resetting the control domain, this option does not automatically boot and stays at the OpenBoot `ok` prompt. This option overrides all reboot variables and stops the control domain at the OpenBoot `ok` prompt after host reset. The `auto-boot?` option remains unchanged, thus subsequest reset commands automatically reboot host if the `auto-boot?` option is set to `true`.	`set /HOST/domain/control auto-boot=disable reset -f /HOST/domain/control`
`powercycle [-y] [-f]`	`poweroff` followed by `poweron`. The `-f` option forces an immediate `poweroff`, otherwise the command attempts a graceful shutdown.	`stop /SYS` `start /SYS`
`powercycle -y`		`stop -script /SYS` `start -script /SYS`
`powercycle -f`		`stop -force /SYS` `start -force /SYS`

TABLE 6-4 ALOM CMT Shell Status and Control Commands *(Continued)*

ALOM CMT Command	Summary	Comparable ILOM Command
`poweroff`	Removes the main power from the host server. The `-y` option enables you to skip the confirmation question. ALOM CMT attempts to shut the server down gracefully. The `-f` option forces an immediate shutdown.	`stop /SYS`
`poweroff -y`		`stop -script /SYS`
`poweroff -f`		`stop -force /SYS`
`poweron`	Applies the main power to the host server or FRU.	`start /SYS`
`setlocator [on/off]`	Turns the Locator LED on the server on or off.	`set /SYS/LOCATE value=`*value*
`showfaults [-v]`	Displays current valid system faults.	`show /SP/faultmgmt`
`clearfault` *UUID*	Manually repairs system faults.	`set /SYS/`*component* `clear_fault_action=true`
`showlocator`	Displays the current state of the Locator LED as either on or off.	`show /SYS/LOCATE`

TABLE 6-5 ALOM CMT Shell FRU Commands

ALOM CMT Command	Summary	Comparable ILOM Command
`setfru -c` *data*	The `-c` option enables you to store information (such as inventory codes) on all FRUs in a system.	`set /SYS customer_frudata=` *data*
`showfru -g lines [-s|-d]` [*FRU*]	Displays information about the FRUs in a host server.	No equivalent in ILOM
`removefru [-y]` [*FRU*]	Prepares a FRU (for example, a power supply) for removal. The `-y` option enables you to skip the confirmation question.	`set /SYS/PS0 prepare_to_remove_action= true`

TABLE 6-6 ALOM CMT Shell Automatic System Recovery (ASR) Commands

ALOM CMT Command	Summary	Comparable ILOM Command
`enablecomponent` *asr-key*	Removes a component from the `asr-db` blacklist.	`set /SYS/`*component* `component_state=enabled`
`disablecomponent` *asr-key*	Adds a component to the `asr-db` blacklist.	`set /SYS/`*component* `component_state=disabled`
`showcomponent` *asr-key*	Displays system components and their test status (ASR state).	`show /SYS/`*component* `component_state`
`clearasrdb`	Removes all entries from the asr-db blacklist.	No equivalent in ILOM

TABLE 6-7 ALOM CMT Shell Miscellaneous Commands

ALOM CMT Command	Summary	Comparable ILOM Command
`help` [*command*]	Displays a list of all ALOM CMT commands with their syntax and a brief description of how each command works. Specifying a command name as an option enables you to view the help for that command.	`help`
`resetsc`	Reboots ALOM CMT. The `-y` option enables you to skip the confirmation question.	`reset /SP`
`resetsc -y`		`reset -script /SP`
`userclimode`	Sets the type of shell to *shelltype*, where *shelltype* is `default` or `alom`.	`set /SP/users/username cli_mode=`*shelltype*
`logout`	Logs out from an ALOM CMT shell session.	`exit`
`setsc sys_ioreconfigure` *value*	Sets the `ioreconfiguration` parameter to *value*, where *value* is `true`,`false`, or `next-boot`	`set /HOST ioreconfigure=`*value*

CHAPTER 7

Event Messages Available Through the ALOM Compatibility Shell

This section contains information about event messages. Topics include:

Event Message Overview

The firmware on the service processor (known in ALOM CMT as the SC or *system controller*) sends event messages to several destinations:

- Messages are sent to all logged-in users, based on the configuration of the `sc_clieventlevel`variable.
- Messages are recorded in the event log. View logged messages using the ALOM compatibility shell `showlogs` command.
- Messages recorded in the event log can be identified according to the severity of the event. If the severity of the event is major or critical, you can view the messages for those events using the ALOM compatibility shell `showlogs -p r` command. View *all* messages in the event log using the ALOM compatibility shell `showlogs -p p` command.
- Messages are sent in email messages based on the configuration of the `mgt_mailalert` variable. Individual email addresses can be configured to receive messages of different severities.

- If the event represents a fault, the event message appears in the output of the ALOM compatibility shell `showfaults` command.
- Messages are sent to the managed system operating system for logging into the Solaris `syslog` facility based on the configuration of the `sys_eventlevel` variable. Not all versions of the Solaris Operating System support this capability.

Event Severity Levels

Each event has a severity level and corresponding number. These levels and numbers are:

- Critical (1)
- Major (2)
- Minor (3)

ALOM compatibility shell configuration parameters use these severity levels to determine which event messages are displayed.

Service Processor Usage Event Messages

The table below displays usage event messages from the service processor (system controller).

TABLE 7-1 System Controller Usage Event Messages

Severity	Message	Description
Critical	`Host has been powered off`	ALOM compatibility shell sends this message whenever the SC requests a host power off, including when a user types the `poweroff` command.
Critical	`Host has been powered off`	ALOM compatibility shell sends this message when the SC requires an immediate host power off, including when a user types the `poweroff -f` command.
Critical	`Host has been powered off`	ALOM compatibility shell sends this message when the host power has turned off. It is also normal for this event to be sent when the host has reset itself.
Major	`Host has been powered on`	ALOM compatibility shell sends this message when the SC requests a host power on, either because of `sc_powerstatememory` or when a user types the `poweron` command.

Critical
Critical
Critical
	`Host has been reset`
	`Host has been powered ff`
	`Host has been powered on`
		ALOM compatibility shell sends one of these messages when the SC requests a host reset, including when a user types the `reset` command.

Critical	`Host System has Reset.`	ALOM compatibility shell sends this message when the SC detects that the host has reset. This message is followed immediately by the `Host has been powered off` event message because reset is implemented as a `powercycle` on these systems.
Minor	`"root : Set : object = /clock/datetime : value = "`*`datetime`*`": success`	ALOM compatibility shell sends this message when a user types the `setdate` command to modify the SC date or time.

TABLE 7-1 System Controller Usage Event Messages *(Continued)*

Severity	Message	Description
Major	`Upgrade succeeded`	ALOM compatibility shell sends this message after the SC firmware has been reloaded after operation of the `flashupdate` command.
Minor	`"root : Set : object = /HOST/bootmode/state: value = "`*bootmode-value*`": success`	ALOM compatibility shell sends this message after a user changes the bootmode to normal using the `bootmode normal` command.
Minor	`"root : Set : object = /HOST/bootmode/state: value = "reset_nvram": success`	ALOM compatibility shell sends this message after a user changes the boot mode to `reset_nvram` with the `bootmode` command. *date_and_time* are the date and time that the boot mode setting expires, ten minutes from the time the command was run
Minor	`"root : Set : object = /HOST/bootmode/script: value = "`*text*`": success`	ALOM compatibility shell sends this message after a user changes the boot mode boot script. The boot script = "*text*" is the text of the boot script provided by the user.
Minor	`Keyswitch position has been changed to` *keyswitch_position*`.`	ALOM compatibility shell sends this message after a user changes the keyswitch position with the `setkeyswitch` command. The *keyswitch_position* is the new keyswitch position.
Minor	`"user" : open session : object = /session/type: value = www/shell: success`	LOM compatibility shell sends this message when users log in. The *username* is the name of the user who just logged in.
Minor	`object = /session/type: value = www/shell: success`	ALOM compatibility shell sends this message when users log out. The *username* is the name of the user who just logged out.
Minor	`"root : Set: object = /HOST/send_break_action: value = dumpcore : success`	ALOM compatibility shell sends this message when an ALOM compatibility shell user sends a request to the host to dump core by typing the `break -D` command.

TABLE 7-1 System Controller Usage Event Messages *(Continued)*

Severity	Message	Description
Critical	`Host Watchdog timeout.`	ALOM compatibility shell sends this message when the host watchdog has timed out and the `sys_autorestart` variable has been set to `none`. The SC will not perform any corrective measures.
Critical	`SP Request to Dump core Host due to Watchdog.`	ALOM compatibility shell sends this message when the host watchdog has timed out and the `sys_autorestart` variable has been set to `dumpcore`. The SC attempts to perform a core dump of the host to capture error state information. The dump core feature is not supported by all OS versions.
Critical	`SP Request to Reset Host due to Watchdog.`	ALOM compatibility shell sends this message when the host watchdog has timed out and the `sys_autorestart` variable has been set to `reset`. Then the SC attempts to reset the host.

Environmental Monitoring Event Messages

The following table displays environmental monitoring event messages from the service processor (system contoller).

TABLE 7-2 Environmental Monitoring Event Messages

Severity	Message	Description
Critical	`SP detected fault at time` *time*`. Chassis cover removed.`	ALOM compatibility shell sends this message if the chassis cover has been removed. The platform hardware turns managed system power off immediately as a precautionary measure. The event message `System poweron is disabled` should accompany this message to prevent the use of the `poweron` command while the chassis cover is removed.
Major	`System poweron is disabled.`	ALOM compatibility shell sends this message when the SC refuses to power on the system, either through the user `poweron` command or by the front panel power button. The SC disables power on because of an accompanying event, such as the event indicated by the message `Chassis cover removed.` Other possibilities include a device failure or insufficient fan cooling.
Major	`System poweron is enabled.`	ALOM compatibility shell sends this message after the condition that caused power on to be disabled (indicated by the preceding `System poweron is disabled` message) has been rectified. For example, by replacing the chassis cover or installing sufficient fans to cool the system

TABLE 7-2 Environmental Monitoring Event Messages *(Continued)*

Severity	Message	Description
Major	`SP detected fault at time` *time* `"`*device* `'fault' at PS0 asserted"`	ALOM compatibility shell sends this message when a failure or a fault is detected. A fault is a lower priority condition that indicates the system is operating in a degraded mode. A failure is a higher priority condition indicating that a FRU has failed and should be replaced. *device* is the type of device that has failed, such as `SYS_FAN`, `PSU`, `CURRENT_SENSOR`, `DOC`, or `FPGA`. This fault event message appears in the output of the ALOM compatibility shell `showfaults` command.
Minor	`SP detected fault cleared at` *time* `time current fault at` *device* `asserted.`	ALOM compatibility shell sends this message to indicate that a prior fault or failure has recovered or been repaired. The fields (*time* and *device*) are the same as the prior fault or failure event.
Major	`SP detected fault at time` *time* `"`*device* `'fault' at PS0 asserted"`	ALOM compatibility shell sends this message when a failure or a fault is detected. A fault is a lower priority condition that indicates the system is operating in a degraded mode. A failure is a higher priority condition indicating that a FRU has failed and should be replaced. *device* is the type of device that has failed, such as `SYS_FAN, PSU, CURRENT_SENSOR, DOC`, or `FPGA`. This fault event message appears in the output of the ALOM compatibility shell `showfaults` command.
Minor	`SP detected fault cleared at time` *time* `current fault at` *device* `asserted.`	ALOM compatibility shell sends this message to indicate that a prior fault or failure has recovered or been repaired. The fields (*time* and *device*) are the same as the prior fault or failure event.

TABLE 7-2 Environmental Monitoring Event Messages *(Continued)*

Severity	Message	Description
Major	*Device_type* at *location* has exceeded low warning threshold.	ALOM compatibility shell sends these messages when analog measurement sensors have exceeded the specified threshold. The threshold that was exceeded is included in the message. *Device_type* is the type of device that has failed, such as VOLTAGE_SENSOR or TEMP_SENSOR. The *location* is the location and name of the device that has the error condition. The location and name of the device match the output of the ALOM compatibility shell showenvironment command. For TEMP_SENSOR events, this message could indicate a problem outside of the server, such as the temperature in the room or blocked airflow in or out of the server. For VOLTAGE_SENSOR events, this message indicates a problem with the platform hardware or possibly with add-on cards installed. These fault event messages appear in the output of the ALOM compatibility shell showfaults command.
Critical	*Device_type* at *location* has exceeded low critical shutdown threshold.	
Critical	*Device_type* at *location* has exceeded low nonrecoverable shutdown threshold	
Major	*Device_type* at *location* has exceeded high warning threshold	
Critical	*Device_type* at *location* has exceeded high soft shutdown threshold	
Critical	*Device_type* at *location* has exceeded high hard shutdown threshold	
Minor	*Device_type* at *location* is within normal range.	ALOM compatibility shell sends this message when an analog measurement sensor no longer exceeds any warning or failure thresholds. This message is sent only if the sensor reading recovers sufficiently within the boundaries of the failure parameters. The message might not match the current output of the ALOM compatibility shell showenvironment command.
Critical	Critical temperature value: host should be shut down	ALOM compatibility shell sends this message to indicate that the SC has started a shutdown because there are not enough working fans necessary to keep the system cooled. The number of fans necessary to maintain system cooling depends on the platform. See your platform documentation for more information.

TABLE 7-2 Environmental Monitoring Event Messages *(Continued)*

Severity	Message	Description
Critical	`Host system failed to power off.`	ALOM compatibility shell sends this message if the SC is unable to power off the system. This message indicates a problem with either the platform hardware or the SC hardware. The system should be manually unplugged to prevent damage to the platform hardware. This fault event message appears in the output of the ALOM compatibility shell `showfaults` command.
	FRU_type `at` *location* `has been removed.` *FRU_type* `at` *location* `has been inserted.`	ALOM compatibility shell sends these messages to indicate that a FRU has been removed or inserted. The field *FRU_type* indicates the type of FRU, such as `SYS_FAN, PSU`, or `HDD`. The field *location* indicates the location and name of the FRU, as shown in the output of the `showenvironment` command.
Major	`Input power unavailable for PSU at` *location*`.`	ALOM compatibility shell sends this message to indicate that a power supply is not receiving input power. This message normally indicates that the power supply is not plugged in to AC power. If the power cords are plugged in to an outlet that is provided power, this message indicates a problem with the power supply itself. This fault event message appears in the output of the ALOM compatibility shell `showfaults` command.

Host Monitoring Event Messages

The following table displays host monitoring event messages from the service processor (system controller).

TABLE 7-3 Host Monitoring Event Messages

Severity	Message	Description
Critical	`SP detected fault at time` *time component* disabled	ALOM compatibility shell sends this message when a component has been disabled, either automatically by POST discovering a fault or by a user typing the `disablecomponent` command. *component* is the disabled component, which will be an entry from the platform `showcomponent` command. This fault event message appears in the output of the ALOM compatibility shell `showfaults` command.
Minor	`SP detected fault cleared at` *component* `reenabled`	ALOM compatibility shell sends this message when a component is enabled. A component can be enabled by a user typing the `enablecomponent` command or by FRU replacement if the component itself is a FRU (such as a DIMM). *component* is the name of the component shown in the output of the platform `showcomponent` command.
Major	`Host detected fault,` `MSGID:` *SUNW-MSG-ID*`..`	ALOM compatibility shell sends this message when the Solaris PSH software diagnoses a fault. The *SUNW-MSG-ID* of the fault is an ASCII identifier that can be entered at `http://www.sun.com/msg`for more information about the nature of the fault and the steps to repair. This fault event message appears in the output of the ALOM compatibility shell `showfaults` command.

TABLE 7-3 Host Monitoring Event Messages *(Continued)*

Severity	Message	Description
Major	*Location* `has been replaced; faults cleared.`	ALOM compatibility shell sends this message after the replacement of a FRU that contained a host-detected fault. *Location* is the location and name of the FRU which was replaced. This event can be received at SC boot or after FRUs have been swapped and the chassis cover is closed.
Major	`Existing faults detected in` *FRU_PROM* `at` *location*`.`	ALOM compatibility shell sends this message to indicate that the SC has detected a new FRU with pre-existing faults logged into its FRU PROM. This event can occur when either a FRU or the SC card is moved from one system to another. The *location* is the name of the SEEPROM on the replaced FRU, such as `MB/SEEPROM`. The most recent existing fault will be imported from the FRU PROM onto the `showfaults` list. The entry on the `showfaults` list is the fault imported, not this message.

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