Sun™ Integrated Lights Out Manager (ILOM) 3.0

Supplement for the
Sun Netra™ T6340 Server Module

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Contents

Preface

This supplement contains information about using the Sun™ Integrated Lights Out Manager (ILOM) firmware with the service processor (SP) of the Sun Netra™ T6340 Server Module. The information in this supplement augments the set of documentation that covers features of ILOM 3.0 that are common to all platforms. ILOM firmware is used to manage and administer the Sun Netra T6340 Server Module. You should be an experienced system administrator with a knowledge of UNIX® commands.

To fully use the information in this document, you must have thorough knowledge of the topics discussed in these documents.

- *Sun Netra T6340 Server Module Product Notes*
- *Sun Integrated Lights Out Manager (ILOM) 3.0 Concepts Guide*
- ILOM CMM documentation for your Sun Netra modular system (chassis)

Using UNIX Commands

This document might not contain information on basic UNIX commands and procedures such as shutting down the system, booting the system, and configuring devices.

See one of the following for this information:

- Software documentation that you received with your system
- Solaris™ Operating System documentation, which is at

  (http://docs.sun.com)

Shell Prompts

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>

Related Documentation

The documents listed as online are available at:

(http://docs.sun.com/app/docs/prod/blade.t6340)

Additional Sun documentation is available at:

(http://www.sun.com/documentation/)

Application	Title	Part Number	Location
Late-breaking information	*Sun Netra T6340 Server Module Product Notes*	821-0897	Online
Getting started	*Sun Netra T6340 Server Module Getting Started Guide*	821-0898	Shipping kit Online
Safety information	*Sun Netra T6340 Server Module Safety and Compliance Manual*	821-0899	Online
	Important Safety Information for Sun Sun Hardware Systems	816-7190	Shipping kit
Installing and administering the server module	*Sun Netra T6340 Server Module Installation and Administration Guide*	821-0901	Online
Service information	*Sun Netra T6340 Server Module Service Manual*	821-0902	Online

For more information about how to work with ILOM features that are common to all platforms managed by ILOM, refer to the following documentation.

Task	Title	Part Number	Location
Conceptual information	*Sun Integrated Lights Out Manager (ILOM) 3.0 Concepts Guide*	820-6410	Online
Browser interface information	*Sun Integrated Lights Out Manager (ILOM) 3.0 Web Interface Procedures Guide*	820-6411	Online
CLI procedural information	*Sun Integrated Lights Out Manager (ILOM) 3.0 CLI Procedures Guide*	820-6412	Online
SNMP, IPMI, WS_Man, and CMI information	*Sun Integrated Lights Out Manager (ILOM) 3.0 Management Protocols Reference Guide*	820-6413	Online
Installation and configuration information	*Sun Integrated Lights Out Manager (ILOM) 3.0 Getting Started Guide*	820-5523	Online
ILOM features specific to the Sun Netra 6000 Modular System	*Sun Integrated Lights Out Manager (ILOM) 3.0 Supplement For the Sun Netra 6000 Modular System*	821-0935	Online

For more information about how to work with your host server, the following documentation provides information.

Task	Title
Performing diagnostic tests	*SunVTS™ User's Guide* *SunVTS Quick Reference Guide* *SunVTS Test Reference Manual* *Sun Management Center Software User's Guide*
Using the operating system for system and network administration	Documentation online at: (http://docs.sun.com/app/docs/prod/solaris.10#hic)
Working with Logical Domains (LDoms)	Documentation online at: (http://docs.sun.com/app/docs/prod/ldoms.mgr)
Using the Sun Netra 6000 Modular System	Documentation online at: (http://docs.sun.com/app/docs/prod/n6000.modsys#hic)

Documentation, Support, and Training

The Sun web site provides information about the following additional resources:

- Documentation (http://www.sun.com/documentation)
- Support (http://www.sun.com/support)
- Training (http://www.sun.com/training)

Third-Party Web Sites

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

Sun Integrated Lights Out Manager 3.0 Supplement for the Sun Netra T6340 Server Module, part number 821-0903-10.

Understanding ILOM for the Sun Netra T6340 Server Module

This chapter introduces ILOM for the Sun Netra T6340 Server Module.

This chapter contains the following sections:

- "ILOM Overview" on page 1
- "Chassis Monitoring Module Features" on page 2
- "Updating the System Firmware" on page 2
- "Resetting the Password to the Factory Default" on page 2

ILOM Overview

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 interface and a command-line interface, the Chassis Monitoring Module (CMM) of the Sun Netra 6000 Modular Chassis and Sun Netra T6340 Server Module, as well as SNMP and IPMI interfaces. For general information about ILOM, see the *Sun Integrated Lights Out Manager (ILOM) 3.0 Concepts Guide*.

Note – For information about upgrading, installing, and configuring ILOM on your service processor see the firmware installation instructions in the *Sun Netra T6340 Server Module Installation and Administration Guide* and the *Sun Netra T6340 Server Module Product Notes*.

Chassis Monitoring Module Features

The ILOM chassis monitoring module (CMM) manages the Sun Netra 6000 Modular System chassis. CMM provides management of chassis components, and a method of accessing the service processors in individual server modules. The CMM also provides automatic control of the chassis fan speed. For information about using the CMM ILOM with your chassis, refer to the ILOM supplement for your chassis.

Updating the System Firmware

If an updated version of the system firmware becomes available, you can obtain it from the SunSolve[SM] web site in the form of a patch.

Note – You cannot use Sun Update Connection Manager to obtain system firmware.

Resetting the Password to the Factory Default

The procedure for resetting the ILOM `root` password to the factory default (`changeme`) requires installation of a jumper on the service processor. The procedure is documented in the *Sun Netra T6340 Server Module Service Manual*.

For information about setting other service processor settings back to the factory defaults, refer to "Resetting the Variables to the Defaults Using ILOM" on page 44.

Managing the Host

This chapter contains information on ILOM features on the Sun Netra T6340 Server Module 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:

Resetting the Host

The `reset` command generates a graceful or forced hardware reset of the host server. By default, the reset command gracefully resets the host. If a graceful reset is not possible, a forced reset is performed. For a list of available options for the reset command in both the ILOM and ALOM compatibility CLIs, see "ALOM CMT Shell Status and Control Commands" on page 64.

Managing Host Boot Mode

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

Boot Mode

You can use the boot mode (`bootmode`) properties to specify how ILOM handles booting. This ability is useful to override particular OpenBoot™ or LDoms settings that might be incorrect, to set up OpenBoot variables using a script, or similar tasks.

For example, if the OpenBoot settings have become corrupt, 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 problems 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.

`bootmode` properties can be configured using either the ILOM command-line interface (CLI) or the web interface.

▼ Manage the Host Boot Mode LDoms Configuration (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 bootmode config=ldm-set1
```

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

For example:

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

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

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

▼ Manage the Host Boot Mode Script (CLI)

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

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

where `script` controls the host server OpenBoot PROM firmware method of booting. `script` does not affect the current `/HOST/bootmode` setting. *value* 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, the OpenBoot PROM 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.

▼ Display Host's Boot Mode Expiration Date (CLI)

● **At the** `->` **prompt, type:**

```
-> show /HOST/bootmode expires
     Properties:
        expires = Thu Oct 16 18:24:16 2008
```

where expires is the date and time when the current boot mode will expire.

▼ View or Configure Boot Mode Settings (Web Interface)

You can use the ILOM web interface to view or configure the four aspects of boot mode control:

- 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 and Configuring Host Control Information

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

- "Display the Host's MAC Address (CLI)" on page 8
- "Display the Host's OpenBoot Version (CLI)" on page 9
- "Display the Host's POST Version (CLI)" on page 9
- "Specify Host Behavior When the Host Stops Running (CLI)" on page 10
- "Specify Host Behavior When an Error Is Discovered During Diagnostics (CLI)" on page 9
- "View and Configure Host Control Information (Web Interface)" on page 10

▼ Display the Host's MAC Address (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.

/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).

● **View the current setting for this property:**

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

▼ Display the Host's OpenBoot Version (CLI)

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

- **View the current setting for this property:**

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

▼ Display the Host's POST Version (CLI)

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

- **View the current setting for this property:**

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

▼ Specify Host Behavior When an Error Is Discovered During Diagnostics (CLI)

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

- **Set this property:**

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

where *value* can be:

- `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.

  The default value is `false`.

▼ Specify Host Behavior When the Host Stops Running (CLI)

Use the `/HOST autorestart`property to specify what ILOM should do when the host leaves the `RUNNING` state.

● **Set this property:**

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

where *value* 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.

The default value is `reset`.

▼ View and Configure Host Control Information (Web Interface)

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

Host Control

View and configure the host control information. Auto Run on Error determines whether the host should continue to boot in the event of a non-fatal POST error. Auto Restart Policy determines what action the Service Processor should take when it discovers the host is hung. Boot Timeout defines the time out value for boot timer (0 will disable the timer). Boot Restart Policy defines boot timer restart action. Max Boot Fails Allowed defines the number of max boot fails allowed. Boot Fail Recovery defines the timer action upon reaching max boot fails.

MAC Address:	00:14:4f:ed:26:7a
Hypervisor Version:	Hypervisor 1.7.6 2009/12/01 14:30
OBP Version:	OBP 4.30.6 2009/12/01 12:41
POST Version:	POST 4.30.6 2009/12/01 13:18
SysFW Version:	Sun System Firmware 7.2.7.a 2009/12/25 03:05
Host Status:	Solaris running
Auto Run On Error:	False
Auto Restart Policy:	Reset
Boot Timeout:	0
Boot Restart Policy:	None
Max Boot Fails Allowed:	3
Boot Fail Recovery:	Poweroff

Save

ILOM enables you to view or configure several 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 Hypervisor version.**

5. **View the OpenBoot version.**

6. **View the POST version.**

7. **View the System Firmware version.**

8. **View the Host status.**

9. **Select a value for Auto Run On Error, if desired.**

10. **Select a value for Auto Restart Policy, if desired.**

11. **Select a value for Boot Timeout, if desired.**

12. **Select a value for Boot Restart Policy, if desired.**

13. **Select a value for Maximum Boot Failures Allowed, if desired.**

14. **Select a value for Boot Failure Recovery, if desired.**

15. **Click on Save.**

Managing Host Diagnostics and POST

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

- "Specify the Level of Diagnostics (CLI)" on page 12
- "Change the Diagnostics Mode (CLI)" on page 13
- "Specify Diagnostic Trigger Conditions (CLI)" on page 13
- "Choose the Amount of Verbosity in Diagnostic Output (CLI)" on page 14
- "Manage Diagnostic Settings (CLI)" on page 15

▼ Specify the Level of Diagnostics (CLI)

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

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

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

where *value* can be:

- `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 is max.

▼ Change the Diagnostics Mode (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:**

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

where *value* can be:

- off – Do not run any diagnostics.
- normal – Run diagnostics.
- service – Run service-technician diagnostics, equivalent to using the preset values of /HOST/diag trigger=*all-resets*, /HOSTS/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.

  The default value is normal.

▼ Specify Diagnostic Trigger Conditions (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 and separated by a space) 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.

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

For example:

```
-> set /HOST/diag trigger="user-reset power-on-reset"
Set 'trigger' to 'user-reset power-on-reset'
-> show /HOST/diag trigger
Properties:
        trigger = user-reset power-on-reset

    Commands:
        set
        show
->
```

▼ Choose the Amount of Verbosity in Diagnostic Output (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.

■ max - Diagnostics print full output on the system console, including the name and results of each test being run.

■ normal - Diagnostics print a moderate amount of output on the system console.

■ debug - Diagnostics print extensive debugging output on the system console, including devices being tested and debug output of each test.

The default value is normal.

For example:

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

```
         status = Solaris running

    Commands:
         cd
         set
         show
->
```

▼ Manage Diagnostic Settings (CLI)

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

● **At the -> prompt, type:**

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

For example:

```
-> show /HOST status
  /HOST
   Properties:
       status = Solaris running

    Commands:
         cd
         set
         show
->
```

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 (CLI)" on
  page 16
- "Display Host Status Information (CLI)" on page 16

▼ Enable the System to Send a Break Signal or Force a Core Dump (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` command brings the server into debug mode.

Specify `send_break_action=dumpcore` to force a core dump.

● **At the** `->` **prompt, type:**

```
-> set send_break_action=value
```

where *value* can be:

- ■ `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 (CLI)

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

● **At the** `->` **prompt, type:**

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

For example:

```
-> show /HOST status
  /HOST
   Properties:
       status = Solaris running

   Commands:
       cd
       set
       show
->
```

Managing the Service Processor

This chapter contains information on ILOM properties on the Sun Netra T6340 Server Module that augment the array of properties that are common to ILOM on other platforms. In particular, this chapter covers properties in the /SP namespace. This chapter consists of:

Description	Links
Storing Customer Information	"Change Customer FRU Data (CLI)" on page 18
	"Change System Identification Information (CLI)" on page 18
	"Change Customer Identification Information (Web Interface)" on page 19
Changing Service Processor Settings to Factory Defaults	"Reset Service Processor Settings to Factory Default Values (CLI)" on page 20
	"Reset Service Processor Settings to Factory Default Values (Web Interface)" on page 21
Displaying Console History	"Display Console History (CLI)" on page 21
Modifying Console Escape Characters	"Change Console Escape Characters (CLI)" on page 22
Changing Configuration Policy Settings	"Specify Backup of the User Database (CLI)" on page 23
	"Restore Host Power State at Restart (CLI)" on page 24
	"Specify Host Power State at Restart (CLI)" on page 24
	"Disable or Re-Enable Power-On Delay (CLI)" on page 25
	"Manage Configuration Policy Settings (Web Interface)" on page 25
Managing Network Access	"Disable or Re-Enable Network Access to the SP (CLI)" on page 32
	"Display the DHCP Server's IP Address (CLI)" 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 (CLI)" on page 18
- "Change System Identification Information (CLI)" on page 18
- "Change Customer Identification Information (Web Interface)" on page 19

▼ Change Customer FRU Data (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 (CLI)

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

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

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

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

▼ Change Customer Identification Information (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. **Edit the SP System Contact field, if desired.**

7. **Edit the SP System Location field, if desired.**

8. **View the SP System Description.**

9. **Click Save.**

Changing Service Processor Settings to Factory Defaults

You can reset the service processor setting to factory defaults using the CLI or the web interface.

- "Reset Service Processor Settings to Factory Default Values (CLI)" on page 20
- "Reset Service Processor Settings to Factory Default Values (Web Interface)" on page 21

▼ Reset Service Processor Settings to Factory Default Values (CLI)

Use the `set 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 the following command:**

```
-> set /SP reset_to_default=value
```

Where *value* can be one of the following:

- `none` - Make no changes.
- `all` - Reset (clear) all configuration and users.

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

▼ Reset Service Processor Settings to Factory Default Values (Web Interface)
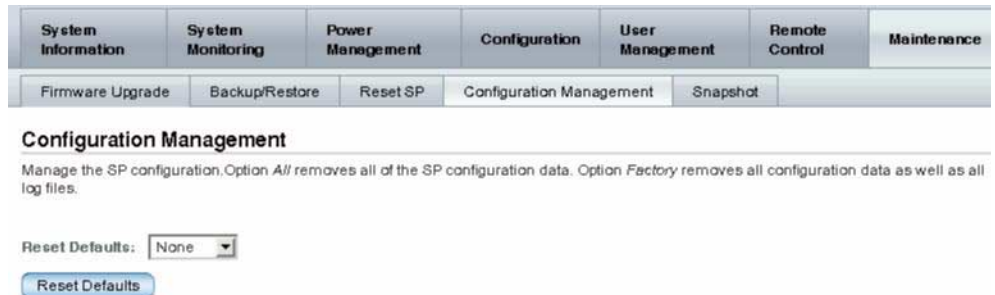
1. **Log in to the ILOM web interface as Administrator (root) to open the browser interface.**

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

3. **Select a Reset Defaults value:**
   - None - Make no changes.
   - All (including users - Reset (clear) all configurations and users.

4. **Click Reset Defaults.**

▼ Display Console History (CLI)

This section describes displaying the host server console output buffer.

The console buffer can contain up to 1 Mbyte of information. If ILOM senses a host server reset, it writes boot information and initialization data into the console buffer until ILOM is notified by the server that the Solaris OS is up and running.

If ILOM senses a host server reset, it writes boot information and initialization data into the console buffer until ILOM is notified by the server that the Solaris OS is up and running.

Note – You must have Administrator level user permission to use this command.

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

```
-> set /SP/console/history property=option[...]
-> show /SP/console/history
```

where *property* can be:

- line_count – This option accepts a value within the range of 1 to 2048 lines. Specify "" for an unlimited number of lines. The default is all lines.
- pause_count – This option accepts a value of 1 to any valid integer or "" for infinite number of lines. The default is not to pause.
- start_from – The options are:
    - end – The last line (most recent) in the buffer (the default).
    - beginning – The first line in the buffer.

    If you type the show /SP/console/history command without having set any arguments with the set command, ILOM displays all lines of the console log, starting from the end.

Note – Timestamps recorded in the console log reflect server time. These timestamps reflect local time, and the ILOM console log uses UTC (Coordinated Universal Time). The Solaris OS system time is independent of the ILOM time.

▼ Change Console Escape Characters (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
```

where *xx* can be any printable characters.

The sequence is limited to two characters. The default value is #. (Hash-Period). You can customize the sequence.

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 (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 enabled, 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 *value* can be:

- `enabled` – Backs up the user database to the SCC (This is the default value).
- `disabled` – No backup.

  The default value is `enabled`.

  For example, if you want the local user database on ILOM to be backed up, type:

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

▼ Restore Host Power State at Restart (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 nonvolatile 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.

● **At the** `->` **prompt, type:**

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

where *value* can be:

- `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).

The default value is `disabled`.

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

▼ Specify Host Power State at Restart (CLI)

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`.

● **At the** `->` **prompt, type:**

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

where *value* can be:

- `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).

The default value is `disabled`.

▼ Disable or Re-Enable Power-On Delay (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 power on helps minimize current surges on the main power source. This power-on delay is important when multiple servers in racks power on after a power outage.

● **At the** `->` **prompt, type:**

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

where *value* can be:

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

The default value is `disabled`.

▼ Manage Configuration Policy Settings (Web Interface)

System Information	System Monitoring	Power Management	Configuration	User Management	Remote Control	Maintenance

System Management Access	Alert Management	Network	DNS	Serial Port	Clock	Timezone	Syslog	SMTP Client	Policy

Policy Configuration

Configure system policies from this page. To modify a policy, select the radio button next to that policy, then choose Enable or Disable from the Action drop down list.

Service Processor Policies

— Actions — ▼

	Description	Status
○	Auto power-on host on boot (enabling this policy disables Set host power to last power state policy)	Enabled
○	Set host power to last power state on boot (enabling this policy disables Auto power-on host policy)	Disabled
○	Set to delay host power on	Disabled
○	Set to enable backing up of user account info to SCC card	Enabled

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.**

Managing Power Usage and Monitoring Power Consumption

This section describes how to use power management interfaces to manage power usage and to monitor power consumption.

Power Management Interfaces

Power management interfaces enable you to configure and display the power management policy of the system. You use power management policies to manage power usage based on user requirements. Power policies enable you to optimize power usage to match system requirements.

Note – An SNMP MIB (`PM-ILOM-MIB`) is available to support power management software.

Power Management Terminology

Table 3 -1 defines the terminology used in power management.

TABLE: Power Management Terms

Term	Definition
Actual power	The input power measured in Watts. This is the actual power consumed by all the power supplies in the system.
Permitted power	The maximum power that the server will permit to be used at any time.
Available power	The input power capacity in Watts. For the server modules, available power is the amount of power available to the server module from the chassis.
Power policy	The setting that governs system power usage at any point in time. Four power policies are supported: • **Performance:** The system is allowed to use all the power that is available. • **Elastic:** The system power usage is adapted to the current utilization level. For example, power up or down just enough system components to keep relative utilization at 70% at all times, even if the workload fluctuates. • **Regulated:** N/A • **Siesta:** N/A

▼ View Power Management Properties (CLI)

● **At the** `->` **prompt, type the following command:**

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

For example:

```
-> show /SP/powermgmt

 /SP/powermgmt
    Targets:

    Properties
        actual_power = 206
        permitted_power = 420
        allocated_power = 420
        available_power = 420
        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.
- `permitted_power` displays the maximum power consumption (in watts) expected.
- `available_power` displays the input power capacity (in watts) that is available to system components.

▼ View the Total Power Consumed by the System (CLI)

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

The `/SP/powermgmt actual_power` property is the same as `/SYS/VPS` in that `/SYS/VPS` is a sensor that has a threshold and `actual_power` is the value returned by the sensor.

● **At the `->` prompt, type the following command:**

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

for example:

```
-> show /SYS/VPS

  /SYS/VPS
     Targets:

     Properties
         type = Power Unit
         class = Threshold Sensor
         value = 200 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
         upper_nonrecov_threshold = N/A

     Commands
         cd
         show
```

▼ Viewing Total Available Power (CLI)

This interface enables you to view available power.

The system contains one property, `available_power`. The property supports the `show` command and returns the value `<input available power in watts>`.

● **Type the `show` command to display the available power.**

For example:

```
-> show /SYS/powermgmt available_power
```

▼ Monitoring Permitted Power Consumption (CLI)

This interface enables you to view permitted power consumption. The permitted power consumption is the maximum input power the server guarantees it will consume at any instant. You cannot this value directly, but you can change itbased on the power policy and budget, and chassis available power.

The system contains one property, `permitted_power`. The property supports the `show` command and returns the value <maximum permitted power consumption in watts>.

● **Type the** `show` **command to display the permitted power consumption.**

For example:

```
-> show /SYS/powermgmt available_power
```

Using the Power Consumption Control Interfaces

The following section describes how to monitor and control available power and set power consumption configuration parameters.

This interface enables you to set and monitor the power policy of the system. The power policy setting is saved across reboots.

The system contains one property, `policy`. This property supports the `show` and `set` commands. Two power policies are supported, performance and `elastic`. (The `regulated` and `siesta` policies are not supported currently.) For a description of each of these values, see the definition of Power Policy in the table in "Power Management Terminology" on page 27.

▼ Setting the Power Policy (CLI)

● **Type the** `set` **command to set the power policy.**

For example, set the power policy to `performance`:

```
-> set /SP/powermgmt policy=performance
```
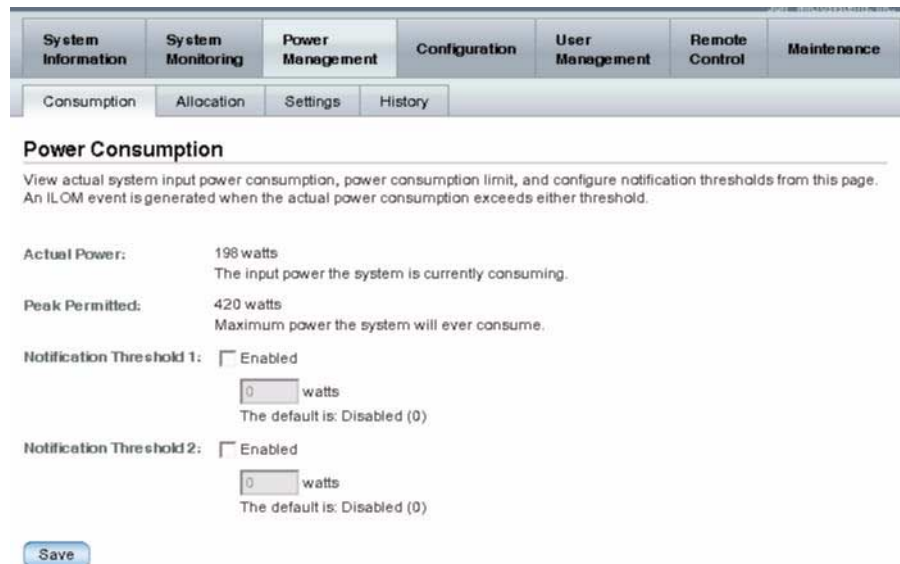
▼ Viewing the Power Policy (CLI)

● **Type the** show **command to display the power policy.**

For example:

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

▼ Viewing Power Management Properties (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.**

6. **Select the Power Control.**

7. **Select the Power Policy.**

Note – Elastic and Regulated policy values are not supported currently.

Managing Network Access

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

- "Disable or Re-Enable Network Access to the SP (CLI)" on page 32
- "Display the DHCP Server's IP Address (CLI)" on page 32

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

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, use the following procedure.

● **Type:**

```
-> show /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

▼ Changing the Type of SSH Keys (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 command set /SP/services/ssh generate_new_key_action to generate a new set of keys of the new type.

● **At the** -> **prompt, type the following command:**

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

where *value* can be rsa or dsa.

▼ Generating a New Set of SSH Keys (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 the following command:**

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

▼ Restarting the SSH Server (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 reloads the keys into the server's dedicated data structure in memory.

● **At the** `->` **prompt, type the following command:**

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

▼ Enable or Disable the SSH Service (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 port (SER MGT) using the ILOM web interface.

● **At the** `->` **prompt, type the following command:**

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

where *value* can be:

- enabled
- disabled

The default value is enabled.

▼ Managing SSH Server Settings (Web Interface)

1. **Log in to the ILOM browser 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.

Monitoring Active System Faults

▼ Displaying Active System Faults

● **At the ILOM CLI prompt (->), type the** show faulty **command.**

The show faulty command is a shortcut for the following ILOM command string:

```
-> show -o table -level all /SP/faultmgmt
```

The shortcut produces the same output as the longer command string, displaying all active faults in the system in a concise, tabular format. For example:

```
-> show faulty
Target            | Property     | Value
------------------+--------------+--------------------
/SP/faultmgmt/0   | fru          | /SYS/MB        |
/SP/faultmgmt/0   | timestamp    | Jan 16 12:53:00
/SP/faultmgmt/0   | sunw-msg-id  | NXGE-8000-0U
faults/0          |              |
/SP/faultmgmt/0   | uuid         | e19f07a5-580e-4ea0-ed6af663aa61
```

```
faults/0              |              |
/SP/faultmgmt/0  | timestamp   | Jan 16 12:53:00
faults/0
```

Managing Devices

This chapter contains information on ILOM properties on the Sun Netra T6340 Server Module that augment the array of properties that are common to ILOM on other platforms. In particular, this chapter covers properties in the /SYS namespace.

Managing Virtual Keyswitch Settings

▼ Specify Host Behavior (CLI)

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

● **At the** -> **prompt, type:**

```
-> set /SYS keyswitch_state=value
```
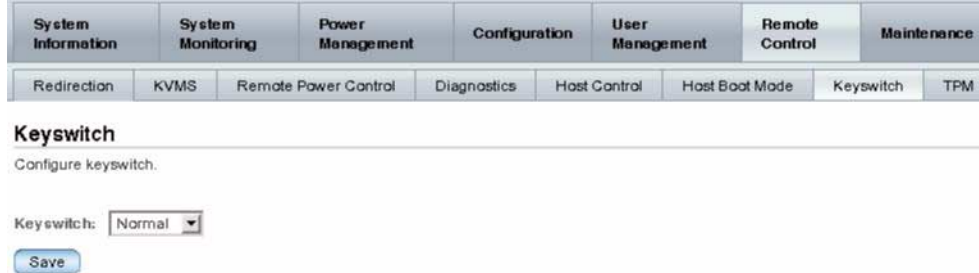
where *value* can be:

- normal – The system can power itself on and start the boot process (the default).
- standby – The system 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=break`.

▼ Control the Virtual Keyswitch (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.**

Using the Remote Console

Sun ILOM Remote Console is a Java™ application that enables you to remotely redirect and control the following devices on the host server.

- Keyboard
- Video console display
- Serial console display
- Mouse device
- Storage devices or images (CD/DVD)

This group of devices is commonly abbreviated as KVMS.

Remote Console is supported on the Sun Netra T6340 Server Module. Connection by Remote Console corresponds with item 2 in the figure in "Hardware Connection Options" on page 40. For more information about connection options for your Sun Netra T6340 Server Module that are depicted in that figure, refer to the *Sun Netra T6340 Server Module Getting Started Guide* and *Sun Netra T6340 Server Module Installation and Administration Guide*.

Sun ILOM Remote Console is documented in the *Sun Integrated Lights Out Manager (ILOM) 3.0 Web Interface Procedures Guide* (Chapter 12, "Managing Remote Hosts"). Much of the information in the guide is applicable for the Sun Netra T6340 Server Module. This chapter describes differences in using Remote Console with a Sun Netra T6340 Server Module.

Before you can use Remote Console with a Sun Netra T6340 Server Module, you must configure the host:

- If you want to work remotely with OpenBoot output and the `ok` prompt, refer to "Configuring the Host for Using Remote Console With OpenBoot" on page 45.
- If you want to work remotely with Solaris, refer to "Configuring the Host for Using Remote Console With Solaris" on page 49.

Hardware Connection Options

There are a number of different ways that you can connect to the Sun Netra T6340 Server Module to use the remote console, as described in this figure.

FIGURE: Connection Options for Sun Netra T6340 Server Modules
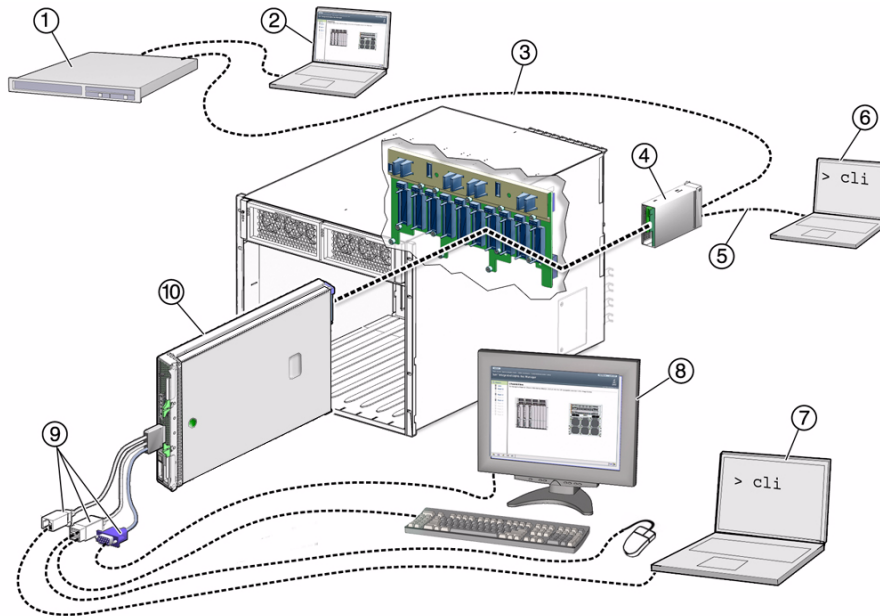
Figure Legend

1	Server (local or remote)	**6**	Computer connected to CMM RJ-45 serial connector
2	Computer connected to RJ-45 Ethernet (remote ILOM Remote Console connections)	**7**	Computer connected to dongle cable RJ-45 serial connector
3	Ethernet cable connected to RJ-45 Ethernet connector on the chassis management module (CMM) (NET MGMT 0)	**8**	Keyboard, video monitor, mouse (local KVM)
4	CMM with two connectors	**9**	Dongle cable with one RJ-45 serial, two USB 2 connectors and one HD15-pin connector (VGA)
5	RJ-45 cable connected to CMM serial port (SER MGT)	**10**	Sun Netra T6340 Server Module with service processor (SP)

Configuring the Host for Using Remote Console With OpenBoot

To use OpenBoot with Remote Console, you must set the OpenBoot® environment variables `input-device` and `output-device` to appropriate values. The default value for these variables is `virtual-console`. This `virtual-console` value is the textual stream console that is sent to the ILOM SP. You can change the OpenBoot `input-device` and `output-device` settings so that the ILOM SP textual console displays only the Power-On Self-Test (POST) output, but not OpenBoot output, the `ok` prompt, or the Solaris boot output.

TABLE: OpenBoot Remote Console Options

Environment Variable	Allowable Values	Conditions
`input-device`	`virtual-console` `rkeyboard`	Remote Serial Console, or ILOM `ssh` Shell Remote Video Console, or local USB-attached keyboard.
`output-device`	`virtual-console` `rscreen`	Remote Serial Console, or ILOM `ssh` Shell Remote Video Console, or local VGA-attached monitor.

The Remote Console, by default, provides boot information culminating in a login prompt in the Remote Serial Console, and in a graphical login window in the Remote Video Console. What you see depends on what value has been set for `output-device`. The output sources that have to choose from are shown below.

TABLE: Remote Console Data Sources

Data Source	Remote Console Access
Power-on self test (POST)	POST is always, and only, accessible through the Remote Serial Console.
OpenBoot PROM	Direct OpenBoot PROM output to either the Remote Serial Console or the Remote Video Console. The default is Remote Serial Console.
Solaris	Direct Solaris output to either the Remote Serial Console, or to the Remote Video Console.
	The Solaris graphical login window is always sent to the Remote Video Console output, no matter where you direct the boot progress output to be sent.

Note – If you change the value of the OpenBoot `output-device` to something other than the default value of `virtual-console`, you can not use the Remote Serial Console and the ILOM `ssh` shell to administer Solaris. If this happens, and you want to switch back to the default operation, you must reset both `input-device` and `output-device` to their default values. See "Resetting the Variables to the Defaults Using ILOM" on page 44.

⚠ **Caution –** Be careful when setting OpenBoot input and output variables. If you set the variablesto devices that are not consistently available, for example, you will not be able to see output or type at the `ok` prompt when the devices are not available. In this case, you must reset the value of both variables to the default. See "Resetting the Variables to the Defaults Using ILOM" on page 47 for more information.

At the OpenBoot `ok` prompt or in Solaris, use one of the following procedures to change the input and output device settings.

▼ Configuring the Host at the OpenBoot Prompt

1. **Establish a local connection to the default console on the server module.**

   Refer to the *Sun Netra T6340 Server Module Installation and Administration Guide* for information about establishing a local connection.

   To use the default console, the values of OpenBoot `input-device` and `output-device` variables must be set to the default value, `virtual-console`.

2. **Go to the OpenBoot** `ok` **prompt.**

   ■ If you see the ILOM prompt (->), you are on the service processor, not the system console. Start the system console:

   ```
   -> start /SP/console
   Are you sure you want to start /SP/console (y/n)? y

   Serial console started. To stop, type #.
   ```

   If you see the `ok` prompt in the console, go to Step 3.

   ■ If the Solaris OS is running, either configure the host in Solaris OS or bring the OS down.

   If Solaris OS is running, you will see a Solaris prompt. You can use the procedure "To Configure the Host in Solaris" on page 47.

If you prefer to configure the host at the ok prompt, you must bring down
Solaris to access the ok prompt. The preferred method of reaching the ok
prompt is to shut down the operating system by typing an appropriate
command (for example, the init or uadmin command) as described in Solaris
system administration documentation.

For example, if you type init 0 at the Solaris prompt, the system gradually
takes you to the ok prompt:

```
# init 0
```

3. **At the OpenBoot** ok **prompt, type:**

```
ok setenv output-device rscreen
ok setenv input-device rkeyboard
```

Note – The rkeyboard and rscreen aliases are defined with appropriate
parameters for a Sun Netra T6340 Server Module. These aliases are not generally
available or appropriate for all platforms.

4. **Activate the change by using the** reset-all **command.**

   The console no longer provides input.

5. **Exit the console to return to the ILOM SP, using the ILOM escape sequence:**

```
ok #.
```

The default ILOM escape sequence is #. (hash period).

6. **Start the ILOM Remote Video Console from the browser interface.**

   See "Configuring ILOM for Remote Management" on page 49 for more
   information.

7. **When you want to stop using Remote Console, change the values of the
   variables accordingly.**

   The default value for both variables is virtual-console. For more information
   about setting these variables for available connection methods, refer to the *Sun
   Netra T6340 Server Module Installation and Administration Guide*.

▼ Configuring the Host in Solaris OS

1. Become `root`**, then type:**

```
# eeprom output-device=rscreen
# eeprom input-device=rkeyboard
```

2. Activate the change by using the `reboot` **command.**

The console no longer provides output.

3. Exit the console to return to the ILOM SP, using the ILOM escape sequence:

```
# #.
```

The default ILOM escape sequence is #. (hash period).

4. Start the ILOM Remote Video Console from the browser interface.

See "Configuring ILOM for Remote Management" on page 49 for more information.

5. When you want to stop using Remote Console, change the values of the variables accordingly.

The default value for both variables is `virtual-console`. For more information about setting these variables for available connection methods, refer to the *Sun Netra T6340 Server Module Installation and Administration Guide*.

Resetting the Variables to the Defaults Using ILOM

If you are unable to access a Solaris OS or OpenBoot `ok` prompt, you can reset the variables to their default value, `virtual-console`. After the variables have been reset, you can access the prompts again from the default console. Using ILOM, you can reset only the `output-device` and `input-device` variables, or you can reset all the OpenBoot NVRAM variables.

▼ Resetting the `output-device` and `input-device` Variables to Factory Default

To reset only the `output-device` and `input-device` environment variables to the default value, you must use a bootmode script. Refer to the section "Managing Host Boot Mode" on page 4 for general instructions.

1. Reset the variables:

```
-> set /HOST/bootmode script="set-default input-device set-default
output-device"
```

2. Power cycle the host:

```
-> stop /SYS
```

```
-> start /SYS
```

3. At OpenBoot, ensure that the host is up:

```
-> show /HOST
```

4. Power cycle the host again.

The variables are now set to the default value `virtual-console`, and you can use the default console.

Resetting All OpenBoot NVRAM Variable to Factory Defaults

Refer to the section "Managing Host Boot Mode" on page 4 for general instructions.

To reset the variables using the CLI, follow the procedure "Change the Host Boot Mode Behavior at Reset (CLI)" on page 5.

Configuring the Host for Using Remote Console With Solaris OS

▼ Configuring the Host in Solaris OS

You must set the remote video resolution. The only remote video resolution supported is 1024x768x75.

1. **In Solaris, become** `root`**, then type:**

```
# fbconfig -res 1024x768x75
```

2. **Activate the change by logging out, then logging back in.**

IPMI Sensor Reference

Your server module 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.

The IPMI interface limits sensor names to 16 characters. Sensor names must sometimes be shortened to fit this character limit. For example, /SYS is sometimes removed from the beginning of the path, or CMP0 might be abbreviated to P0.

This chapter contains the following topics:

Sensors on the Sun Netra T6340 Server Module

TABLE: Sensors on the Sun Netra T6340 Server Module

IPMI Name	Full Path	Description
/SYS/SLOTID	/SYS/SLOTID	Identifier of the slot where the blade is installed
/MB/V_+V3_STBY	/SYS/MB/V_+V3_STBY	3.3V standby voltage threshold sensor
/MB/V+1VO	/SYS/MB/V+1VO	MB voltage sensor
/MB/V+1V2	/SYS/MB/V+1V2	MB voltage sensor
/MB/V+1V5IO	/SYS/MB/V+5IO	MB voltage sensor
/MB/V+1V8	/SYS/MB/V+1V8	MB voltage sensor
/MB/V+3V3	/SYS/MB/V+3V3	MB voltage sensor
/MB/V+5V	/SYS/MB/V+5V	MB voltage sensor
/MB/V+12V	/SYS/MB/V+12V	MB voltage sensor
/MB/I+12V	/SYSS/MB/I+12V	MB 12V current sensor, in Amps
/SP/V_BAT	/SYS/SP/V_BAT	Battery voltage threshold sensor
/SYS/VPS	/SYS/VPS	Real-time blade power consumption, in Watts
/MB/V_VDDIO	/SYS/MB/V_DDIO	I/O voltage threshold sensor
/MB/CMPn/V_+1V1	/SYS/MB/CMPn/V_+1V1	CMP (0-1) CPU core voltage sensor
/MB/CMPn/V_+1V5	/SYS/MB/CMPn/V_+1V5	CMP (0-1) CPU core voltage sensor
/MB/CMPn/V_+1V8	/SYS/MB/CMPn/V_+1V8	CMP (0-1) CPU core voltage sensor
/MB/CMPn/I_+1V1	/SYS/MB/CMPn/I_+1V1	CMP (0-1) CPU current draw sensor, in Amps
/MB/CMPn/I_+1V5	/SYS/MB/CMPn/I_+1V5	CMP (0-1) CPU current draw sensor, in Amps

IPMI Name	Full Path	Description
/MB/CMP*n*/I_+1V8	/SYS/MB/CMP*n*/I_+1V8	CMP (0-1) CPU current draw sensor, in Amps
/MB/CMP*n*/T_+1V1	/SYS/MB/CMP*n*/T_+1V1	CMP (0-1) temperature sensor for voltage regulators, in degrees Celsius.
/MB/CMP*n*/T_+1V5	/SYS/MB/CMP*n*/T_+1V8	CMP (0-1) temperature sensor for voltage regulators, in degrees Celsius.
/MB/CMP*n*/T_+1V8	/SYS/MB/CMP*n*/T_+1V8	CMP (0-1) temperature sensor for voltage regulators, in degrees Celsius.
/P*n*/BR*n*/CH*n*/D*n*/P	/SYS/MB/P*n*/BR*n*/CH*n*/D*n*/P	CMP (0-1) DIMM presence sensors defined by branch BR*n* (where *n*= 0 or 1), channel CH*n* (where *n*= 0 or 1), and DIMM D*n* (where *n* is an integer 0-3).
/MB/P*n*/CBUS_BT*n*	/SYS/MB/P*n*/CBUS_BT*n*	CMP (0-1) CPU corner bus test point, for point CBUS_BT*n*, where *n* is an integer 0-11.
/MB/CMP*n*/T_IN	/SYS/MB/CMP*n*/T_IN	CMP (0-1) temperature leading into the CPU, in degrees Celsius.
/MB/CMP*n*/T_TCORE	/SYS/MB/CMP*n*/T_TCORE	CMP (0-1) CPU temperature sensor at the top of the chip, in degrees Celsius.
/MB/CMP*n*/T_BCORE	/SYS/MB/CMP*n*/T_BCORE	CMP (0-1) CPU temperature sensor at the bottom of the chip, in degrees Celsius.
/P*n*/BR*n*/CH*n*/D*n*/T_AMB	/SYS/MB/P*n*/BR*n*/CH*n*/D*n*/T_AMB	CMP (0-1) temperature sensor (in degrees Celsius) defined by branch BR*n* (where *n*= 0 or 1), channel CH*n* (where *n*= 0 or 1), and DIMM D*n* (where *n* is an integer 0-3).
/HDD*n*/PRSNT	/SYS/HDD*n*/PRSNT	Hard disk drive (0-1) presence sensors

TABLE: Sensors on the Sun Netra T6340 Server Module *(Continued)*

IPMI Name	Full Path	Description
/NEMn/PRSNT	/SYS/NEMn/PRSNT	Network Express Module (NEM) disk (0-1) presence sensors.
/PSn/PRSNT	/SYS/PSn/PRSNT	PS (0-1) chassis component sensors.
/FMn/PRSNT	/SYS/FMn/PRSNT	FM (0-5) chassis component sensors.
/FMn/Fn/TACH	/SYS/FMn/Fn/TACH	FM (0-5) tachometer (in RPM) for Fn, where n = 0 or 1.
/FMn/SERVICE	/SYS/FMn/SERVICE	FM (0-5) service sensor.
/PSn/VINOKn	/SYS/PSn/VINOKn	PS (0-1) sensor for VINOKn, where n = 0 or 1.
/PSn/PWROKn	/SYS//PSn/PWROKn	PS (0-1) sensor for PWROKn, where n = 0 or 1.
/PSn/FANOK	/SYS/PSn/FANOK	PS (0-1) fan OK sensor
/PSn/TEMPOK	/SYS/PSn/TEMPOK	PS (0-1) temperature OK sensor
/PSn/V12VOKn	/SYS/PSn/V12VOKn	PS (0-1) OK sensor for IV12VOKn, where n = 0 or 1.
/PSn/I12VOKn	/PSn/I12VOKn	PS (0-1) OK sensor for V12VOKn, where n = 0 or 1.
/MB/FEM/PRSNT	/SYS/MB/FEM/PRSNT	FEM presence sensor.
/MB/FEM/PRSNT	/SYS/MB/FEM/PRSNT	REM presence sensor

Indicators on the Sun Netra T6340 Server Module

TABLE: Indicators on the Sun Netra T6340 Server Module

Name	Path	Description
/SYS/LOCATE	/SYS/LOCATE	Locate indicator
/SYS/ACT	/SYS/ACT	System power activity indicator
/SYS/SERVICE	/SYS/SERVICE	Service indicator
/HDDn/SERVICE	/SYS/HDDn/SERVICE	Hard disk drive (0-3) service indicator
/HDDn/OK2RM	/SYS/HDDn/OK2RM	Hard disk drive (0-3) OK-to-remove indicator
/SYS/OK2RM	/SYS/OK2RM	Blade OK-to-remove indicator
/Pn/BRn/CHn/Dn/S	/SYS/MB/CMPn/BRn/CHn/Dn/SERVICE	CMP (0–1) Branch (0–1) Channel (0–1) DIMM (0–3) Service indicator

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 chapter describes those differences. This chapter includes the following topics:

- "Limits to Backward Compatibility" on page 53
- "Create an ALOM CMT Compatibility Shell" on page 55
- "Comparing ILOM and ALOM CMT Commands" on page 58

Limits to Backward Compatibility

The backward compatibility shell supports some, but not all features of ALOM CMT. Some of the more significant differences between ILOM and ALOM CMT are described in this section or in the product notes for your server.

Adding a Commit Step to Procedures That Configure ILOM Network Configuration Properties

In the original ALOM CMT environment, when changing the values of some ALOM CMT variables (such as network and serial port configuration variables), it was necessary to reset the service processor (called the system controller in ALOM CMT) before the changes took effect. By comparison, in ILOM (and the ALOM CMT compatibility shell) you must commit the changed values rather than resetting the service processor.

Caution – In ILOM, if you change the value of the property and reset the SP without committing the change, the new property setting will not be retained.

▼ Commit a Change to a Network Configuration Property

1. Change the value of the target network configuration property.

2. Commit the change.

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'
```

▼ Commit a Change to a Serial Port Configuration Property

1. Change the value of the target serial port configuration property.

2. Commit the change.

Use either the ALOM CMT command `setsc ser_commit true` or the ILOM command `set /SP/serial/external commitpending=true`.

See "Comparing ILOM and ALOM CMT Commands" on page 58 for a list of variables and corresponding 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.

Note – If you upgraded the firmware from an earlier version and selected the option to preserve the settings of your earlier version of ILOM, you can continue to use your prior settings (including the username `admin` and password) without recreating the `admin` username, as described in this task. If you use the original password for the username `root` supplied with ILOM firmware, ILOM warns you that the password is still set to the factory default.

---

1. **Log onto the service processor with a username that has been assigned the user management (`u`) role.**

   When powered on, the SP boots to the ILOM login prompt.

```
XXXXXXXXXXXXXXXXX login: username
Password:
Waiting for daemons to initialize...
Daemons ready

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Warning: password is set to factory default.

->
```

2. **Create a user named `admin`, and set the `admin` account roles to `aucro` 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=aucro
Set 'role' to 'aucro'

->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=aucro 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

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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. The ALOM CMT compatibility shell is an ILOM interface. The comparisons between the ILOM CLI and the ALOM CMT compatibility CLI are described in "Comparing ILOM and ALOM CMT Commands" on page 58.

▼ Switch Between the ALOM CMT Shell and the Host Console

1. **To switch from the ALOM CMT shell to the host console, type:**

```
SC> console
host>
```

2. **To switch from the console to the ALOM CMT shell, type hash-period:**

```
host> #.
sc>
```

▼ Return to the ILOM From the ILOM CMT Shell

1. Log out of the ALOM CMT compatibility shell:

```
sc> logout
```

The ILOM prompt is displayed.

2. Log in to the ILOM CLI using an account other than the `admin` account (such as `root`).

The `admin` account cannot be used for the ILOM CLI as long as its CLI mode is set to the value `alom`.

In the ALOM CMT compatibility shell (with few exceptions), you can use commands that resemble the commands of ALOM CMT. Remember that the ALOM CMT compatibility shell is an ILOM interface. Refer to the *Sun Netra T6340 Server Module Service Manual* for information about service-related ALOM CMT compatibility shell commands.

Comparing ILOM and ALOM CMT Commands

The following tables provide 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, information displayed by ALOM CMT commands is in a terse format. Use the `-v` flag with these commands to obtain more verbose output. The ILOM `show` commands always provide verbose output, so a terse output format is not available.

- "ALOM CMT Shell Configuration Commands" on page 60

ALOM CMT Shell Configuration Commands

TABLE: 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 [-a]`	Resets all ALOM CMT configuration parameters to their default values. The `-a` option resets the user information to the default (one `admin` account only).	`set /SP reset_to_defaults=` `[none|factory|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`

ALOM CMT Command	Summary	Comparable ILOM Command
`showfru`	Displays information about the field-replaceable units (FRUs) in a host server.	Use the ILOM `show` [*FRU*] command to display static FRU information. (For dynamic FRU information, use the ALOM CMT `showfru` command.)
`showusers -g` *lines*	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 -level all -o table /SP/sessions` No equivalent in ILOM for `-g` option.
`showhost version`	Displays version information for host-side components. The *version* option displays the same information as the `showhost` command with no option.	`show /HOST`
`showkeyswitch`	Displays status of virtual keyswitch.	`show /SYS keyswitch_state`
`showsc` [*param*]	Displays the current nonvolatile 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`
 	
`ssh-keygen -r`
 	
`ssh-keygen -t {rsa|dsa}`
	Generates Secure Shell (SSH) host keys and displays the host key fingerprint on the SC.	`show /SP/services/ssh/keys rsa|dsa`
		
		`set /SP/services/ssh generate_new_key_action=true`
		
		`set /SP/services/ssh generate_new_key_type=[rsa|dsa]`

TABLE: ALOM CMT Shell Configuration Commands *(Continued)*

ALOM CMT Command	Summary	Comparable ILOM Command
usershow [*username*]	Displays a list of all user accounts and permission levels, and whether passwords are assigned.	show /SP/users
useradd *username*	Adds a user account to ALOM CMT.	create /SP/users/*username*
userdel [–y] *username*	Deletes a user account from ALOM CMT. The –y option enables you to skip the confirmation question.	delete [-script] /SP/users/*username*
userpassword [*username*]	Sets or changes a user password.	set /SP/users/*username* password
userperm [*username*] [c] [u] [a] [r] [o] [s]	Sets the permission level for a user account.	set /SP/users/*username* role=*permissions* [a|u|c|r|o|s]

ALOM CMT Shell Log Commands

TABLE: ALOM CMT Shell Log Commands

ALOM CMT Command	Summary	Comparable ILOM Command
`showlogs -p [r|p]` `[-b `*`lines`*`|-e `*`lines`*`|-v]` `[-g `*`lines`*`]`	Displays the history of all events logged in the event log, or major and critical events in the event log. –p selects whether to display only major and critical events from the event log (r) or to display all of the events from the event log (p). –g *lines* specifies the number of lines to display before pausing. –e *lines* displays *n* lines from the end of the buffer. –b *lines* displays *n* lines from the beginning of the buffer. –v displays the entire buffer.	`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.
	
	–g *lines* specifies the number of lines to display before pausing.
	
	–e *lines* displays *n* lines from the end of the buffer.
	
	–b *lines* displays *n* lines from the beginning of the buffer.
	
	–v displays the entire buffer.
		`set /SP/console/history `*`property=value`*
		`[set /SP/console/history `*`property=value`*`]`
		`[set /SP/console/history `*`property=value`*`]`
		`show /SP/console/history`
		where property can be:
		`line_count=`[*lines*] default value is "" (none), meaning there is no limit to the total number of lines retrieved from the buffer.
		`pause_count=`[*count*] default value is "" (none), meaning there is no limit to the count of lines displayed per pause.
		`start_from=`[end|beginning] default value is end.

ALOM CMT Shell Status and Control Commands

TABLE: 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 [-f]`	Connects to the host system console. The -f option forces the console write lock from one user to another. In ILOM, the -force option terminates the console, permitting you to start a new console.	`start [-force] /SP/console`

`break [-D][-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|dumpcore]`
		
		`[start /SP/console]`

`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`)

ALOM CMT Command	Summary	Comparable ILOM Command
flashupdate -s *IPaddr* -f *pathname* [-v] [-y] [-c]	Downloads and updates system firmware (both host firmware and ALOM CMT firmware). For ILOM, *ipaddr* must be a TFTP server. If you use DHCP, you can replace *ipaddr* with the name of the TFTP host. The -y option enables you to skip the confirmation question. The -c option enables you to update system firmware on your server without preserving configuration information. After configuration information has been deleted (by having used the -c option or the set /SP reset_to_defaults=factory command), you must use the -c option when replacing system firmware that includes ILOM 3.0 with firmware that includes ILOM 2.0. If you omit the -c option, the flashupdate command attempts to restore preserved configuration information, halting the firmware downgrade because that configuration information is absent.	load -source tftp://*ipaddr*/*pathname*
reset [-y] [-f] [-c]	Generates a hardware reset on the host server. The -y option enables you to skip the confirmation question. The -f option forces a hardware reset. The -c option starts the console.	reset [-script][-force] /SYS [start /SP/console]
reset -d [-n] [-y] [-f] [-c]	The -d option gracefully resets the control domain. The -n option sets the auto-boot variable to disable (lasts for one reset). The -y option enables you to skip the confirmation question. The -f option forces a hardware reset. The -c option starts the console.	[set /HOST/domain/control auto-boot=disable] reset [-script] [-force] /HOST/domain/control [start /SP/console]

TABLE: ALOM CMT Shell Status and Control Commands *(Continued)*

ALOM CMT Command	Summary	Comparable ILOM Command
`powercycle [-y] [-f]`	`poweroff` followed by `poweron`. The `-f` option forces an immediate `poweroff`, otherwise the command attempts a graceful shutdown.	`stop [-script] [-force] /SYS` `start [-script] [-force] /SYS`
`poweroff [-y][-f]`	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 [-script][-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`
`removeblade [-y]`	Pauses the service processor tasks and illuminates the blue OK to Remove LED, indicating that it is safe to remove the blade. The `-y` option enables you to skip the confirmation question.	`set /SYS` `prepare_to_remove_action=true`
`unremoveblade`	Turns off the OK to Remove LED and restores the service processor state.	`set /SYS` `return_to_service_action=true`

ALOM CMT Shell FRU Commands

TABLE: 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.	show [*FRU*]
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

ALOM CMT Shell Automatic System Recovery (ASR) Commands

TABLE: ALOM CMT Shell Automatic System Recovery (ASR) Commands

ALOM CMT Command	Summary	Comparable ILOM Command
enablecomponent *component*	Re-enables a component that has been disabled using the disablecomponent command.	set /SYS/*component* component_state=enabled
disablecomponent *component*	Disables a component.	set /SYS/*component* component_state=disabled
showcomponent *component*	Displays system components and their test status.	show /SYS/*component* component_state
clearasrdb	Removes all entries from the list of disabled components.	No equivalent in ILOM

ALOM CMT Shell Miscellaneous Commands

TABLE: 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 [–y]	Reboots ALOM CMT. The –y option enables you to skip the confirmation question.	reset [-script] /SP
userclimode *username* *shelltype*	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*

ALOM CMT Variables

This chapter contains the following topic:

-

ALOM CMT Variable Comparison

TABLE: ALOM CMT Variables and Comparable ILOM Properties

ALOM CMT Variable	Comparable ILOM Properties
diag_level	/HOST/diag level
diag_mode	/HOST/diag mode
diag_trigger	/HOST/diag trigger
diag_verbosity	/HOST/diag verbosity
if_connection	/SP/services/ssh state
if_emailalerts	/SP/clients/smtp state
if_network	/SP/network state
mgt_mailalert	/SP/alertmgmt/rules
mgt_mailhost	/SP/clients/smtp address
netsc_dhcp	/SP/network pendingipdiscovery
netsc_commit	/SP/network commitpending
netsc_enetaddr	/SP/network macaddress
netsc_ipaddr	/SP/network pendingipaddress
netsc_ipgateway	/SP/network pendingipgateway
netsc_ipnetmask	/SP/network pendingipnetmask
sc_backupuserdata	/SP/policy BACKUP_USER_DATA
sc_clieventlevel	N/A

TABLE: ALOM CMT Variables and Comparable ILOM Properties *(Continued)*

ALOM CMT Variable	Comparable ILOM Properties
sc_cliprompt	N/A
sc_clitimeout	N/A
sc_clipasswdecho	N/A
sc_customerinfo	/SP system_identifier
sc_escapechars	/SP/console escapechars
sc_powerondelay	/SP/policy HOST_POWER_ON_DELAY
sc_powerstatememory	/SP/policy HOST_LAST_POWER_STATE
ser_baudrate	/SP/serial/external pendingspeed
ser_data	N/A
sys_autorestart	/SP autorestart
sys_autorunonerror	/SP autorunonerror
sys_boottimeout	/HOST boottimeout
sys_bootrestart	/HOST bootrestart
sys_bootfailrecovery	/HOST bootfailrecovery
sys_eventlevel	N/A
sys_enetaddr	/HOST macaddress

Event Messages Available Through the ALOM Compatibility Shell

This chapter 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:

- 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 following table displays usage event messages from the service processor (system controller).

TABLE: 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.

TABLE: System Controller Usage Event Messages *(Continued)*

Severity	Message	Description
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 off` `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.
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.
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`	ALOM compatibility shell sends this message when users log in. *user* is the name of the user who just logged in.

TABLE: System Controller Usage Event Messages *(Continued)*

Severity	Message	Description
Minor	`"user" : close session : object = /session/type: value = www/shell: success`	ALOM compatibility shell sends this message when users log out. *user* 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.
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 controller).

TABLE: 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: Environmental Monitoring Event Messages *(Continued)*

Severity	Message	Description
Major	`SP detected fault at time` *time* `"fault_type` `'fault'` `at` *location* `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. *fault_type* is the type of failure that has occurred, such as temperature, voltage, current, or power supply. 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. 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	*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.
Critical	*Device_type* `at` *location* `has exceeded low critical shutdown threshold.`	*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.
Critical	*Device_type* `at` *location* `has exceeded low nonrecoverable shutdown threshold`	
Major	*Device_type* `at` *location* `has exceeded high warning threshold`	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.
Critical	*Device_type* `at` *location* `has exceeded high soft shutdown threshold`	
Critical	*Device_type* `at` *location* `has exceeded high hard shutdown threshold`	These fault event messages appear in the output of the ALOM compatibility shell showfaults command.

Severity	Message	Description
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.
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.
Major	*FRU_type* at *location* has been removed.	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.
Minor	*FRU_type* at *location* has been inserted.	
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: 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.

Severity	Message	Description
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.
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 that 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.

SCC Backup and Restore

SPARC servers store in the SCC (system configuration card) a subset of the information backed up and restored by ILOM 3.0. In case of a server failure in which there is no ILOM backup of SP data, transferring the SCC to the replacement server can provide partial restoration of the failed server's configuration data.

This chapter contains the following topic:

- "Information Stored on the SCC" on page 82

Information Stored on the SCC

Note – The version of the data on the SCC must match the version of the SCC daemon running on the SP. If the versions differ, the version on the SCC is ignored. After SP reset, the SCC data is overwritten.

TABLE: ILOM Properties Stored on the SCC

Properties	Targets

`/SP/users/`*username*`/`	`name`
	`password`
	`role`
	`cli_mode`

`/SP/network/`	`ipaddress`
	`ipdiscovery`
	`ipgateway`
	`ipnetmask`
	`state`

`/HOST/diag/`	`trigger`
	`level`
	`verbosity`
	`mode`

`/HOST/`	`autorunonerror` `autorestart`

`/SP/policy/`	`HOST_LAST_POWER_STATE`
	`HOST_POWER_ON_DELAY`
	`BACKUP_USER_DATA`

`/SP/services/ssh/state`	N/A

`/SP/clients/smtp/`	`address`
	`port`
	`state`

`/SP/alertmgmt/rules/[1-15]/`
(if the alert is an email alert)
	`destination`
	`level`
	`type`

`/SP/system_identifier`	N/A
`/SYS/keyswitch`	N/A

TABLE: ALOM CMT Conditional Variables

Variable
`sc_clipasswecho`
`sc_cliprompt`
`sc_clitimeout`
`sc_clieventlevel`
`sc_eschapechars`

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