



Sun™ Advanced Lights Out Manager Software User's Guide

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Preface

The *Sun Advanced Lights Out Manager User's Guide* contains information about the Sun Advanced Lights Out Manager (ALOM) system controller. This controller enables you to remotely manage and administer Netra™ servers. You should be an experienced system administrator with a knowledge of UNIX® commands.

How This Book Is Organized

[Chapter 1](#) introduces Sun Advanced Lights Out Manager (ALOM).

[Chapter 2](#) tells you how to customize the software for your server using ALOM.

[Chapter 3](#) introduces some common tasks that are easily done with ALOM.

[Chapter 4](#) explains the ALOM command line interface.

[Chapter 5](#) details configuration variables you can use to change ALOM behavior.

[Chapter 6](#) discusses the `scadm` utility, which is part of the Solaris™ operating environment, and can be used to perform many ALOM tasks while logged in to the server.

[Chapter 7](#) briefly identifies elements of OpenBoot PROM you may use to support ALOM.

[Appendix A](#) identifies the diagnostics and how they may be used to troubleshoot problems with ALOM.

[Appendix B](#) gives information on the ALOM watchdog timer feature.

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 or more of the following for this information:

- *Solaris Handbook for Sun Peripherals*
- AnswerBook2™ online documentation for the Solaris operating environment
- Other software documentation that you received with your system

Typographic Conventions

Typeface	Meaning	Examples
AaBbCc123	The names of commands, files, and directories; on-screen computer output	Edit your <code>.login</code> file. Use <code>ls -a</code> to list all files. % You have mail.
AaBbCc123	What you type, when contrasted with on-screen computer output	% su Password:
<i>AaBbCc123</i>	Book titles, new words or terms, words to be emphasized. Replace command-line variables with real names or values.	Read Chapter 6 in the <i>User's Guide</i> . These are called <i>class</i> options. You <i>must</i> be superuser to do this. To delete a file, type <code>rm filename</code> .

Shell Prompts

Shell	Prompt
C shell	<i>machine-name%</i>
C shell superuser	<i>machine-name#</i>
Bourne shell and Korn shell	\$
Bourne shell and Korn shell superuser	#
ALOM system controller	sc>
OpenBoot PROM firmware	ok

Related Documentation

For more information about how ALOM works with your host server, refer to the documentation that came with your host server. The following documentation provides information about how to perform certain tasks related to ALOM.

Task	Title
Performing diagnostic tests	<i>SunVTS User's Guide</i>
	<i>SunVTS Quick Reference Guide</i>
	<i>SunVTS Test Reference Manual</i>
	<i>Sun Management Center Software User's Guide</i>
System and network administration	<i>Solaris System Administrator Guide</i>
	<i>SPARC: Installing Solaris Software</i>
Using operating system environment	<i>Solaris User's Guide</i>

You can find the documentation listed above in the Solaris documentation package included with the Solaris operating environment, or on the Computer Systems Supplement CD included with your system hardware.

The man pages for the `scadm` command are on the S8/HW 7/03 Supplement CD in the following directory:

`/cdrom/solaris8_hw0703_suppcd#1/Man_Page_Supplement/Product/`

To load these man pages, perform a `pkgadd` for the package named `SUNWs8hwman`. The Solaris 8 HW Specific Additions On-line Man Pages will be loaded. For additional information, refer to the instructions included with the Supplement CD and to the Solaris Operating Environment media kit.

Accessing Sun Documentation

You can view, print, or purchase a broad selection of Sun documentation, including localized versions, at:

<http://www.sun.com/documentation>

You can find the ALOM on-line documentation in the following locations:

- On the platform Documentation CD that came with your server
- On the product Web site at <http://www.sun.com>

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Sun Advanced Lights Out Manager Software User's Guide, part number 817-5481-11

Introduction to Sun Advanced Lights Out Manager

This chapter provides an overview of Sun Advanced Lights Out Manager (ALOM). The following topics are discussed:

- [“ALOM Features” on page 1](#)
- [“What ALOM Monitors” on page 2](#)
- [“Fault and Failure Terminology” on page 4](#)
- [“Platform-Specific Information” on page 5](#)

Subsequent chapters contain detailed instructions for configuring and using ALOM.

ALOM Features

Sun Advanced Lights Out Manager (ALOM) is a system controller that enables you to remotely manage and administer the Netra server.

The ALOM software comes preinstalled on your host server. Therefore ALOM works as soon as you install and power on the server. You can then customize ALOM to work with your particular installation. Refer to [“Configuring ALOM” on page 7](#).

ALOM enables you to monitor and control your server, either over a network, or by using a dedicated serial port for connection to a terminal or terminal server. ALOM provides a command-line interface that you can use to remotely administer geographically distributed or physically inaccessible machines, see [“ALOM Shell Commands” on page 40](#).

In addition, ALOM enables you to run diagnostics remotely such as power-on self-test (POST), that would otherwise require physical proximity to the server's serial port, see ["Troubleshooting ALOM Problems" on page 166](#). You can also configure ALOM to send email alerts of hardware failures, hardware warnings, and other events related to the server or to ALOM.

The ALOM circuitry runs independently of the server, using the server's standby power. Therefore, ALOM firmware and software continue to function when the server operating system goes offline or when the server is powered off.

What ALOM Monitors

This section shows some components that ALOM can monitor on the Netra server.

Component Monitored	What ALOM Reveals
Disk drives	Whether each slot has a drive present, and whether it reports OK status
Fans	Whether a fan is present, fan speed and whether the fans report OK status
CPUs	Whether a CPU is present, the temperature measured at the CPU, and any thermal warning or failure conditions
Power supplies	Whether each bay has a power supply present, and whether it reports OK status
System enclosure temperature	System ambient temperature, as well as any enclosure thermal warning or failure conditions
Circuit breakers and voltages	Whether circuit breakers have been tripped, and whether correct voltages are reported
Server front panel	System rotary switch position and status of LEDs
Alarm port	Status of the alarm port

Using ALOM

The ALOM software comes preinstalled on your host server. Therefore, ALOM works as soon as you install and power on the server. You can connect an external ASCII terminal to the serial management port (SERIAL MGT) and start using ALOM right away without configuring the ALOM software. For more information about connecting an external terminal, refer to the Installation Guide that came with your host server.

You can use the ALOM software to monitor the host server in which the ALOM hardware is installed. This means that you can monitor only the host server, but not other servers on the network. Multiple users can monitor the host server, but only one user at a time can issue any commands that require permissions. The other connections are read-only; they may issue commands that allow them to view the system console and ALOM output, but they may not change any settings.

There are several ways to connect to ALOM:

1. Connect an ASCII terminal directly to the SERIAL MGT port. Refer to [“Serial Management Port” on page 9](#).
2. Use the `telnet` command to connect to ALOM through the Ethernet connection attached to the NET MGT port. [“Network Management \(Ethernet\) Port” on page 10](#).
3. Connect an external modem to the SERIAL MGT port and dial in to the modem. Note that this port does not support outgoing calls to the external modem. Refer to [“Configuring an External Modem” on page 10](#).
4. Connect a port on a terminal server to the SERIAL MGT port, and then use the `telnet` command to connect to the terminal server.

When you first apply power to the server, ALOM automatically begins monitoring the system and displaying output to the system console using the preconfigured default account. The default account is called `admin`, and has full (`cuar`) permissions. Refer to [“Permission Levels” on page 158](#) for more information on permissions.

To log in to ALOM and to specify a password for `admin`, perform the following step:

- At the ALOM command prompt (`sc>`), type the `password` command and then specify a password for the `admin` account. Refer to [“password” on page 57](#).

If you do not log in before ALOM times out, ALOM reverts to the system console and displays the following message:

```
Enter #. to return to ALOM.
```

If desired, after you log in to ALOM, you can customize ALOM to work with your particular installation. Refer to [“Configuring ALOM” on page 7](#).

You can now perform some common administrative tasks, such as adding ALOM user accounts. Refer to [“Common ALOM Tasks” on page 19](#).

Fault and Failure Terminology

All Sun servers show two operational states that you can view and monitor using ALOM: `ok`, and `failed` or `failure`. Some servers have an additional operational state: `fault`. This section explains the differences between the `fault` state and the `failed` state.

Fault State

A `fault` indicates that a device is operating in a degraded state, but the device is still fully operational. Due to this degradation, the device might not be as reliable as a device that does not show a `fault`. A device in the `fault` state is still able to perform its primary function.

For example, a power supply shows a `fault` state when an internal fan has failed. However, the power supply can still provide regulated power as long as its temperature does not exceed the critical threshold. In this `fault` state, the power supply might not be able to function indefinitely, depending on the temperature, load, and efficiency. Therefore, it is not as reliable as a non-faulted power supply.

Failed State

A `failure` indicates that a device is no longer operational as required by the system. A device fails due to some critical fault condition or combination of fault conditions. When a device enters a `failed` state, it ceases to function and is no longer available as a system resource.

Using the example of the power supply, the power supply is considered failed when it ceases to provide regulated power.

Platform-Specific Information

Before you update the ALOM firmware using either the `flashupdate` or `scadm download` command, make sure that the rotary switch on the Netra is set to the unlocked position. For more information, refer to the Installation Guide that came with your system.

Configuring ALOM

This chapter provides help in some basic configuration tasks including:

- [“ALOM Configuration Steps” on page 7](#)
- [“Planning Your ALOM Configuration” on page 8](#)
- [“Choosing ALOM Communication Ports” on page 8](#)
- [“Configuring an External Modem” on page 10](#)
- [“Configuration Worksheet” on page 13](#)
- [“Configuring Email Alerts” on page 17](#)
- [“Setting Up ALOM” on page 17](#)

ALOM Configuration Steps

Your ALOM software comes preinstalled on your host server, so it works as soon as you apply power to the server. You can connect a terminal to the serial management port (SERIAL MGT) and immediately start working with ALOM.

However, if you want to customize ALOM for your installation, you must perform some basic tasks.

Here are the tasks you must complete to customize ALOM:

1. Plan how to customize your configuration. Refer to [“Planning Your ALOM Configuration” on page 8](#) for more information.
2. Use the configuration worksheet to record your settings. Refer to [“Configuration Variable Worksheet” on page 14](#).
3. Power on your host server. Refer to [“Powering On Your Host Server” on page 16](#).
4. Run the `setupsc` command. Refer to [“Setting Up ALOM” on page 17](#).

5. Use the configuration variables to customize the ALOM software. See [“To Use Configuration Variables in the ALOM Command Shell”](#) on page 100.

Explanations of the listed tasks follow.

Planning Your ALOM Configuration

ALOM software comes preinstalled on your host server. Follow the directions in this section to reinstall or update ALOM.

Note – Refer to your host server’s documentation to find the location of the serial and Ethernet connections for ALOM.

Before you run the `setupsc` command to set up ALOM, you must decide how you want ALOM to manage your host server. You need to make the following decisions about your configuration:

- Which ALOM communication ports to use. See [“Choosing ALOM Communication Ports”](#) on page 8.
- Whether you want to enable alert messages, and where you want to send them. See [“Configuration Worksheet”](#) on page 13.

Once you make those decisions, print the configuration worksheet shown in [“Configuration Variable Worksheet”](#) on page 14, and use it to record your responses to the `setupsc` command.

Choosing ALOM Communication Ports

The ALOM hardware contains two types of communication ports:

- Serial management port (SERIAL MGT)
- Network management (Ethernet) port (NET MGT)

Both ports give you access to the ALOM command shell. By default ALOM communicates through the SERIAL MGT port at startup.

Note – Refer to your host server’s documentation to find the location of the server’s serial management and network management (Ethernet) connections.

Serial Management Port

You can connect to the ALOM serial management port with an ASCII terminal. This port is not an all-purpose serial port; it can be used to access ALOM and the server console through ALOM. On the Netra server, this port is referred to as the SERIAL MGT port. Refer to your server's documentation for more information.

The serial management port (SERIAL MGT) has a dedicated purpose. It enables ASCII communication between an external terminal and ALOM or the host server. This port takes a standard RJ-45 connector.

The port can only be used with an external terminal or with a terminal emulator, such as a serial connection from a workstation. It is not a general-purpose serial port. However, the Solaris Operating Environment sees this port as `ttya`.

If you want to use a general-purpose serial port with your server, use the regular 7-pin serial port on the back panel of your server. The Solaris operating environment sees this port as `ttyb`. For more information about the server's serial port, refer to your server's documentation.

Make sure that your console serial port is set to the following parameters:

- 9600 baud
- 8 bits
- No parity
- 1 stop bit
- No handshaking

The host server automatically sets these parameters for ALOM when it starts up. The settings are read-only, and cannot be changed from the ALOM `sc>` prompt. To view the settings for the parameters from the `sc>` prompt after you establish an ALOM session, check the serial port variables. Refer to [“Serial Management Port Variables” on page 101](#) for more information.

▼ To Connect to the Serial Port

1. Connect to ALOM.

See [“Connecting to ALOM” on page 33](#) and [“Logging In To Your ALOM Account” on page 33](#) for detailed instructions on establishing an ALOM system controller session.

The ALOM shell prompt (`sc>`) is displayed.

2. To connect to the system console, in the ALOM system controller window type:

```
sc> console
```

3. To return to the ALOM shell prompt (`sc>`) type `#.` (pound period).

Network Management (Ethernet) Port

The 10-Mbyte Ethernet port enables you to access ALOM from within your company network. You can connect to ALOM remotely using any standard Telnet client with TCP/IP (Transmission Control Protocol/Internet Protocol). On the Netra server, the ALOM Ethernet port is referred to as the NET MGT port.

Note – When you connect a terminal device to the NET MGT port, the server must be connected to a 10-Mbit network. ALOM does not support 100-Mbit or 1-Gbit networks.

Refer to your server's documentation for more information.

Configuring an External Modem

If you want to connect to ALOM from an external PC or terminal using a modem, you can connect an external modem to the serial management port (SERIAL MGT). This allows you to run the ALOM software using your remote PC.

However, you can only use the modem for incoming ASCII connections to connect to the serial port to obtain the ALOM command prompt (`sc>`). Outgoing calls from ALOM using a modem are not supported.

Before attaching the modem to the ALOM serial port, set to factory default settings. On many modems, setting the factory default settings is done by using the `AT&F0` command.

Using a Sun Connector

In order to connect the modem to the ALOM serial management port, a specific connector needs to be created or purchased with the specific pinout requirements.

One way to connect a modem to this port is to use a modified RJ-45 to DB-25 connector, Sun part number 530-2889-03, and a crossover RJ-45 to RJ-45 cable. The connector 530-2889-03 is modified by extracting the DB-25 pin in the pin 6 position and inserting it into the pin 8 position.

Creating Your Own Connector

If you want to connect wiring yourself, translate the signals between the RJ-45 and DB-25 according to the information shown in [TABLE 2-1](#):

TABLE 2-1 Signal Translation Between RJ-45 and DB-25 Connectors

RJ-45	DB-25
1 - RTS	5 - CTS
2 - DTR	6 - DSR
3 - TXD	3 - RXD
4 - GND	7 - GND
5 - RXD	7 - GND
6 - RXD	2 - TXD
7 - DCD	8 - DCD
8 - CTS	4 - RTS

[FIGURE 2-1](#) and [TABLE 2-2](#) include information about pin assignments and signal description relevant to an RJ-45 connector.

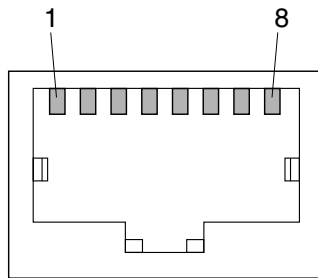


FIGURE 2-1 RJ-45 Connector Pin Locations

TABLE 2-2 Signal Description of an RJ-45 Connector

Pin	Signal Description	Pin	Signal Description
1	Request To Send (RTS)	5	Ground
2	Data Terminal Ready (DTR)	6	Receive Data (RXD)
3	Transmit Data (TXD)	7	Data Carrier Detect (DCD)
4	Ground	8	Clear To Send (CTS)

FIGURE 2-2 and TABLE 2-3 include information about the serial port connector and signals relevant to a DB-25 connector.

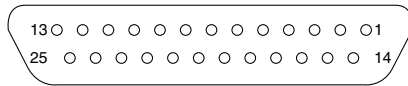


FIGURE 2-2 DB-25 Female Connector Pin Locations

TABLE 2-3 Signal Description of a DB-25 Female Connector

Pin Number	Function	I/O	Signal Description
1	none	none	*
2	TXD_A	O	Transmit Data
3	RXD_A	I	Receive Data
4	RTS_A	O	Ready To Send
5	CTS_A	I	Clear To Send
6	DSR_A	I	Data Set Ready
7	GND		Signal Ground
8	DCD_A	I	Data Carrier Detect
9	none	none	N.C.*
10	none	none	N.C.*
11	DTR_B	O	Data Terminal Ready
12	DCD_B	I	Data Carrier Detect
13	CTS_B	I	Clear To Send
14	TXD_B	O	Transmit Data
15	TRXC_A	I	Transmit Clock
16	RXD_B	I	Receive Data
17	RXD_A	I	Receive Clock
18	RXD_B	I	Receive Clock
19	RTS_B	O	Ready To Send
20	DTR_A	O	Data Terminal Ready
21	none	none	N.C.*
22	none	none	N.C.*

TABLE 2-3 Signal Description of a DB-25 Female Connector (*Continued*)

Pin Number	Function	I/O	Signal Description
23	none	none	N.C.*
24	TXC_A	O	Transmit Clock
25	TXC_B	O	Transmit Clock

* N.C. means “No Connection”

For more information, see [“if_modem” on page 108](#).

Configuration Worksheet

You only need to use this worksheet if you want to customize ALOM for your installation.

To customize ALOM, you use the configuration variables. Refer to [“Using ALOM Configuration Variables” on page 99](#) for details of variables.

There are two ways to set up the configuration variables for ALOM:

- Specify values for the variables during execution of the `setupsc` command. Refer to [“setupsc” on page 70](#).
- Configure each variable individually using the `setsc` command as described in [“setsc” on page 69](#).

Print this section and use the table to record your inputs. This table can also serve as your record of the host server configuration in case you need to reinstall the server software or modify the ALOM settings.

Make sure that your terminal device is connected to ALOM before you customize the ALOM software. [“Choosing ALOM Communication Ports” on page 8](#) details the process. See your host server’s documentation to find the location of the serial and Ethernet connections for ALOM.

Configuration Variable Worksheet

TABLE 2-4 identifies the configuration variables responsible for Ethernet control and their default values. Enter your values in the extreme right column.

TABLE 2-4 Ethernet Variables by Function

Function	Value/Response	Configuration Variable	Default Variable	Your Values
How do you want to control network configuration?	Manually, see "Configuring Your Network Manually" on page 16.			
	Using DHCP, see "Configuring Your Network Using DHCP" on page 15.			
IP (Internet Protocol) address for ALOM		netsc_ipaddr, see "netsc_ipaddr" on page 115.	0.0.0.0	
IP address for the subnet mask		netsc_ipnetmask see "netsc_ipnetmask" on page 117.	255.255.255.0	
IP address for the default gateway to use when the destination is not on the same subnet as ALOM		netsc_ipgateway, see "netsc_ipgateway" on page 116.	0.0.0.0	
Do you want ALOM to send alerts by email?		mgt_mailalert, see "mgt_mailalert" on page 109.	[]	
Email address(es) to use for sending alerts (maximum of two mail servers supported)				The default has no email addresses configured
IP address for your SMTP (Simple Mail Transfer Protocol) mail server (maximum of two mail servers supported)		mgt_mailhost see "mgt_mailhost" on page 112.	0.0.0.0	

Note – You can also set up user accounts manually.

Related Information

- About ALOM configuration variables, see [“Using ALOM Configuration Variables” on page 99](#)
- [“userpassword” on page 93](#)

Configuring Your Network Using DHCP

There are two ways to configure DHCP (Dynamic Host Configuration Protocol) for ALOM:

- Using the `setupsc` script ([“setupsc” on page 70](#)) to set the `netsc_dhcp` variable, as described in [“netsc_dhcp” on page 114](#).
- Using the `setsc` command ([“setsc” on page 69](#)) to set the value of the `netsc_dhcp` variable to `true` (enable DHCP), described in [“netsc_dhcp” on page 114](#).

Note – It is a best practice to set the ALOM device name associated with the IP (Internet Protocol) address in name server maps (network information service [NIS] or domain name system [DNS]) to be the name of the host server with `-sc` appended to it. For example, if your host server’s name is `bert`, the ALOM device name is `bert-sc`.

If you use DHCP to control your network configuration, configure the DHCP server to assign a fixed IP address to ALOM.

Configuring Your Network Manually

There are two ways to manually configure the network for ALOM:

- Using the `setupsc` script to set the network configuration variables all at once
- Using the `setsc` command to set the values of each network configuration variable individually.

If you set each variable individually, you need to set the following variables:

- [“if_network” on page 107](#)
- [“netsc_ipaddr” on page 115](#)
- [“netsc_ipnetmask” on page 117](#)
- [“netsc_ipgateway” on page 116](#)

Note – It is a best practice to set the ALOM device name associated with the IP (Internet Protocol) address in name server maps (NIS or DNS) to be the name of the host server with `-sc` appended to it. For example, if your host server’s name is `bert`, the ALOM device name is `bert-sc`.

Powering On Your Host Server

Refer to your host server documentation for information about how to power on the system.

As soon as power is applied to the host, the SER MGT port connects to the host server's console stream. To switch to ALOM, type `#.` (pound-period). At startup, ALOM has one pre-configured administrator account `admin`.

When you switch to ALOM from the console stream, you are prompted to create a password for this account. Refer to the `password` command section in [“password” on page 57](#) on for a description of acceptable passwords.

The default `admin` account has full ALOM user permissions (`aucr`). For more on permissions refer to [See “userperm” on page 94.](#) You can use this account to view the console output from the host, to set up other user accounts and passwords, and to configure ALOM.

Related Information

- [“sc_powerstatememory” on page 126](#)

Configuring Email Alerts

To send email alerts, the ALOMEthernet port must be enabled, (see [“Network Management \(Ethernet\) Port” on page 10](#)).

When a problem occurs on a host server, ALOM sends an alert message to all users who are logged in to ALOM accounts on that host. In addition, you can configure ALOM to send alerts by email to users who are not logged in. When a user receives an alert, that user can connect to the ALOM account for that host server and address the alert condition.

Setting Up Email Alerts

The ALOM software allows you to set up to eight unique email addresses to receive alerts. You can configure each email address to receive its own severity level of alerts (critical, major, or minor). Refer to [“Sending Customized Alerts” on page 32](#).

Setting Up ALOM

After you have finished planning your configuration, run the `setupsc` command described on [“setupsc” on page 70](#). Follow the prompts on the screen to customize the ALOM software for your installation.

Note – You do not have to customize the ALOM software before you can use it. The ALOM software works as soon as you connect power to the server.

The `setupsc` command runs a script that steps you through each ALOM function that you can customize. Each function is associated with one or more configuration variables. For more on configuration variables, refer to [Chapter 5](#). To configure a function, type **y** when the `setupsc` script prompts you to do so. To skip a function, type **n**.

If you later need to change a setting, run the `setsc` command as described on [“Command Options” on page 69](#).

Customize the ALOM Software

The `setupsc` script enables you to set up a number of configuration variables at once. See [“Related Information” on page 100](#) for more information. If you want to change one or more configuration variables without running the `setupsc` script, use the `setsc` command as shown on [“To Use the setsc Command” on page 69](#).

Related Information

- [“ALOM Shell Commands” on page 40](#).
- [“Configuration Worksheet” on page 13](#).
- [“ALOM Configuration Steps” on page 7](#).
- [“Overview of the scadm Utility” on page 139](#).

Common ALOM Tasks

Once you have logged in to ALOM as admin and specified the admin password, you might want to perform some common administrative tasks:

- [“Resetting ALOM” on page 20](#)
- [“Switching Between the System Console and ALOM” on page 20](#)
- [“Controlling the Locator LED” on page 21](#)
- [“Resetting the Host Server” on page 21](#)
- [“Viewing Environmental Information About the Server” on page 22](#)
- [“Reconfiguring ALOM to Use the Ethernet \(NET MGT\) Port” on page 22](#)
- [“Adding ALOM User Accounts” on page 26](#)
- [“Removing ALOM User Accounts” on page 29](#)
- [“Changing the Password on Your Account or Another User’s Account” on page 30](#)
- [“Sending and Receiving Alert Messages” on page 31](#)
- [“Connecting to ALOM” on page 33](#)
- [“Logging In To Your ALOM Account” on page 33](#)
- [“Creating a Script to Send Alerts From ALOM” on page 35](#)
- [“Redirecting the System Console From ALOM to Other Devices” on page 36](#)
- [“Backing Up Your ALOM Configuration” on page 38](#)
- [“Displaying Your ALOM Version” on page 38](#)

Resetting ALOM

Resetting ALOM reboots the ALOM software. Reset ALOM after you have changed settings on ALOM, such as specifying a new value for a configuration variable. Reset ALOM from the system console if ALOM stops responding for any reason.

There are two ways to reset ALOM:

- At the `sc>` prompt, type the `resetsc` command. Refer to [“resetsc” on page 63](#).
- At the superuser (`#`) prompt in the system console, type the `scadm resetsc` command. Refer to [“scadm resetsc” on page 149](#).

Switching Between the System Console and ALOM

- To switch from the console output to the ALOM `sc>` prompt, type `#.` (pound period).
- To switch from the `sc>` prompt to the console, type `console`.

Note – The `#.` (pound-period) character sequence is the default escape character sequence for ALOM. If desired, you can change the first character in the escape sequence by using the `sc_escapechars` variable. For example: `sc> setsc sc_escapechars a.` Refer to [“sc_escapechars” on page 124](#) for more information.

To temporarily redirect the system console output to the serial management port by resetting the IDPROM variables, refer to the administration guide that came with your system.

Controlling the Locator LED

If your host server has a front panel Locator LED, you can use ALOM to turn the LED on and off and to check the state of the LED. If your host server does not have a Locator LED, this command will not work.

- To turn the LED on and off use the `setlocator` command. For more information refer to [“setlocator” on page 68](#).
- To check the state of the LED, use the `showlocator` command. For more information refer to [“showlocator” on page 83](#).

Resetting the Host Server

There are four ways to reset the host server from the `sc>` prompt:

- To perform a graceful reset of the server, type the `poweroff` command, followed by the `poweron` command. A graceful reset enables the Solaris operating environment to shut down. If you type the `poweroff` command without typing the `poweron` command, ALOM powers the host server down to standby mode. Refer to [“poweroff” on page 58](#) and [“poweron” on page 59](#).
- To force the server to shut down regardless of the state of the host server, type the `poweroff -f` command, followed by the `poweron` command. This resets the host server immediately, even if the Solaris operating environment fails or hangs for any reason. Note that this is not a graceful shutdown, and work might be lost.
- To reset the server immediately without a graceful shutdown, type the `reset` command. The `reset -x` option generates the equivalent of an XIR (externally initiated reset). Refer to [“reset” on page 62](#).
- To immediately bring the server to the OpenBoot PROM prompt (`ok`), type the `break` command. Refer to [“break” on page 47](#).

Note – After you issue the command `poweroff` or `poweroff -f`, ALOM returns the following message:

```
SC Alert: Host system has shut down.
```

Wait until you see the message before issuing the `poweron` command.

Viewing Environmental Information About the Server

This section discusses displaying and monitoring the server's environmental status.

▼ To Use the `showenvironment` Command

The `showenvironment` command displays a snapshot of the server's environmental status. The information this command can display includes system temperatures, hard disk drive status, power supply and fan status, front panel LED status, rotary switch position, voltage and current sensors, alarm status, and so on. The output uses a format similar to the UNIX command `prtdiag (1m)`.

Note – You do not need user permissions to use this command.

- To use the `showenvironment` command, at the `sc>` prompt, type:

```
sc> showenvironment
```

The display output differs according to your host server's model and configuration. Some environmental information might not be available when the server is in standby mode. See [“showenvironment” on page 73](#).

Reconfiguring ALOM to Use the Ethernet (NET MGT) Port

By default, ALOM uses the serial management port (SERIAL MGT) to communicate with an external terminal or other ASCII device. If desired, you can reconfigure ALOM to use the Ethernet network management (NET MGT) port, and then you can connect to ALOM through `telnet`.

The NET MGT port accommodates a standard RJ-45 connector. For information about how to establish the hardware connections between the NET MGT port and your network, refer to your server's documentation.

Note – When you connect a terminal device to the NET MGT port, the server must be connected to a 10- Mbit network. ALOM does not support 100-Mbit or 1-Gbit networks.

To configure the ALOM software to communicate using the NET MGT port, you need to specify values for the network interface variables. See [“Network Interface Variables” on page 101](#).

There are three ways to specify values for these variables:

- Run the `setupsc` script from the `sc>` prompt. Refer to [“setupsc” on page 70](#).
- Set values for each individual variable from the `sc>` prompt using the `setsc` command. Refer to [“setsc” on page 69](#)
- Set values for each individual variable from the system console using the `scadm set` command. Refer to [“scadm set” on page 151](#).

▼ To Run the `setupsc` Script

1. To run the `setupsc` script, at the `sc>` prompt type **`setupsc`**:

```
sc> setupsc
```

The setup script starts.

2. To exit the script, do one of the following:
 - To exit the script and save the changes you have made, type Ctrl-Z.
 - To exit the script without saving any changes, type Ctrl-C.

For example, the script starts as follows:

```
sc> setupsc  
Entering interactive script mode. To exit and discard changes to  
that point, use Ctrl-C or to exit and save changes to that point,  
use Ctrl- Z.
```

If desired, you can customize all of the ALOM configuration variables at once by following the interactive questions in the script. Refer to [“Overview of the ALOM Configuration Variables” on page 99](#). To configure only the network interface variables, press Return at each prompt until the following prompt is displayed:

```
Do you wish to configure the enabled interfaces [y]?
```

See [“Network Interface Variables” on page 101](#) for further details.

▼ To Configure the Network Interface Variables

1. At the `sc>` prompt, type `y` to confirm that you want to configure the network interface variables.

The `setupsc` script returns the following prompt:

```
Should the SC network interface be enabled?
```

2. Type `true` or press **Return** to enable the network interface, or type `false` to disable it.

This sets a value for the `if_network` variable. See [“if_network” on page 107](#).

3. Follow the interactive questions in the script. The script prompts you to set values for the following variables:

- `if_modem` (specify `false`) – see [“if_modem” on page 108](#)
- `netsc_dhcp` – see [“netsc_dhcp” on page 114](#)
- `netsc_ipaddr` – see [“netsc_ipaddr” on page 115](#)
- `netsc_ipnetmask` – see [“netsc_ipaddr” on page 115](#)
- `netsc_ipgateway` – see [“netsc_ipgateway” on page 116](#)
- `netsc_tpelinktest` – see [“netsc_tpelinktest” on page 118](#)

4. When you have finished setting up the network interface variables, type **Ctrl-Z** to save your changes and exit the `setupsc` script.

If desired, you can finish configuring all of the ALOM configuration variables.

Before you can use your network configuration, you must reset ALOM. You can do this in one of two ways:

- At the `sc>` prompt, type the `resetsc` command. See [“resetsc” on page 63](#).
- At the superuser prompt in the system console, type the `scadm resetsc` command. See [“scadm resetsc” on page 149](#).

Using the `setsc` Command to Set the Network Interface Variables

You can set values for the network interface variables from the `sc>` prompt using the `setsc` command. You issue the command once for each variable you would like to configure. For example:

```
sc> setsc if_network true  
sc> setsc netsc_ipaddr 123.123.123.123
```

Specify values (or use the default values) for each of the following variables:

- `if_network` – see [“if_network” on page 107](#)
- `if_modem` – see [“if_modem” on page 108](#)
- `netsc_dhcp` – see [“netsc_dhcp” on page 114](#)
- `netsc_ipaddr` – see [“netsc_ipaddr” on page 115](#)
- `netsc_ipnetmask` – see [“netsc_ipnetmask” on page 117](#)
- `netsc_ipgateway` – see [“netsc_ipgateway” on page 116](#)
- `netsc_tpelinktest` – see [“netsc_tpelinktest” on page 118](#)

Using the `scadm set` Command to Set the Network Interface Variables

You can set values for the network interface variables from the superuser (`#`) prompt in the system console using the `scadm set` command. You issue the command once for each variable you would like to configure. For example:

```
# scadm set if_network true  
# scadm set netsc_ipaddr 123.123.123.123
```

Specify values (or use the default values) for each of the following variables:

- `if_network` – see [“if_network” on page 107](#)
- `if_modem` – see [“if_modem” on page 108](#)
- `netsc_dhcp` – see [“netsc_dhcp” on page 114](#)
- `netsc_ipaddr` – see [“netsc_ipaddr” on page 115](#)
- `netsc_ipnetmask` – see [“netsc_ipnetmask” on page 117](#)
- `netsc_ipgateway` – see [“netsc_ipgateway” on page 116](#)
- `netsc_tpelinktest` – see [“netsc_tpelinktest” on page 118](#)

For more information, see [“Overview of the ALOM Configuration Variables” on page 99](#).

Adding ALOM User Accounts

There are two ways to add ALOM user accounts:

- From the `sc>` prompt in the ALOM command shell as shown here.
- From the system console as shown in [“To Add an ALOM User Account Using the `scadm` Utility” on page 27](#).

You can add a maximum of 15 unique user accounts to ALOM.

▼ To Add an ALOM User Account From the `sc>` Prompt

1. **At the `sc>` prompt, type the `useradd` command, followed by the user name you want to assign to that user.**

For example:

```
sc> useradd joeuser
```

See [“`useradd`” on page 91](#).

2. **To assign a password to the account, type the `userpassword` command, followed by the user name you assigned to the account.**

For more on the `userpassword` command, refer to [“`userpassword`” on page 93](#). ALOM prompts you to specify the password, and to verify the password. Note that ALOM does not echo the password to the screen. For example:

```
sc> userpassword joeuser
New password:
Re-enter new password:
```

Note – User passwords have certain restrictions. Make sure that the password you assign observes these restrictions. See [“Password Restrictions” on page 58](#).

3. To assign permissions to the account, type the `userperm` command, followed by the user name you assigned to the account and the permission levels you want that user to have.

For example:

```
sc> userperm joeuser cr
```

You can also view the permission and password status for a single ALOM user, or view information for all ALOM user accounts.

- To view the permission and password status for a single ALOM user, at the `sc>` prompt, type the `usershow` command, followed by the assigned user name.

For example:

```
sc> usershow joeuser
Username          Permissions      Password?
joeuser           --cr            Assigned
```

See [“usershow” on page 96](#).

- To see the list of ALOM user accounts, permissions, and password status information, at the `sc>` prompt, type `usershow`.

For example:

```
sc> usershow
Username          Permissions      Password?
admin             cuar            Assigned
wwilson          --cr            none
joeuser           --cr            Assigned
```

▼ To Add an ALOM User Account Using the `scadm` Utility

To add and configure an ALOM user account from the system console, use the `scadm` utility. Perform the following steps:

1. Log in to the system console as root.

2. At the # prompt, type the `scadm useradd` command, followed by the user name you want to assign to that user.

For example:

```
# scadm useradd joeuser
```

3. To assign a password to the account, type the `scadm userpassword` command, followed by the user name you assigned to the account.

The system prompts you to specify the password, and to verify the password. Note that the system does not echo the password to the screen. For example:

```
# scadm userpassword joeuser
New password:
Re-enter new password:
```

Note – User passwords have certain restrictions. Make sure that the password you assign observes these restrictions. Refer to [“Password Restrictions” on page 58](#).

4. To assign permissions to the account, type the `userperm` command, followed by the user name you assigned to the account and the permission levels you want that user to have.

For example:

```
# scadm userperm joeuser cr
```

See [“scadm userperm” on page 158](#), and [“Password Restrictions” on page 58](#).

You can also view the permission and password status for a single ALOM user, or view information for all ALOM user accounts.

- To view the permission and password status for a single ALOM user, at the # prompt, type the `scadm usershow` command, followed by the assigned user name.

For example:

```
# scadm usershow joeuser
Username           Permissions           Password?
joeuser            --cr                  Assigned
```

See [“usershow” on page 96](#).

- To see the list of ALOM user accounts, permissions, and password status information, at the # prompt, type **scadm usershow**.

For example:

```
# scadm usershow
```

Username	Permissions	Password?
admin	cuar	Assigned
wwilson	--cr	none
joeuser	--cr	Assigned

Removing ALOM User Accounts

There are two ways to remove ALOM user accounts:

- From the `sc>` prompt in the ALOM command shell as shown here
- From the system console using the `scadm` utility

Note – You cannot delete the default admin account from ALOM.

▼ To Remove an ALOM User Account From the `sc>` Prompt

To remove an ALOM user account from the `sc>` prompt, perform the following step:

- **At the `sc>` prompt, type the `userdel` command, followed by the user name of the account you want to delete.**

For example:

```
sc> userdel joeuser  
Are you sure you want to delete user <joeuser> [y/n]? y  
sc>
```

▼ To Remove an ALOM User Account Using the `scadm` Utility

To remove an ALOM user account from the system console, use the `scadm` utility. Perform the following steps:

1. Log in to the system console as root.
2. At the `#` prompt, type the `scadm userdel` command, followed by the user name of the account you want to delete.

For example:

```
# scadm userdel joeuser  
Are you sure you want to delete user <joeuser> [y/n]? y  
#
```

Changing the Password on Your Account or Another User's Account

You can change your own password, or that of another user by following these steps:

▼ To Change Your ALOM Password

You can change your own ALOM account password from the `sc>` prompt. You do not need to have any permissions to change your own password.

- At the `sc>` prompt, type the following command:

```
sc> password
```


When you use this command, ALOM prompts you for your current password. If you enter the password correctly, it prompts you twice to enter the new password. For example:

```
sc> password
password: Changing password for username
Enter current password: *****
Enter new password: *****
Re-enter new password: *****
sc>
```

▼ To Change the ALOM Password for Another User

Note – You must have u level user permission to change another user’s password. See [“Permission Levels” on page 158](#).

There are two ways to change the password for another user’s ALOM account:

- At the `sc>` prompt, use the `userpassword` command. See [“userpassword” on page 93](#).
- At the `#` (superuser) prompt in the system console, use the `scadm userpassword` command. See [“scadm userpassword” on page 157](#).

Sending and Receiving Alert Messages

You can customize ALOM to send email alerts to all users logged in to ALOM at the time an event occurs. You can specify which levels (critical, major, minor) of email alerts are sent to each user, and you can send customized event messages as emails to each user. See [“scadm send_event” on page 150](#).

The ALOM software enables you to send and receive alerts, directly or using a script. In addition, there are three levels of alerts:

- Critical
- Major
- Minor

Note – You can configure email alerts for up to eight users. You can configure each email address to receive its own severity level of alert.

▼ To Set Up Email Alerts

1. **Make sure that ALOM is set up to use the Ethernet network management port (NET MGT), and that the network interface variables are configured.**
See [“Reconfiguring ALOM to Use the Ethernet \(NET MGT\) Port” on page 22.](#)
2. **Set the `if_emailalerts` variable to `true`.**
See [“`if_emailalerts`” on page 105](#)
3. **Set values for the `mgt_mailhost` variable to identify one or two mail hosts on the network.**
See [“`mgt_mailhost`” on page 112.](#)
4. **Set values for the `mgt_mailalert` variable to specify email addresses and alert levels for each user.**
See [“`mgt_mailalert`” on page 109.](#)

Sending Customized Alerts

To send customized alerts, use the `scadm` command `send_event -c`. You can do this in two ways:

- Send the alert immediately from the superuser prompt. See [“Overview of the `scadm` Utility” on page 139](#) for more information.
- Create a script (command file) that sends the alert under special circumstances. See [“`sys_hostname`” on page 135](#) for more information. Refer also to [“`scadm send_event`” on page 150](#), and [“Creating a Script to Send Alerts From ALOM” on page 35](#) for details.

Receiving Alerts From ALOM

If you are using the ALOM command shell and are not connected to the host server’s console, you will receive alert messages from ALOM when it detects a major-level or critical-level event. This can happen while you are typing ALOM commands. If this happens, press Return and retype the command.

For example:

```
sc> cons
MAJOR: Fan1 Faulty
sc> console
```

ALOM generates alert messages in the following format:

\$HOSTID \$EVENT \$TIME \$CUSTOMERINFO \$HOSTNAME *message*

- For \$CUSTOMERINFO details, see [“sc_customerinfo” on page 124](#).
- For \$HOSTNAME details, see [“sys_hostname” on page 135](#).

Connecting to ALOM

Here are several ways to connect to ALOM:

- Connect an ASCII terminal directly to the SERIAL MGT port. See [“Serial Management Port” on page 9](#).
- Use the `telnet` command to connect to ALOM through the Ethernet connection attached to the NET MGT port. See [“Reconfiguring ALOM to Use the Ethernet \(NET MGT\) Port” on page 22](#).
- Connect an external modem to the SERIAL MGT port and dial in to the modem. Note that this port does not support outgoing calls to the external modem. See [“Configuring an External Modem” on page 10](#).
- Connect a port on a terminal server to the SERIAL MGT port, and then use the `telnet` command to connect to the terminal server.

Logging In To Your ALOM Account

Make sure that you have established your hardware connections to the ALOM port(s) you plan to use. On the Netra server, the Ethernet port is labeled NET MGT. The serial port is labeled SERIAL MGT. Refer to your server’s Installation Guide for more information about these ports and how to connect devices to them.

When you connect to ALOM for the first time, you are automatically connected as the `admin` account. This account has full (`cuar`) permissions. Before you can continue using ALOM, you need to specify a password for this account. After you

specify the password, you can continue using ALOM. The next time you log in, you must specify the password. When you are logged in as `admin`, you can add new users and specify passwords and permissions for them.

Refer to [“Permission Levels” on page 158](#), [“useradd” on page 91](#), [“userpassword” on page 93](#), and [“userperm” on page 94](#) for more information about this process.

▼ To Log In To ALOM

All users (`admin` and other users) employ the following procedure to log in to ALOM.

- 1. Connect to ALOM.**

See [“Connecting to ALOM” on page 33](#).

- 2. When the connection is established, type #. (pound-period) to escape from the system console.**

- 3. Type in your ALOM login name and password.**

Your password is not echoed to the screen; instead, the host server displays an asterisk (*) for each character that you type. After you successfully log in, ALOM displays its command prompt:

```
sc>
```

You can now use ALOM commands or switch to the system console. See [“Overview of the ALOM Command Shell” on page 39](#) and [“Serial Management Port” on page 9](#).

The ALOM event log records login information. If more than five login failures occur within five minutes, ALOM generates a critical event. See [“showlogs” on page 84](#).

Related Information

- [“Choosing ALOM Communication Ports” on page 8](#)
- [“Serial Management Port” on page 9](#)

Creating a Script to Send Alerts From ALOM

You can embed the `scadm send_event` command within a script to log an ALOM event or to send an alert when certain conditions occur. Use the `-c` option to send a custom critical alert. See “[scadm send_event](#)” on page 150 for details.

This example shows a Perl script file named `dmon.pl` that sends an ALOM alert when a specified disk partition exceeds a specified percent of its capacity.

Note – This script is written for the Netra host server. Use the `uname -i` command to obtain the platform name for your host server and replace the `SUNW,Netra x40` string in the example.

To use this script as intended, submit a separate entry to the `crontab` utility for each disk partition you want to monitor. Refer to the `crontab(1)` man page for more information.

CODE EXAMPLE 3-1 Sample Script for `send_event`

```
#!/usr/bin/perl
# Disk Monitor
# USAGE: dmon <mount> <percent>
# e.g.: dmon /usr 80
@notify_cmd = '/usr/platform/SUNW,Netra x40/sbin/scadm';
if (scalar(@ARGV) != 2)
{
print STDERR "USAGE: dmon.pl <mount_point> <percentage>\n";
print STDERR " e.g. dmon.pl /export/home 80\n\n";
exit;
}
open(DF, "df -k|");
$title = <DF>;
$found = 0;
while ($fields = <DF>)
{
chop($fields);
($fs, $size, $used, $avail, $capacity, $mount) = split(' ', $fields);
if ($ARGV[0] eq $mount)
{
$found = 1;
if ($capacity > $ARGV[1])
```

CODE EXAMPLE 3-1 Sample Script for send_event (Continued)

```
{
print STDERR "ALERT: '", $mount, "\" is at ", $capacity,\
    " of capacity, sending notification\n";
$notify_msg = 'mount point "\.$mount.'" is at \. $capacity.' of capacity';
exec (@notify_cmd, 'send_event', '-c', $notify_msg) || die "ERROR: $!\n";
}
}
}
if ($found != 1)
{
print STDERR "ERROR: '", $ARGV[0],
    "\" is not a valid mount point\n\n";
}
close(DF);
```

Redirecting the System Console From ALOM to Other Devices

When you first start apply power to the host server, ALOM is initially configured to display the system console output. The SER MGT port is shown on the host server as `ttya`.

If desired, you can use other devices to access the system console besides the terminal connected to the serial management port. You can also use the general-purpose port (`ttyb`) on the back panel of your host server. This port is labeled as 10101. Refer to your server's documentation for more information.

▼ To Redirect the System Console

To redirect the output from the system console to `ttyb`, perform the following steps:

1. **At the ALOM `sc>` prompt, type the `break` command to bring the host server to the OpenBoot™ PROM prompt (ok).**

(If you have the `kadb` debugger configured, type `$#` to exit `kadb` first.) See [“break” on page 47](#) for more on that command.

2. At the `sc>` prompt, type the `console` command to access the server's system console.

```
sc> console
ok
```

This command is covered on [page 48](#).

3. At the `ok` prompt, type the following commands:

```
ok setenv input-device ttyb
ok setenv output-device ttyb
```

4. To cause these changes to take effect immediately, type `reset-all` at the `ok` prompt.

Otherwise, these changes take effect the next time you cycle the power on the host server.

These changes remain in effect until you manually change the OpenBoot PROM settings back to ALOM (`ttya`) as described in the following section.

▼ To Reset the Default Console Back to ALOM (`ttya`)

1. Type the following commands at the `ok` prompt:

```
ok setenv input-device ttya
ok setenv output-device ttya
```

2. To cause these changes to take effect immediately, type `reset-all` at the `ok` prompt.

Otherwise, these changes take effect the next time you cycle the power on the host server.

Backing Up Your ALOM Configuration

You should periodically create a backup file on a remote system that records ALOM configuration settings. Refer to [“Overview of the `scadm` Utility” on page 139](#) for a summary of the utility. The following commands show how to copy information using `scadm` commands to backup a file named *remote-filename*.

Note – Before you can use these commands, you must set your path to the `scadm` utility. See [“To Set Your Path to the `scadm` Utility” on page 140](#).

```
# scadm show > remote-filename
# scadm usershow > remote-filename
#
```

Use a meaningful file name that includes the name of the server that ALOM controls. Later, you can refer to this file to restore the settings, if necessary.

Displaying Your ALOM Version

The `showsc` command displays information about the ALOM software configuration.

For example, to display the ALOM version, type the following at the `sc>` prompt:

```
sc> showsc version
Advanced Lights Out Manager v1.4
```

For more details, see [“To Use the `showsc` Command” on page 88](#).

Using the ALOM Command Shell

This chapter contains the following sections:

- [“Overview of the ALOM Command Shell” on page 39](#)
- [“ALOM Shell Commands” on page 40](#)
- [“Descriptions of ALOM Shell Commands” on page 44](#)

Overview of the ALOM Command Shell

The ALOM command shell is a simple command-line interface. Through the ALOM command shell, you can administer, diagnose, or control the host server, and you can configure and manage ALOM.

You are in the ALOM command shell when you see the `sc>` prompt. ALOM supports a total of four concurrent Telnet sessions and one serial session per server. This means that you can run five command shell operations at once.

After you log in to your ALOM account, the ALOM shell prompt (`sc>`) appears, and you can enter ALOM shell commands. See [“Logging In To Your ALOM Account” on page 33](#) and [“ALOM Shell Commands” on page 40](#) for assistance.

Note – Some of these commands are also available through the `scadm` utility. See [“Overview of the `scadm` Utility” on page 139](#), and [“List of `scadm` Commands” on page 141](#).

▼ Entering Command Options

If the command you want to use has multiple options, you can either enter the options individually or grouped together, as shown in this example. These two commands are identical.

```
sc> poweroff -f -y
sc> poweroff -fy
```

Related Information

- [“ALOM Shell Error Messages” on page 168](#)
- [“Logging In To Your ALOM Account” on page 33](#)
- [“Sending Customized Alerts” on page 32](#)

ALOM Shell Commands

The following table lists the ALOM shell commands and briefly describes what these commands do.

TABLE 4-1 List of ALOM Shell Commands by Function

CLI Command	Summary	For Full Description, See:
Configuration Commands		
password	Changes the login password of the current user.	“password” on page 57.
setdate	Sets the date and time, when the managed operating system is not running.	“setdate” on page 65
setdefaults [-y] [- a]	Resets all ALOM configuration parameters to their default values. The -y option enables you to skip the confirmation question. The -a option resets the user information to the factory default (one admin account only).	“setdefaults” on page 67
setsc	Sets the specified ALOM parameter to the assigned value.	“setsc” on page 69
setupsc	Runs the interactive configuration script. This script configures the ALOM configuration variables.	“setupsc” on page 70

TABLE 4-1 List of ALOM Shell Commands by Function (*Continued*)

CLI Command	Summary	For Full Description, See:
<code>showplatform [-v]</code>	Displays information about the host system's hardware configuration, and whether the hardware is providing service. The <code>-v</code> option displays verbose information about the displayed component(s).	"showplatform" on page 87
<code>showfru</code>	Displays information about the FRUs (field-replaceable units) in a host server.	"showfru" on page 78
<code>showusers [-g]</code>	Displays a list of users currently logged in to ALOM. The display for this command has a similar format to that of the UNIX command <code>who</code> . The <code>-g</code> option pauses the display after the number of lines you specify for <i>lines</i> .	"showusers" on page 90
<code>showsc [-v]</code>	Displays the current NVRAM configuration parameters. The <code>-v</code> option is needed for full version information.	"showsc" on page 88
<code>showdate</code>	Displays the ALOM set date. The Solaris Operating Environment and ALOM time are synchronized, but ALOM time is expressed in UTC (Coordinated Universal Time) rather than local time.	"showdate" on page 72
<code>usershow</code>	Displays a list of all user accounts, permission levels, and whether passwords are assigned.	"usershow" on page 96
<code>useradd</code>	Adds a user account to ALOM.	"useradd" on page 91
<code>userdel [-y]</code>	Deletes a user account from ALOM. The <code>-y</code> option enables you to skip the confirmation question.	"userdel" on page 92
<code>userpassword</code>	Sets or changes a user password.	"userpassword" on page 93
<code>userperm</code>	Sets the permission level for a user account.	"userperm" on page 94
Log Commands		
<code>showlogs [-v]</code>	Displays the history of all events logged in the ALOM event buffer.	"showlogs" on page 84
<code>consolehistory [-v]</code> <code>[boot run]</code>	Displays the host server console output buffers. The <code>-v</code> option displays the entire contents of the specified log.	"consolehistory" on page 51

TABLE 4-1 List of ALOM Shell Commands by Function (*Continued*)

CLI Command	Summary	For Full Description, See:
Status and Control Commands		
<code>showenvironment</code>	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, and rotary switch position.	“showenvironment” on page 73
<code>shownetwork [-v]</code>	Displays the current network configuration information. The <code>-v</code> option shows additional information about your network, including information about your DHCP server.	“shownetwork” on page 86
<code>console [-f]</code>	Connects to the host system console. The <code>-f</code> option forces the console write lock from one user to another.	“console” on page 48
<code>break [-y]</code>	Drops the host server from running the Solaris Operating Environment into OpenBoot PROM or kadb.	“break” on page 47
<code>bootmode [skipdiag diag reset_nvram normal bootscript="<i>string</i>"]</code>	Controls the host server OpenBoot PROM firmware method of booting.	“bootmode” on page 44
<code>flashupdate</code>	Updates the ALOM firmware. This command downloads main and bootmon firmware images to ALOM.	“flashupdate” on page 52
<code>reset[-y] [-x]</code>	Generates a hardware reset on the host server. The <code>-x</code> option generates an XIR (externally initiated reset). The <code>-y</code> option enables you to skip the confirmation question.	“reset” on page 62
<code>poweroff [-y] [-f]</code>	Removes the main power from the host server. The <code>-y</code> option enables you to skip the confirmation question. The <code>-f</code> option forces an immediate shutdown.	“poweroff” on page 58
<code>poweron</code>	Applies the main power to the host server or FRU.	“poweron” on page 59
<code>setalarm [critical major minor user] [on off]</code>	Turns the alarm and associated LED on and off.	“setalarm” on page 64
<code>setlocator [on/off]</code>	Turns the Locator LED on the server on or off. This function is available only on host server that have Locator LEDs.	“setlocator” on page 68

TABLE 4-1 List of ALOM Shell Commands by Function (*Continued*)

CLI Command	Summary	For Full Description, See:
showlocator	Displays the current state of the Locator LED as either on or off. This function is available only on host servers that have Locator LEDs.	“showlocator” on page 83
FRU Commands		
showfru	Displays information about the FRUs (field-replaceable units) in a host server.	“showfru” on page 78
removefru [-y] [FRU]	Prepares a FRU (for example, a power supply) for removal, and illuminates the host system’s OK-to-Remove indicator light. The <code>-y</code> option enables you to skip the confirmation question.	“removefru” on page 61
Other Commands		
help	Displays a list of all ALOM commands with their syntax and a brief description of how each command works.	“help” on page 55
resetsc [-y]	Reboots ALOM. The <code>-y</code> option enables you to skip the confirmation question.	“resetsc” on page 63
showlogs [-v]	Displays the history of all events logged in the ALOM event buffer.	“showlogs” on page 84
showdate	Displays the ALOM set date. The Solaris Operating Environment and ALOM time are synchronized, but ALOM time is expressed in UTC (Coordinated Universal Time) rather than local time.	“showdate” on page 72
usershow	Displays a list of all user accounts, permission levels, and whether passwords are assigned.	“usershow” on page 96
useradd	Adds a user account to ALOM.	“useradd” on page 91
userdel [-y]	Deletes a user account from ALOM. The <code>-y</code> option enables you to skip the confirmation question.	“userdel” on page 92
userpassword	Sets or changes a user password.	“userpassword” on page 93
userperm	Sets the permission level for a user account.	“userperm” on page 94
logout	Logs out from an ALOM shell session.	“logout” on page 56

Related Information

- [“Using ALOM Configuration Variables” on page 99](#)
- [“Overview of the scadm Utility” on page 139](#)

Descriptions of ALOM Shell Commands

The following pages provide full descriptions of the ALOM shell commands in alphabetic order.

bootmode

Use the `bootmode` command to control the behavior of the host server's firmware while the host server is initializing or after you reset the server.

The `bootmode` setting overrides the server's OpenBoot PROM Diagnostics `diagswitch?`, `post-trigger`, and `obdiag-trigger` settings immediately after the next server reset. If ALOM does not detect a server reset after 10 minutes, ALOM ignores the command and then clears the `bootmode` setting and returns to `normal`.

The `bootmode reset_nvram` command option sets the OpenBoot NVRAM (non-volatile read-only memory) variables to default settings. The `diag-switch?` default does not take effect until the next server reset. This is because OpenBoot has previously taken a snapshot of the `diag` node of the system. This snapshot consists of rotary switch position, `diag-switch?` value, and `bootmode diag/skip_diag` overrides. Once the `diag` node is set, it remains in effect until the next server reset.

- If `diag-switch?` is set to `true`, OpenBoot uses the default `diag-device` as the boot device.
- If `diag-switch?` is set to `false`, OpenBoot uses the default `boot-device` as the boot device.

▼ To Use the `bootmode` Command

Note – You must have `r` level user permission to use this command. Refer to [“userperm” on page 94](#) for more information.

All `bootmode` command options require that you reset the host server within 10 minutes after issuing the command. If you do not issue the `poweroff` and `poweron` commands or the `reset` command within 10 minutes, the host server ignores the `bootmode` command and changes the `bootmode` setting back to `normal`. Refer to [“poweroff” on page 58](#), [“poweron” on page 59](#), and [“reset” on page 62](#) for more information.

1. At the `sc>` prompt, type the following command:

```
sc>bootmode option(s)
```

Where *option(s)* is the desired option, if any (`skip_diag`, `diag`, `reset_nvram`, `normal`, or `bootscript = "string"`).

2. Type either **poweroff** and then **poweron** (preferred), or **reset**.

For example:

```
sc> bootmode skip_diag  
sc> poweroff  
Are you sure you want to power off the system [y/n]? y  
SC Alert: Host system has shut down.  
sc> poweron
```

For example:

```
sc> bootmode reset_nvram  
sc> reset
```

If you use the `bootmode diag` option, POST (power-on self test) runs after the next reset, regardless of the OpenBoot PROM `post-trigger` setting. OpenBoot diagnostics tests also run after the next reset, regardless of the `obdiag-trigger` setting (provided that the OpenBoot PROM `diag-script` setting is not set to none).

Command Options

If you use the `bootmode` command without specifying any option, ALOM displays the currently selected boot mode and the time when it will expire.

```
sc> bootmode [skip_diag, diag, reset_nvram, normal, bootscript="string"]
```

The bootmode command uses the following options:

TABLE 4-2 bootmode Options

Option	Description
skip_diag	Forces the server to skip diagnostics. After you issue the bootmode skip_diag command, you must issue the poweroff and poweron commands within 10 minutes.
diag	Forces the server to run full POST (power-on self-test) diagnostics. After you issue the bootmode diag command, you must issue the poweroff and poweron commands within 10 minutes.
reset_nvram	Resets all of the parameters in the host system's OpenBoot PROM NVRAM (nonvolatile read-only memory) settings to the factory default values. You must reset the server within 10 minutes. Refer to "reset" on page 62 .
normal	Results in a normal boot. The server runs low-level diagnostics. After you issue bootmode normal, you must reset the server. Refer to "reset" on page 62 .
bootscript = "string"	<p>Controls the host server OpenBoot PROM firmware method of booting. It does not affect the current bootmode setting. <i>string</i> can be up to 64 bytes in length. You can specify a bootmode setting and set the bootscript within the same command. For example:</p> <pre>sc> bootmode reset_nvram bootscript = "setenv diag-switch? true" SC Alert: SC set bootmode to reset_nvram, will expire 20030305211833 SC Alert: SC set bootscript to "setenv diag-switch? true"</pre> <p>After the server resets and OpenBoot PROM reads the values stored in the bootscript, it sets the OpenBoot PROM variable diag-switch? to the user requested value of true.</p> <p>Note: If you set bootmode bootscript = "", ALOM sets the bootscript to empty. To view the bootmode settings, do the following:</p> <pre>sc> bootmode Bootmode: reset_nvram Expires WED MAR 05 21:18:33 2003 bootscript="setenv diagswitch? true"</pre>

Related Information

- ["ALOM Shell Commands" on page 40](#)
- ["reset" on page 62](#)
- ["Switching Between the System Console and ALOM" on page 20](#)

break

Use the `break` command to bring the server to the OpenBoot PROM prompt (`ok`). If you have configured the `kadb` debugger, then the `break` command brings the server into debug mode.

Make sure that the server front panel rotary switch is *not* in the Locked position, and that the system console is directed to ALOM. See [“Platform-Specific Information” on page 5](#) for further information. If the front panel rotary switch is in the Locked position, ALOM returns the error message `Error: Unable to execute break as system is locked.`

▼ To Use the `break` Command

Note – You must have `c` level user permission to use this command. Refer to [“userperm” on page 94](#) for information on setting user permissions.

- At the `sc>` prompt, type the following command:

```
sc> break option
```

Where *option* is `-y`, if desired.

After you type the `break` command, the server returns the `ok` prompt.

Command Option

The `break` command uses one option: `-y`.

If you specify `-y`, the break occurs without first asking: `Are you sure you want to send a break to the system [y/n]?`

Related Information

- [“ALOM Shell Commands” on page 40](#)
- [“userperm” on page 94](#)

console

Use the `console` command to enter console mode and to connect to the system console from the ALOM command shell. When you use this command, the system displays a standard Solaris login prompt. To exit the system console and return to the ALOM command shell, type `#.` (pound-period).

Although multiple users can connect to the system console from ALOM, only one user at a time has write access to the console. Any characters that other users type are ignored. This is referred to as a *write lock*, and the other user sessions view the console session in *read-only mode*. If no other users have access to the system console, then the user entering the console session first obtains the write lock automatically by executing the `console` command. If another user has the write lock, you can use the `-f` option to force the console to give you the write lock. This forces the other user's connection into read-only mode.

Note – Before you use the `-f` option, you need to configure both OpenBoot PROM and Solaris Operating Environment variables on the host server. See [“To Configure the `-f` Option” on page 50](#) for help in configuring OpenBoot PROM and the Solaris Operating Environment.

▼ To Use the `console` Command

Note – You must have `c` level user permission to use this command. Refer to [“userperm” on page 94](#) for information on setting user permissions.

1. At the `sc>` prompt, type the following command:

```
sc> console option
```

Where *option* is the option(s) you want to use, if any.

The Solaris system prompt is then displayed.

Note – The Solaris system prompt that appears depends on the default Solaris shell on the host server. Refer to [“Shell Prompts” on page xvii](#)

2. To return to the `sc>` prompt from the Solaris system prompt, type the escape character sequence.

The default sequence is `#.` (pound-period).

If the admin account has the write lock, ALOM returns the following messages at the console command:

```
sc> showusers
Username      Connection    Login Time    Client IP Addr  Console
-----
admin         serial       Nov 13 6:19   system
jeff          net-1        Nov 13 6:20   xxx.xxx.xxx.xxx
sc> console
Enter #. to return to ALOM.
%
```

If you do not have the write lock, ALOM returns a different message at the console command as shown in this example:

```
sc> console
Console session already in use. [view mode]
Enter #. to return to ALOM.
%
```

If you do not have the write lock and you use `-f` option with the `console` command, ALOM returns a message at the `console` command that is similar to the following:

```
sc> console -f
Warning: User <admin> currently has write permission to this
console and forcibly removing them will terminate any current write
actions and all work will be lost. Would you like to continue?
[y/n]
```

Command Option

The `console` command uses one option: `-f`. This option forces ALOM to release the write lock from another user and assign it to your console session. This places the other user's console session in read-only mode. Using this option returns the following message:

```
Warning: User username currently has write permission to this
console and forcibly removing them will terminate any current write
actions and all work will be lost. Would you like to continue
[y/n]?
```

At the same time, the user who has the write lock receives the following message:

```
Warning: Console connection forced into read-only mode.
```

▼ To Configure the `-f` Option

Before you use the `-f` option with the `console` command, you must configure both OpenBoot PROM and the Solaris Operating Environment on your host server.

1. To configure the OpenBoot PROM variable, type the following command at the `ok` prompt:

```
ok setenv ttya-ignore-cd false
```

For instructions on how to reach the `ok` prompt, refer to the Administration Guide for your server.

2. Next, you need to configure the Solaris Operating Environment. Log in as `root` and type the following commands at the superuser prompt. Type the second command all on one line, even though it appears on three lines in the example.

```
# pmadm -r -p zsmon -s ttya
# pmadm -a -p zsmon -s ttya -i root -fu -m
"/dev/term/a:I::/usr/bin/login:9600:ldterm,ttcompat:ttya login\ :
::tvi925:n:" -v 1
```

Related Information

- [“ALOM Shell Commands” on page 40](#)
- [“Permission Levels” on page 95](#)
- [“Serial Management Port Variables” on page 101](#)

consolehistory

Use the `consolehistory` command to display system console messages logged in ALOM buffers. You can read the following system console logs:

- `boot log`—Contains POST, OpenBoot PROM, and Solaris boot messages received from the host server from the most recent reset.
- `run log`—Contains the most recent console output from POST, OpenBoot PROM, and Solaris boot messages. In addition, this log records output from the host server's operating system.

Each buffer can contain up to 64 Kbytes of information.

If ALOM senses a host server reset, it begins to write that data into the `boot log` buffer. When the server senses that the Solaris Operating System is up and running, ALOM switches the buffer to the `run log`.

▼ To Use the `consolehistory` Command

Note – You must have `c` level user permission to use this command. See [“userperm” on page 94](#) for information on setting user permissions.

- At the `sc>` prompt, type the following command:

```
sc> consolehistory logname option(s)
```

Where *logname* is the name of the log you want to display (`boot` or `run`). If you type the `consolehistory` command without an option, ALOM returns the last 20 lines of the `run log`.

Note – Timestamps recorded in console logs reflect server time. These timestamps reflect local time, and ALOM event logs use UTC (Coordinated Universal Time). The Solaris Operating System synchronizes system time with ALOM time.

Command Options

The `consolehistory` command uses the following options for both logs. You can use the `-g` option in combination with the `-b`, `-e`, or `-v` options. If you do not specify the `-g` option, the screen output will not pause.:

TABLE 4-3 `consolehistory` Command Options

Option	Description
<code>-b lines</code>	Specifies the number of lines to display from the beginning of the log buffer. For example: <pre>consolehistory boot -b 10</pre>
<code>-e lines</code>	Specifies the number of lines to display from the end of the log buffer. If new data appears in the log while you are executing this command, the new data is appended to the screen output. For example: <pre>consolehistory run -e 15</pre>
<code>-g lines</code>	Specifies the number of lines to display before pausing the output to the screen. After each pause, ALOM shows the following message: Paused: Press 'q' to quit, any other key to continue. For example: <pre>consolehistory run -v -g 5</pre>
<code>-v</code>	Displays the entire contents of the specified log.

Related Information

[“ALOM Shell Commands” on page 40](#)

flashupdate

Use the `flashupdate` command to install a new version of the ALOM firmware from a location that you specify. The values you enter for command options specify the IP address of the site from which you download and the path at which the firmware image is located.

You can find the links to the download sites on the ALOM product page at:
<http://www.sun.com/servers/alom.html>

There are two types of ALOM firmware images: the main firmware and the bootmon (boot monitor) firmware. The bootmon firmware is the low-level bootstrap image. Be sure to locate the correct image when preparing to use the `flashupdate` command.



Caution – Do not use the `scadm resetrsc` command while a firmware update is in progress. If you need to reset ALOM, wait until after the update is complete. Otherwise, you could corrupt the ALOM firmware and render it unusable. For more information see [“scadm resetrsc” on page 149](#).

▼ To Use the `flashupdate` Command

Note – You must have **a** level user permission to use this command. Refer to [“userperm” on page 94](#) for information on setting user permissions.

To use this command, you need to know the following:

- IP address of the server from which you want to download the firmware image
- Path at which the image is stored
- Username and password to enter at the prompts

If you do not have this information, ask your network administrator. Before you start, if your server has a front panel rotary switch, make sure that the rotary switch is in the Normal (unlocked) position. If you use this command with the rotary switch in the Secure (locked) position, the firmware will not update. For more information about the front panel rotary switch, refer to your server’s documentation.

1. At the `sc>` prompt, type one of the following commands. Substitute the IP address of the server where the firmware image is stored for *ipaddr*, and the path name for *pathname*.

- For the main firmware image, the command is similar to the following:

```
sc> flashupdate -s ipaddr -f pathname/alommainfw
```

- For the bootmon image, the command appears similar to this:

```
sc> flashupdate -s ipaddr -f pathname/alombootfw
```

Note – The path you use for *pathname* is `/usr/platform/platform-name/lib/images/(alommainfw|alombootfw)`. To find the correct value for *platform-name*, use the `uname -i` command. See [“To Set Your Path to the `scadm` Utility” on page 140](#) for help.

2. When prompted, type your username and password, which are based on your UNIX or LDAP user name and password and not your ALOM username and password.

After you type your user name and password, the download process continues. As the download process progresses, a series of periods appear across your screen. (If you selected the `-v` option, ALOM returns status messages as the download process occurs.) When the download process is finished, ALOM displays the message: Update complete.

3. Type the `resetsc` command to reset ALOM.

See “[resetsc](#)” on page 63 for details.

For example (replace `xxx.xxx.xxx.xxx` with a valid IP address):

```
sc> flashupdate -s xxx.xxx.xxx.xxx -f
/usr/platform/SUNW,Netrax40/lib/images/alommainfw
Username: joeuser
Password: *****
.....
Update complete. To use the new image the device will need to be
reset using 'resetsc'.
sc>
```

Command Options

The `flashupdate` command uses the following options.

TABLE 4-4 `flashupdate` Command Options

Option	Description
<code>-s ipaddr</code>	Directs ALOM to download the firmware image from a server located at <i>ipaddr</i> . <i>ipaddr</i> describes an IP address in standard dot notation, such as 123.456.789.012.
<code>-f pathname</code>	Directs ALOM to the location of the image file. <i>pathname</i> is a full directory path, including the name of the image file, such as <code>/files/ALOM/fw/alommainfw</code> .
<code>-v</code>	Displays verbose output. This option provides detailed information about the progress of the download process as it occurs.

Related Information

“[ALOM Shell Commands](#)” on page 40

help

Use the `help` command to display a list of all ALOM commands and the syntax for each.

▼ To Use the `help` Command

Note – You do not need user permissions to use this command.

● **Do one of the following:**

- To display help for all available commands, at the `sc>` prompt type the following command:

```
sc > help
```

- To display help for a specific command, at the `sc>` prompt type `help` and the name of the command:

```
sc> help command-name
```

Where *command-name* is the name of the specific command.

For example:

```
sc> help poweron  
This command applies power to the managed system or FRU and turns  
off ok-2-remove LED on FRU with FRU option.  
sc>
```

The following example shows the output you see when you type `help` without specifying a command.

CODE EXAMPLE 4-1 Example of the `help` Command Output

```
sc> help  
Available commands  
-----  
poweron [FRU]  
poweroff [-y] [-f] r  
removefru [-y] [FRU]  
reset [-y] [-x]
```

CODE EXAMPLE 4-1 Example of the help Command Output (*Continued*)

```
break [-y]
bootmode [normal|reset_nvram|diag|skip_diag]
console [-f]
consolehistory [-b lines|-e lines] [-g lines] [-v] [boot|run]
showlogs [-b lines|-e lines] [-g lines] [-v]
setlocator [on|off]
showlocator
showenvironment
showfru
showplatform [-v]
showsc [-v] [param]
shownetwork [-v]
setsc [param] [value]
setalarm <alarm> [on | off]
setupsc
showdate
setdate [[mmdd] HHMM | mmddHHMM[cc]yy] [.SS]
resetsc [-y]
flashupdate [-s IPaddr -f pathname] [-v]
setdefaults [-y] [-a]
useradd username
userdel [-y] username
usershow username
userpassword username
userperm username [c] [u] [a] [r]
password
showusers [-g lines]
logout
help command
sc>
```

Related Information

[“ALOM Shell Commands” on page 40](#)

logout

Use the `logout` command to end your ALOM session and close your ALOM serial or Telnet connection.

▼ To Use the `logout` Command

Note – You do not need user permissions to use this command.

At the `sc>` prompt, type the following command:

```
sc>logout
```

Related Information

[“ALOM Shell Commands” on page 40](#)

password

Use the `password` command to change the ALOM password for the account to which you are currently logged in. This command works like the UNIX `passwd(1)` command.

▼ To Use the `password` Command

Note – This command enables you to change the password for your own ALOM account. You do not need user permissions to use this command. If you are an administrator and want to change a user account’s password, use the `userpassword` command. See [“userpassword” on page 93](#) for more information.

- **At the `sc>` prompt, type `password`.**

When you use this command, ALOM prompts you for your current password. If you enter the password correctly, it prompts you twice to enter the new password.

For example:

```
sc> password
password: Changing password for username
Enter current password: *****
Enter new password: *****
Re-enter new password: *****
sc>
```

Password Restrictions

Passwords have the following restrictions:

- They be between six and eight characters.
- They must contain at least two alphabetic characters (uppercase or lowercase letters) and at least one numeric or special character.
- They must differ from your login name and any reverse or circular shift of your login name. For comparison purposes, uppercase and lowercase letters are equivalent.
- They must differ from the old password by at least three characters. For comparison purposes, uppercase and lowercase letters are equivalent.

Related Information

[“ALOM Shell Commands” on page 40](#)

poweroff

Use the `poweroff` command to power off the host server to standby mode. If the server is already powered off, this command has no effect. However, ALOM is still available when the server is powered off, since ALOM uses the server’s standby power. Some environmental information is not available when the server is in standby mode.

▼ To Use the `poweroff` Command

Note – You must have `r` level user permission to use this command. See [“userperm” on page 94](#) for information on setting user permissions.

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

```
sc> poweroff option(s)
```

Where *option(s)* is the desired option(s), if any.

If you type the `poweroff` command without any options, the command initiates a graceful shutdown of the Solaris Operating System, similar to one of the Solaris commands `shutdown`, `init`, or `uadmin`.

It can take up to 65 seconds for the `poweroff` command to completely shut down the system. This is because ALOM attempts to wait for a graceful shutdown to complete before the system is powered off.

Note – After the `poweroff` command shuts down the system, ALOM issues the following message:

```
SC Alert: Host system has shut down.
```

Wait until you see this message before powering the system back on.

Command Options

The `poweroff` command uses the following options. You can use these two options together. Refer to [“Entering Command Options” on page 40](#).

TABLE 4-5 `poweroff` Command Options

Option	Description
-f	Forces an immediate shutdown regardless of the state of the host. If the Solaris Operating Environment shutdown fails for any reason, use this option to force the system to be powered off immediately. This command works like the Solaris Operating Environment command <code>halt</code> ; that is, it does not perform a graceful shutdown of the system or synchronize the file systems.
-y	Instructs ALOM to proceed without prompting the following confirmation question: <code>Are you sure you want to power off the system?</code>

Related Information

- [“ALOM Shell Commands” on page 40](#)
- [“bootmode” on page 44](#)
- [“poweron” on page 59](#)

poweron

Use the `poweron` command to power on the server. If the host server’s rotary switch is in the Locked position, or if the server is already powered on, this command has no effect.

▼ To Use the `poweron` Command

Note – You must have `r` level user permission to use this command. Refer to [“userperm” on page 94](#) for information on setting user permissions.

- At the `sc>` prompt, type the following command:

```
sc> poweron
```

Note – If you have just used the `poweroff` command to power off the host server, ALOM issues the following message:

```
SC Alert: Host system has shut down.
```

Wait until you see the message before powering the system back on.

- To turn on power to a specific FRU (field-replaceable unit) in the server, type the following command:

```
sc> poweron fru
```

Where *fru* is the name of the FRU you want to power on.

For example, to turn power on to Power Supply 0, type:

```
sc> poweron PS0
```

Command Option

The `poweron` command uses one option: *fru*.

Specifying the *fru* option powers on the specified FRU, (for example, you can use this command when a power supply is replaced in the host server.) ALOM supports the following FRUs.

TABLE 4-6 poweron FRU Values

Value	Description
PS0	Powers on Power Supply 0 in the host server.
PS1	Powers on Power Supply 1 in the host server.
PS2	Powers on Power Supply 2 in the host server.*
PS3	Powers on Power Supply 3 in the host server.*

* Value does not apply to the Netra 240 server.

Related Information

- [“ALOM Shell Commands” on page 40](#)
- [“bootmode” on page 44](#)
- [“poweroff” on page 58](#)

removefru

Use the `removefru` command to prepare a FRU (field-replaceable unit) for removal and to illuminate the corresponding OK-to-Remove LED on the host server. For information about the location of the OK-to-Remove LED, refer to your server’s documentation.

▼ To Use the `removefru` Command

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

```
sc> removefru fru
```

Where *fru* is the name of the FRU you want to prepare for removal.

For example, to prepare Power Supply 0 for removal, type:

```
sc> removefru PS0
```

Command Option

The `removefru` command has one option: *fru*.

Specifying the *fru* option prepares the specified FRU for removal. ALOM supports the following FRUs.

TABLE 4-7 `removefru` FRU Values

Value	Description
PS0	Prepares Power Supply 0 in the host server for removal.
PS1	Prepares Power Supply 1 in the host server for removal.
PS2	Prepares Power Supply 2 in the host server for removal.*
PS3	Prepares Power Supply 3 in the host server for removal.*

* Value does not apply to the Netra 240 server.

reset

Use the `reset` command to force the host server to reset immediately. The server reboots using the options you specified (if any) in the `bootmode` command. Refer to [“bootmode” on page 44](#). Note that `reset` does not perform a graceful shutdown of the system, and you might lose data. When possible, reset the server through the Solaris Operating System instead.

If the OpenBoot PROM variable `auto-boot?` is set to `false`, you might need to boot the server into Solaris to resume operation.

▼ To Use the `reset` Command

Note – You must have `r` level user permission to use this command. Refer to [“userperm” on page 94](#) for information on setting user permissions.

- At the `sc>` prompt, type the following command:

```
sc> reset option(s)
```

Where *option(s)* is the desired option(s), if any.

Command Options

The `reset` command uses the following two options. You can use these two options together. Refer to [“Overview of the ALOM Command Shell” on page 39](#).

TABLE 4-8 `reset` Command Options

Option	Description
-x	Generates the equivalent of an XIR (externally initiated reset) on the server. When the XIR occurs, the server enters OpenBoot PROM mode and displays the <code>ok</code> prompt. This option is useful for driver or kernel debugging, since most of the contents of the server’s memory and registers are preserved.
-y	Instructs ALOM to proceed without prompting the following confirmation question: “Are you sure you want to power off the system?”

Related Information

- [“ALOM Shell Commands” on page 40](#)
- [“Permission Levels” on page 95](#)

`resetsc`

Use the `resetsc` command to perform a hard reset of ALOM. This terminates all current ALOM sessions.

▼ To Use the `resetsc` Command

Note – You must have **a** level user permission to use this command. Refer to [“userperm” on page 94](#) for information on setting user permissions.

1. To perform a reset, type the following command:

```
sc> resetsc option
```

Where *option* is `-y`, if desired.

ALOM responds with the following message:

```
Are you sure you want to reset the SC [y/n]?
```

2. Type **y** to proceed, or **n** to exit without resetting ALOM.

Command Options

The `resetsc` command uses one option: `-y`

If you use the `-y` option, the reset proceeds without first asking you to confirm the reset.

Related Information

- [“ALOM Shell Commands” on page 40](#)
- [“Permission Levels” on page 95](#)
- [“The `reset-sc` Command” on page 162](#)

setalarm

Use the `setalarm` command to control the Netra server alarms (four dry contact alarm relays and four corresponding LED indicators).

The four alarms are:

- Critical
- Major
- Minor
- User

You can set or clear these alarms depending on the system status.

▼ To Use the `setalarm` Command

Note – You must have **a** level user permission to use this command. Refer to [“userperm” on page 94](#) for information on setting user permissions

- **At the `sc>` prompt, type `setalarm` and the option (critical, major, minor, or user), followed by `on` or `off`.**

For example, to turn the critical alarm on type:

```
sc> setalarm critical on
```

Related Information

[“ALOM Shell Commands” on page 40](#)

setdate

Use the `setdate` command to set the current ALOM date and time.

When the server boots, it sets the current ALOM date and time. The server also periodically sets the ALOM date and time while running. If you use the `setdate` command while the server is starting or running, ALOM returns the following error message:

```
sc> setdate 1200  
Error: Unable to set clock while managed system OS is running.
```

The `setdate` command only works when the server is in OpenBoot PROM or powered off.

Note – When setting the date in OpenBoot PROM, simply using the `break` command to switch to the OpenBoot PROM will not allow you to set the ALOM date. If you want to set the ALOM date in OpenBoot PROM, set the OpenBoot PROM `auto-boot?` variable to `false`, and then reset the host server.

▼ To Use the `setdate` Command

Note – You must have **a** level user permission to use this command. Refer to [“userperm” on page 94](#) for information on setting user permissions.

At the `sc>` prompt, type the following command:

```
sc> setdate mmd dHHMMccyy.SS
```

This command accepts settings for the month, day, hour, minute, century, year, and second. If you omit the month, day, and year, ALOM applies the current values as defaults. You can also omit the century value and the value for seconds in the time.

Note – Your server uses local time, but ALOM uses Coordinated Universal Time (UTC). ALOM does not accept time zone conversions or daylight time changes.

This example sets the time to September 16, 2002, at 21:45 (9:45 PM) (Coordinated Universal Time).

```
sc> setdate 091621452002  
MON SEP 16 21:45:00 2002 UTC
```

This example sets the time to September 16, at 9:45 PM of the current year (Coordinated Universal Time).

```
sc> setdate 09162145  
MON SEP 16 21:45:00 2002 UTC
```

This example sets the time to 9:45 PM of the current month, day, and year (Coordinated Universal Time).

```
sc> setdate 2145  
MON SEP 16 21:45:00 2002 UTC
```

Command Options

The `setdate` command uses the following options.

TABLE 4-9 `setdate` Command Options

Option	Description
mm	Month
dd	Day
HH	Hour (24-hour system)
MM	Minutes

TABLE 4-9 setdate Command Options (*Continued*)

Option	Description
.SS	Seconds
cc	Century (first two digits of the year)
<u>yy</u>	Year (last two digits of the year)

Related Information

[“ALOM Shell Commands” on page 40](#)

setdefaults

Use the `setdefaults` command to set all ALOM configuration variables back to their factory default values. The `-a` option sets the ALOM configuration and all user information back to the factory default value.

To Use the setdefaults Command

Note – You must have **a** level user permission to use this command. Refer to [“userperm” on page 94](#) for information on setting user permissions. You need to set the password to execute permission-level commands.

1. At the `sc>` prompt, type the following command:

```
sc> setdefaults option(s)
```

Where *option(s)* is the desired option(s), if any.

The Please reset your ALOM message is displayed.

2. Type the `resetsc` command to reset ALOM.

When ALOM resets, it uses the factory default values. For example:

```
sc> setdefaults  
Are you sure you want to reset the SC configuration [y/n]? y  
Note: Please reset your ALOM to make the new configuration active.
```

```
sc> setdefaults -a
Are you sure you want to reset the SC configuration and users
[y/n]? y
Note: Please reset your ALOM to make the new configuration active.
```

Command Options

The `setdefaults` command uses the following options.

TABLE 4-10 `setdefaults` Command Options

Option	Description
-a	Sets all ALOM configuration variables to their factory defaults and clears the user account and configuration information as well. The only account that remains on the system is the admin user account with no password.
-y	Instructs ALOM to proceed without first asking the confirmation question: Are you sure you want to reset the SC configuration?

Related Information

[“ALOM Shell Commands” on page 40](#)

setlocator

Use the `setlocator` command to turn the host server’s Locator LED on or off. For more information about the Locator LEDs, refer to the server’s documentation.

Note – This command works only with server models that have front-panel Locator LEDs.

Note – You do not need user permissions to use this command.

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

```
sc> setlocator option
```

Where *option* is either `on` or `off`.

For example:

```
sc> setlocator on
sc> setlocator off
```

To show the state of the Locator LED, use the `showlocator` command. Refer to [“showlocator” on page 83](#) for more information.

Command Options

This `setlocator` command has two options: `on` and `off`.

Related Information

- [“ALOM Shell Commands” on page 40](#)
- [“showlocator” on page 83](#)

setsc

The ALOM software comes preinstalled on your host server, and is ready to run as soon as you apply power to the server. If you want to customize the ALOM configuration for your installation, you set up the initial configuration with the `setupsc` command. If you need to update a setting after your initial ALOM configuration, use the `setsc` command. For information about your configuration, see [“ALOM Configuration Steps” on page 7](#); for more about the `setupsc` command, see [“setupsc” on page 70](#).

Note – You can create a script to run the `setsc` command and use it to configure multiple variables (for example, all of the event variables).

▼ To Use the `setsc` Command

Note – You must have **a** level user permission to use this command. Refer to [“userperm” on page 94](#) for information on setting user permissions.

Make sure that you have your configuration table with you as you run the command, and that it includes your planned values for each of the configuration variables you plan to change. See [“Configuration Worksheet” on page 13](#) and [“Using ALOM Configuration Variables” on page 99](#) for more information.

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

```
sc> setsc variable value
```

Substitute the configuration variable and the variable’s value for *variable* and *value*.

For example:

```
sc> setsc netsc_ipaddr xxx.xxx.xxx.xxx
```

Where *xxx.xxx.xxx.xxx* is a valid IP address.

If the variable you are configuring requires more than one value, type the values, using spaces to separate them. Because the `setsc` command is designed to be used in scripts as well as at the command prompt, it does not return any information after you enter a value for a variable.

If you type `setsc` without including a configuration variable, ALOM returns a list of the variables you can configure.

Related Information

[“ALOM Shell Commands” on page 40](#)

setupsc

Use the `setupsc` command to customize ALOM.

Make sure that you have your configuration table with you as you run the command, and that it includes your planned values for each of the configuration variables you plan to change. See [“Configuration Worksheet” on page 13](#) and [“Using ALOM Configuration Variables” on page 99](#) for more information.

▼ To Use the setupsc Command

Note – You must have a level user permission to use this command. Refer to [“userperm” on page 94](#) for information on setting user permissions.

1. At the `sc>` prompt, type the following command:

```
sc> setupsc
```

The setup script starts.

2. To exit the script, do one of the following:

- To exit the script and save the changes you have made, type Ctrl-Z.
- To exit the script without saving any changes, type Ctrl-C.

For example, the script starts as follows:

```
sc> setupsc
Entering interactive script mode. To exit and discard changes to
that point, use Ctrl-C or to exit and save changes to that point,
use Ctrl-Z.
```

Answer the interactive questions to customize ALOM.

The script asks you whether you want to enable each set of configuration variables. See [“Using ALOM Configuration Variables” on page 99](#) for help.

- To enable a set of variables so that you can configure their settings, type **y**.
- To accept a default value shown in parentheses, press Return.
- To disable a set of variables and proceed to the next, type **n**.

For example:

```
Should the SC network interface be enabled [y]?
```

If you type **y** or press Return to accept the default, the `setupsc` script then prompts you to enter values for the variables. The script helps you set up the following types of variables:

- [“Serial Management Port Variables” on page 101](#)
- [“Network Interface Variables” on page 101](#)
- [“Managed System Interface Variables” on page 102](#)
- [“Network Management and Notification Variables” on page 103](#)
- [“System User Variables” on page 104](#)

Note – You do not need to set or adjust the serial interface variables. These variables are automatically set for you by the host server.

Related Information

- [“Using ALOM Configuration Variables” on page 99](#)
- [“ALOM Shell Commands” on page 40](#)
- [“Configuration Worksheet” on page 13](#)
- [“Configuring ALOM” on page 7](#)

showdate

Use the `showdate` command to show the current ALOM date and time.

Note that the time ALOM shows is Coordinated Universal Time (UTC), and that your host server shows your local date and time.

▼ To Use the `showdate` Command

Note – You do not need user permissions to use this command.

- **At the `sc>` prompt type the following command:**

```
sc> showdate
```

For example:

```
sc> showdate
MON SEP 16 21:45:00 2002 UTC
```

To change the ALOM date and time, use the `setdate` command. See [“setdate” on page 65](#).

Note – When the server boots, it synchronizes with the current ALOM date and time.

Related Information

[“ALOM Shell Commands” on page 40](#)

showenvironment

Use the `showenvironment` command to display a snapshot of the server’s environmental status. The information this command can display includes system temperatures, hard disk drive status, power supply and fan status, front panel LED status, rotary switch position, voltage and current sensors, alarm status, and so on. The output uses a format similar to the UNIX command `prtdiag (1m)`.

Note – If you see the status `NOT SEATED` in the output for a power supply when using the `showenvironment` command, make sure the power supply is properly seated in the server by pressing against the power supply or by removing it and then reinserting it into the server.

▼ To Use the `showenvironment` Command

Note – You do not need user permissions to use this command.

- At the `sc>` prompt, type the following command:

```
sc> showenvironment
```

The display output differs according to your host server’s model and configuration. Some environmental information might not be available when the server is in standby mode.

The following example show sample output when the host server is powered on. Note that some information shown in the following example may be different for your Netra system, such as the number of power supplies and hard drives.

CODE EXAMPLE 4-2 Example of showenvironment Command Output

```

sc> showenvironment

===== Environmental Status =====

-----
System Temperatures (Temperatures in Celsius):
-----
Sensor          Status      Temp LowHard LowSoft LowWarn HighWarn HighSoft HighHard
-----
C0.P0.T_CORE    OK          48    -20    -10     0      97     102     120
C1.P0.T_CORE    OK          53    -20    -10     0      97     102     120
C2.P0.T_CORE    OK          49    -20    -10     0      97     102     120
C3.P0.T_CORE    OK          57    -20    -10     0      97     102     120
C0.T_AMB        OK          28    -20    -10     0      70      82      87
C1.T_AMB        OK          33    -20    -10     0      70      82      87
C2.T_AMB        OK          27    -20    -10     0      70      82      87
C3.T_AMB        OK          28    -20    -10     0      70      82      87

-----
Front Status Panel:
-----
Keyswitch position: NORMAL

-----
System Indicator Status:
-----
SYS.LOCATE          SYS.SERVICE          SYS.ACT
-----
OFF                 OFF                   ON

-----
System Disks:
-----
Disk  Status          Service  OK2RM
-----
HDD0  OK                OFF      OFF
HDD1  OK                OFF      OFF
HDD2  OK                OFF      OFF
HDD3  OK                OFF      OFF
-----

```

CODE EXAMPLE 4-2 Example of showenvironment Command Output (Continued)

```

Fans (Speeds Revolution Per Minute):
-----
Sensor           Status           Speed   Warn   Low
-----
FT0.F0.TACH      OK                3879   2400   750
FT1.F0.TACH      OK                3947   2400   750
FT2.F0.TACH      OK                4017   2400   750
FT3.F0           OK                --      --      --
-----

Voltage sensors (in Volts):
-----
Sensor           Status           Voltage LowSoft LowWarn HighWarn HighSoft
-----
MB.V_+1V5       OK                1.49   1.20   1.27   1.72   1.80
MB.V_VCCTM      OK                2.53   2.00   2.12   2.87   3.00
MB.V_NET0_1V2D  OK                1.26   0.96   1.02   1.38   1.44
MB.V_NET1_1V2D  OK                1.26   0.96   1.02   1.38   1.44
MB.V_NET0_1V2A  OK                1.26   0.96   1.02   1.38   1.44
MB.V_NET1_1V2A  OK                1.25   0.96   1.02   1.38   1.44
MB.V_+3V3       OK                3.33   2.64   2.80   3.79   3.96
MB.V_+3V3STBY   OK                3.33   2.64   2.80   3.79   3.96
MB.BAT.V_BAT    OK                3.07   --      2.25   --      --
MB.V_SCSI_CORE  OK                1.80   1.44   1.53   2.07   2.16
MB.V_+5V        OK                5.02   4.00   4.25   5.75   6.00
MB.V_+12V       OK                12.00  9.60   10.20  13.80  14.40
MB.V_-12V       OK                -11.96 -14.40 -13.80 -10.20 -9.60
-----

Power Supply Indicators:
-----
Supply   Active  Service  OK-to-Remove
-----
PS0      ON      OFF      OFF
PS1      ON      OFF      OFF
PS2      ON      OFF      OFF
PS3      ON      OFF      OFF
-----

Power Supplies:
-----
Supply  Status           Underspeed  Overtemp  Overvolt  Undervolt
Overcurrent
-----
PS0     OK                OFF         OFF       OFF       OFF       OFF
PS1     OK                OFF         OFF       OFF       OFF       OFF
PS2     OK                OFF         OFF       OFF       OFF       OFF

```

CODE EXAMPLE 4-2 Example of showenvironment Command Output (Continued)

```
PS3      OK          OFF          OFF          OFF          OFF          OFF
-----
Current sensors:
-----
Sensor           Status
-----
MB.FF_SCSIA     OK
MB.FF_SCSIB     OK
MB.FF_POK       OK
C0.P0.FF_POK    OK
C1.P0.FF_POK    OK
C2.P0.FF_POK    OK
C3.P0.FF_POK    OK
-----
System Alarms:
-----
Alarm           Relay          LED
-----
ALARM.CRITICAL  OFF            OFF
ALARM.MAJOR     OFF            OFF
ALARM.MINOR     OFF            OFF
ALARM.USER      OFF            OFF
```

The following example shows the environmental information you might see when the host server is powered off.

CODE EXAMPLE 4-3 Example of showenvironment Command With Server Powered Off

```
sc> showenvironment

===== Environmental Status =====

-----
System Temperatures (Temperatures in Celsius):
-----
Sensor           Status   Temp LowHard LowSoft LowWarn HighWarn HighSoft HighHard
-----
CPU temperature information cannot be displayed when System power is off.
MB.T_AMB OK      22     -11     -9      -7      57      60      63
-----
Front Status Panel:
-----
Keyswitch position: UNKNOWN
```

CODE EXAMPLE 4-3 Example of showenvironment Command With Server Powered Off (Continued)

```
-----
System Indicator Status:
-----
SYS.LOCATE          SYS.SERVICE          SYS.ACT
-----
OFF                 OFF                 OFF

Disk Status information cannot be displayed when System power is off.

Fan Status information cannot be displayed when System power is off.

Voltage Rail Status information cannot be displayed when System power is off.

-----
Power Supply Indicators:
-----
Supply   Active  Service  OK-to-Remove
-----
PS0      ON      OFF      OFF
PS1      ON      OFF      OFF
PS2      ON      OFF      OFF
PS3      ON      OFF      OFF

-----
Power Supplies:
-----
Supply  Status          Underspeed  Overtemp  Overvolt  Undervolt  Overcurrent
-----
PS0     OK              OFF         OFF       OFF       OFF        OFF
PS1     OK              OFF         OFF       OFF       OFF        OFF
PS2     OK              OFF         OFF       OFF       OFF        OFF
PS3     OK              OFF         OFF       OFF       OFF        OFF

Current sensor information cannot be displayed when System power is off.

Alarm Status information cannot be displayed when System power is off.
```

Related Information

[“ALOM Shell Commands” on page 40](#)

showfru

Use the `showfru` command to display the contents of all FRU PROMs (field-replaceable units programmable read-only memory) in the host server. The output uses a format similar to that of the Solaris Operating Environment `prtfru` command.

▼ To Use the showfru Command

Note – You do not need user permission to use this command.

- At the `sc>` prompt, type the following command:

```
sc> showfru
```

The following example shows sample output for the `showfru` command.

CODE EXAMPLE 4-4 Example of showfru Command Output

```
sc> showfru
FRU_PROM at MB.SEEPROM
  Timestamp: TUE OCT 21 14:18:15 UTC 2003
  Description: ASSY,A42,MOTHERBOARD
  Manufacture Location: location
  Sun Part No: 5016344
  Sun Serial No: 010102
  Vendor: vendor
  Initial HW Dash Level: 06
  Initial HW Rev Level: 51
  Shortname: A42_MB

FRU_PROM at SC.SEEPROM
  Timestamp: THU SEP 18 08:34:43 UTC 2003
  Description: ASSY,ALOM Card
  Manufacture Location: location
  Sun Part No: 5016346
  Sun Serial No: 001407
  Vendor: vendor
  Initial HW Dash Level: 05
  Initial HW Rev Level: 51
  Shortname: ALOM_Card

FRU_PROM at SCSIBP.SEEPROM
  Timestamp: TUE OCT 21 15:10:38 UTC 2003
```


CODE EXAMPLE 4-4 Example of showfru Command Output (Continued)

```
Description: ASSY,N42,SCSI DISK BKPLN
Manufacture Location: location
Sun Part No: 5016551
Sun Serial No: 001029
Vendor: vendor
Initial HW Dash Level: 02
Initial HW Rev Level: 02
Shortname: N42_SCSI_BP
```

FRU_PROM at C0.SEEPROM

```
Timestamp: SAT OCT 18 13:33:37 UTC 2003
Description: ASSY,A42,1.280GHZ,0MB,CPU BD
Manufacture Location: location
Sun Part No: 5016370
Sun Serial No: 001437
Vendor: vendor
Initial HW Dash Level: 04
Initial HW Rev Level: 51
Shortname: A42_CPU_1.280GHZZ
```

FRU_PROM at C1.SEEPROM

```
Timestamp: SAT OCT 18 13:59:49 UTC 2003
Description: ASSY,A42,1.280GHZ,0MB,CPU BD
Manufacture Location: location
Sun Part No: 5016370
Sun Serial No: 001426
Vendor: vendor
Initial HW Dash Level: 04
Initial HW Rev Level: 51
Shortname: A42_CPU_1.280GHZZ
```

FRU_PROM at C2.SEEPROM

```
Timestamp: SAT OCT 18 12:32:40 UTC 2003
Description: ASSY,A42,1.280GHZ,0MB,CPU BD
Manufacture Location: location
Sun Part No: 5016370
Sun Serial No: 001422
Vendor: vendor
Initial HW Dash Level: 04
Initial HW Rev Level: 51
Shortname: A42_CPU_1.280GHZZ
```

FRU_PROM at C3.SEEPROM

```
Timestamp: SAT OCT 18 12:17:33 UTC 2003
Description: ASSY,A42,1.280GHZ,0MB,CPU BD
Manufacture Location: location
Sun Part No: 5016370
```

CODE EXAMPLE 4-4 Example of showfru Command Output (*Continued*)

```
Sun Serial No: 001420
Vendor: vendor
Initial HW Dash Level: 04
Initial HW Rev Level: 51
Shortname: A42_CPU_1.280GHZZ

FRU_PROM at PS0.SEEPROM is not present

FRU_PROM at PS1.SEEPROM is not present

FRU_PROM at PS2.SEEPROM is not present

FRU_PROM at PS3.SEEPROM is not present

FRU_PROM at PDB.SEEPROM
Timestamp: TUE OCT 21 14:42:41 UTC 2003
Description: ASSY N42 PDB BOARD
Manufacture Location: location
Sun Part No: 5016552
Sun Serial No: 002017
Vendor: vendor
Initial HW Dash Level: 02
Initial HW Rev Level: 03
Shortname: N42 PDB BOARD

FRU_PROM at ALARM.SEEPROM
Timestamp: WED OCT 01 11:55:04 UTC 2003
Description: FRUID,PRGM, INSTR,ALARM BOARD
Manufacture Location: location
Sun Part No: 3753154
Sun Serial No: 000213
Vendor JEDEC code: 3E5
Initial HW Dash Level: 02
Initial HW Rev Level: 0E
Shortname: ALARM

FRU_PROM at C0.P0.B0.D0.SEEPROM
Timestamp: MON JAN 20 12:00:00 UTC 2003
Description: SDRAM DDR, 1024 MB
Manufacture Location: location
Vendor: vendor
Vendor Part No: M3 12L2828DT0-CA2

FRU_PROM at C0.P0.B0.D1.SEEPROM
Timestamp: MON DEC 30 12:00:00 UTC 2002
Description: SDRAM DDR, 1024 MB
Manufacture Location: location
```

CODE EXAMPLE 4-4 Example of showfru Command Output (Continued)

```
Vendor: vendor
Vendor Part No: M3 12L2828DT0-CA2

FRU_PROM at C0.P0.B1.D0.SEEPROM
Timestamp: MON DEC 30 12:00:00 UTC 2002
Description: SDRAM DDR, 1024 MB
Manufacture Location: location
Vendor: vendor
Vendor Part No: M3 12L2828DT0-CA2

FRU_PROM at C0.P0.B1.D1.SEEPROM
Timestamp: MON DEC 30 12:00:00 UTC 2002
Description: SDRAM DDR, 1024 MB
Manufacture Location: location
Vendor: vendor
Vendor Part No: M3 12L2828DT0-CA2

FRU_PROM at C1.P0.B0.D0.SEEPROM
Timestamp: MON DEC 30 12:00:00 UTC 2002
Description: SDRAM DDR, 1024 MB
Manufacture Location: location
Vendor: vendor
Vendor Part No: M3 12L2828DT0-CA2

FRU_PROM at C1.P0.B0.D1.SEEPROM
Timestamp: MON DEC 30 12:00:00 UTC 2002
Description: SDRAM DDR, 1024 MB
Manufacture Location: location
Vendor: vendor
Vendor Part No: M3 12L2828DT0-CA2

FRU_PROM at C1.P0.B1.D0.SEEPROM
Timestamp: MON DEC 30 12:00:00 UTC 2002
Description: SDRAM DDR, 1024 MB
Manufacture Location: location
Vendor: vendor
Vendor Part No: M3 12L2828DT0-CA2

FRU_PROM at C1.P0.B1.D1.SEEPROM
Timestamp: MON DEC 30 12:00:00 UTC 2002
Description: SDRAM DDR, 1024 MB
Manufacture Location: location
Vendor: vendor
Vendor Part No: M3 12L2828DT0-CA2

FRU_PROM at C2.P0.B0.D0.SEEPROM
Timestamp: MON DEC 30 12:00:00 UTC 2002
```

CODE EXAMPLE 4-4 Example of showfru Command Output (*Continued*)

```
Description: SDRAM DDR, 1024 MB  
Manufacture Location: location  
Vendor: vendor  
Vendor Part No: M3 12L2828DT0-CA2
```

```
FRU_PROM at C2.P0.B0.D1.SEEEPROM  
Timestamp: MON DEC 30 12:00:00 UTC 2002  
Description: SDRAM DDR, 1024 MB  
Manufacture Location: location  
Vendor: vendor  
Vendor Part No: M3 12L2828DT0-CA2
```

```
FRU_PROM at C2.P0.B1.D0.SEEEPROM  
Timestamp: MON DEC 30 12:00:00 UTC 2002  
Description: SDRAM DDR, 1024 MB  
Manufacture Location: location  
Vendor: vendor  
Vendor Part No: M3 12L2828DT0-CA2
```

```
FRU_PROM at C2.P0.B1.D1.SEEEPROM  
Timestamp: MON DEC 30 12:00:00 UTC 2002  
Description: SDRAM DDR, 1024 MB  
Manufacture Location: location  
Vendor: vendor  
Vendor Part No: M3 12L2828DT0-CA2
```

```
FRU_PROM at C3.P0.B0.D0.SEEEPROM  
Timestamp: MON JAN 20 12:00:00 UTC 2003  
Description: SDRAM DDR, 1024 MB  
Manufacture Location: location  
Vendor: vendor  
Vendor Part No: M3 12L2828DT0-CA2
```

```
FRU_PROM at C3.P0.B0.D1.SEEEPROM  
Timestamp: MON JAN 20 12:00:00 UTC 2003  
Description: SDRAM DDR, 1024 MB  
Manufacture Location: location  
Vendor: vendor  
Vendor Part No: M3 12L2828DT0-CA2
```

```
FRU_PROM at C3.P0.B1.D0.SEEEPROM  
Timestamp: MON JAN 20 12:00:00 UTC 2003  
Description: SDRAM DDR, 1024 MB  
Manufacture Location: location  
Vendor: vendor  
Vendor Part No: M3 12L2828DT0-CA2
```

CODE EXAMPLE 4-4 Example of showfru Command Output (Continued)

```
FRU_PROM at C3.P0.B1.D1.SEEPROM
Timestamp: MON JAN 20 12:00:00 UTC 2003
Description: SDRAM DDR, 1024 MB
Manufacture Location: location
Vendor: vendor
Vendor Part No: M3 12L2828DT0-CA2
```

Related Information

[“ALOM Shell Commands” on page 40](#)

showlocator

Use the `showlocator` command to view the state of the host server’s Locator LED (on or off). For more information about the Locator LEDs, refer to your server’s documentation.

Note – This command works only with servers that have the front panel Locator LEDs.

▼ To Use the showlocator Command

Note – You do not need user permissions to use this command.

- At the `sc>` prompt, type the following command:

```
sc> showlocator
```

- If the Locator LED is on, ALOM returns the following result:

```
sc> showlocator
Locator LED is ON
```

- If the Locator LED is off, ALOM returns the following result:

```
sc> showlocator
Locator LED is OFF
```

To change the state of the Locator LED, use the `setlocator` command. Refer to [“setlocator” on page 68](#).

Related Information

- [“ALOM Shell Commands” on page 40](#)
- [“setlocator” on page 68](#)

showlogs

Use the `showlogs` command to display the history of all events logged in the ALOM event buffer. These events include server reset events and all ALOM commands that change the state of the system (such as `reset`, `poweroff`, and `poweron`). See [“reset” on page 62](#), [“poweroff” on page 58](#), and [“poweron” on page 59](#).

Each event recorded in the log has the following format:

```
date hostname: message
```

`date` signifies the time at which the event occurred, as recorded by ALOM. `hostname` is the name of the host server, and `message` is a short description of the event.

If you use the `showlogs` command without any option, ALOM displays the last 20 lines of the event log.

▼ To Use the showlogs Command

Note – You do not need user permissions to use this command.

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

```
sc> showlogs option(s)
```

Where *option(s)* is the desired option(s), if any.

The following example shows an event log entry:

```
NOV 15 11:12:25 labserver: "SC Login: User johnsmith Logged on."
```

Note – Timestamps shown in the ALOM event log reflect UTC (Coordinated Universal Time).

This example shows the output of the `showlogs` command with the `-v` option. The `-v` option displays the persistent event log. The persistent event log is comprised of the contents of NVRAM.

CODE EXAMPLE 4-5 Example of `showlogs -v` Command Output

```
sc> showlogs -v
Persistent event log
-----
MAY 19 11:22:03 wgs40-232: 0004000e: "SC Request to Power Off Host Immediately."
MAY 19 11:22:12 wgs40-232: 00040029: "Host system has shut down."
MAY 19 11:22:43 wgs40-232: 00040002: "Host System has Reset"
Log entries since MAY 19 14:57:08
-----
MAY 19 14:57:08 wgs40-232: 00060003: "SC System booted."
MAY 19 14:57:35 wgs40-232: 00060000: "SC Login: User rich Logged on."
```

Command Options

The `showlogs` command uses four options. You can use the `-g` option in combination with the `-b`, `-e`, or `-v` options. If you do not specify the `-g` option, the screen output will not pause.

TABLE 4-11 `showlogs` Command Options

Option	Description
<code>-v</code>	Displays the entire contents of the buffer file and the contents of NVRAM (the persistent event log).

TABLE 4-11 showlogs Command Options (*Continued*)

Option	Description
-b <i>lines</i>	Displays the events from the beginning of the buffer, where <i>lines</i> is the number of lines that you specify. For example, the following command displays the first 100 lines in the buffer: <pre>showlogs -b 100</pre>
-e <i>lines</i>	Displays the events from the end of the buffer file, where <i>lines</i> is the number of lines that you specify. If new data appears in the log while you are executing this command, the new data is appended to the screen output. For example: <pre>showlogs -e 10</pre>
-g <i>lines</i>	Controls the number of lines displayed on the screen at a given time, where <i>lines</i> is the number of lines that you specify. After each pause, ALOM shows the following message: <pre>- -pause-- Press 'q' to quit, any other key to continue.</pre>

Related Information

- [“ALOM Shell Commands” on page 40](#)
- [“consolehistory” on page 51](#)

shownetwork

Use the `shownetwork` command to display the current ALOM network configuration.

Note – If you changed the ALOM network configuration since the last time you booted ALOM, the output from this command might not show the updated configuration information. Reboot ALOM to see the changed configuration. See [“Redirecting the System Console From ALOM to Other Devices” on page 36](#) for information on rebooting ALOM.

▼ To Use the shownetwork Command

Note – You do not need user permissions to use this command.

- At the `sc>` prompt, type the following command:

```
sc> shownetwork option
```

Where *option* is `-v`, if desired.

The command output appears similar to the following example, with the actual IP addresses, netmask, and Ethernet addresses in your network configuration in place of `xxx.xxx.xxx.xxx`.

```
sc> shownetwork  
SC network configuration is:  
IP Address: XXX.XXX.XXX.XXX  
Gateway address: XXX.XXX.XXX.XXX  
Netmask: XXX.XXX.XXX.XXX  
Ethernet Address: XX:XX:XX:XX:XX:XX
```

Command Option

The `shownetwork` command uses one option: `-v`.

If you type `shownetwork -v`, ALOM returns additional information about your network, including information about your DHCP (Dynamic Host Configuration Protocol) server, if you have one configured. See [“Configuring Your Network Using DHCP” on page 15](#).

Related Information

[“ALOM Shell Commands” on page 40](#)

showplatform

Use the `showplatform` command to display information about the host server’s platform ID and status.

▼ To Use the showplatform Command

Note – You do not need user permissions to use this command.

- At the `sc>` prompt, type `showplatform`.

The host server returns information similar to the following:

CODE EXAMPLE 4-6 Example of showplatform Command Output

```
sc> showplatform
SUNW,Netra-x40

Domain          Status
-----          -
vsp75-202-priv OS Running
```

Related Information

[“ALOM Shell Commands” on page 40](#)

showsc

Use the showsc command to display information about the ALOM software configuration and firmware version.

▼ To Use the showsc Command

Note – You do not need user permissions to use this command.

- **Do one of the following:**

- To display all configuration information for ALOM, type the following command at the sc> prompt:

```
sc>showsc
```

- To display the values for a particular configuration variable, type the following command at the sc> prompt:

```
sc>showsc param
```

Where *param* is the *param* option. See [“Using ALOM Configuration Variables” on page 99](#) for further information.

For example, `xir` is the current value for the `sys_autorestart` configuration variable:

```
sc> showsc sys_autorestart  
  
xir
```

For more on `sys_autorestart`, refer to [“sys_autorestart” on page 129](#).

The `-v` option provides additional details about the specified variable.

For example, to display the ALOM version, type either of the following:

```
sc> showsc version  
Advanced Lights Out Manager v1.5
```

```
sc> showsc version -v  
  
Advanced Lights Out Manager v1.5  
SC Firmware version: 1.4.0  
SC Bootmon version: 1.4.0  
  
SC Bootmon Build Release: 06  
SC bootmon checksum: DE232BFF  
SC Bootmon built Feb 23 2004, 15:18:17  
  
SC Build Release: 06  
SC firmware checksum: EAC2EF86  
  
SC firmware built Feb 23 2004, 15:17:59  
SC firmware flashupdate FEB 27 2004, 20:14:49  
  
SC System Memory Size: 8 MB  
  
SC NVRAM Version = a  
  
SC hardware type: 1
```

Command Options

The `showsc` command uses the following options. If you type `showsc` without using any options, ALOM displays all of its configuration variables.

TABLE 4-12 `showsc` Command Options

Option	Description
<code>-v</code>	When used with the <i>param</i> option, the <code>-v</code> option might display more detailed information about the specified configuration variables (depending on the variable).
<i>param</i>	Directs the <code>showsc</code> command to display the value of the configuration variable or parameter you specified.

Related Information

[“ALOM Shell Commands” on page 40](#)

showusers

Use the `showusers` command to display the list of users currently logged in to ALOM. The list includes details such as the type of connection, the duration of each user’s session, the IP address of the client (if the user is using a network connection), and whether the user has the host system console’s write lock (this determines whether the user can type input in a console session, or just monitor the console stream in read-only mode).

▼ To Use the `showusers` Command

Note – You do not need user permissions to use this command.

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

```
sc> showusers option
```

Where *option* is `-g lines`, if desired.

For example:

```
sc> showusers
username connection  login time      client IP addr      console
-----
joeuser   serial   Sep 16 10:30
bigadmin  net-3    Sep 14 17:24    123.123.123.123    system
sueuser   net-2    Sep 15 12:55    123.223.123.223
```

If a user has more than one session running, each session is listed.

Command Option

The `showusers` command uses one option: `-g lines`.

This option pauses the display after the number of lines you specify for *lines*. After each pause, ALOM returns the message:

```
--pause-- Press 'q' to quit, any other key to continue
```

If ALOM encounters an alert condition or an event, it displays the information after this message. Press any key to continue, or press `q` to exit the display and return to the `sc>` prompt.

useradd

Use the `useradd` command to add a user account to ALOM.

▼ To Use the `useradd` Command

Note – You must have `u` level user permission to use this command. Refer to [“userperm” on page 94](#) for information on setting user permissions.

- At the `sc>` prompt, type the following command:

```
sc> useradd username
```

Where *username* is the name of the user whose account you want to add to ALOM.

username has the following restrictions:

- Valid characters include alphabetic (letter) and numeric characters, period (.), underscore (_), and hyphen (-).
- It can have a maximum length of 16 characters, at least one of which must be a lowercase alphabetic character.
- The first character must be alphabetic.

You can add a maximum of 15 unique user accounts to ALOM.

To assign a password to a user name, use the `userpassword` command. See [“userpassword” on page 93](#).

To set permission levels for a user name, use the `userperm` command. See [“userperm” on page 94](#).

Related Information

[“ALOM Shell Commands” on page 40](#)

`userdel`

Use the `userdel` command to delete an ALOM user account. Once the account is deleted, the deleted user’s configuration information can never be recovered.

If the user name you specify is not on the list of ALOM users, ALOM returns an error message. Likewise, if there is only one user on the list, ALOM will not delete that user account.

Note – ALOM will not delete the default `admin` user account.

▼ To Use the `userdel` Command

Note – You must have `u` level user permission to use this command. Refer to [“userperm” on page 94](#) for information on setting user permissions.

- At the `sc>` prompt, type the following command:

```
sc> userdel useracct
```

Where *useracct* is the name of the user account you want to delete.

Command Option

The `userdel` command uses one option: `-y`.

If you specify the `-y` option, `userdel` deletes the account without prompting the following confirmation question:

```
Are you sure you want to delete user oldacct [y/n]?
```

Related Information

[“ALOM Shell Commands” on page 40](#)

`userpassword`

Use the `userpassword` command to change the password for the specified user account. This command is for administrators who need to change user passwords on ALOM, but who might not know what the user account passwords are. If you are trying to change the password on your own ALOM account, use the `password` command. See [“password” on page 57](#).

▼ To Use the `userpassword` Command

Note – You must have `u` level user permission to use this command. See [“userperm” on page 94](#) for information on setting user permissions.

- At the `sc>` prompt, type the following command:

```
sc> userpassword username
```

Where *username* is the name of the user account for which you want to change the password.

When you use this command, ALOM does not prompt you for the existing password.

For example:

```
sc> userpassword msmith  
New password:  
Re-enter new password:  
sc>
```

Password Restrictions

Passwords have the following restrictions:

- They must contain between six and eight characters.
- They must contain at least two alphabetic characters (uppercase or lowercase letters) and at least one numeric or special character.
- They must differ from your login name and any reverse or circular shift of your login name. For comparison purposes, uppercase and lowercase letters are equivalent.
- They must differ from the old password by at least three characters. For comparison purposes, uppercase and lowercase letters are equivalent.

Related Information

[“ALOM Shell Commands” on page 40](#)

userperm

Use the `userperm` command to set or change permission levels for a specified user account. By default, the initial setup procedure creates the ALOM `admin` account. This account cannot be deleted, nor can you change the user permissions for the account.

Permission Levels

All users can read ALOM information, but you need authorization to perform ALOM functions or change settings. There are four permission levels that increase a user's authorization. You can specify zero through four permission levels.

TABLE 4-13 userperm Permission Levels

Permission Level	Description
a	Administrative. This user is authorized to change the state of ALOM configuration variables and reboot ALOM. Refer to “Using ALOM Configuration Variables” on page 99 and “resetsc” on page 63 .
u	User administration. This user is authorized to add users and delete users, change user permissions, and change the authorization level of other users. Refer to “useradd” on page 91 and “userdel” on page 92 .
c	Console permission. This user is authorized to connect to the host server system console. Refer to “console” on page 48 .
r	Reset/power permission. This user is authorized to reset the host server, and power the server on and off. Refer to “reset” on page 62 , “poweron” on page 59 , and “poweroff” on page 58 .

If you do not assign a permission level to the specified user (that is, you assign zero permission levels), then that user has read-only permission. This is the default level for a new ALOM user account.

Note – The default user permission for the account that you use when you start ALOM for the first time is read-only. After you set a password for the default admin account, the permissions change to `cuar` (full authorization).

To see a user's permission levels, use the `usershow` command. See [“usershow” on page 96](#).

▼ To Use the userperm Command

Note – You must have `u` level user permission to use this command

- At the `sc>` prompt, type the following command:

```
sc> userperm username permission(s)
```

Where *username* is the name of the user to whom you want to assign permissions, and *permission(s)* is the permission(s) you want to assign to that user.

For example, to assign *c* and *r* user permissions to user *msmith*, type the following at the ALOM command prompt:

```
sc> userperm msmith cr
```

To see a user's permission levels, use the `usershow` command.

A user with read-only permission can use only the following commands:

- `help`
- `password`
- `showdate`
- `shownetwork`
- `showenvironment`
- `showlogs`
- `consolehistory`
- `showsc`
- `logout`
- `showlocator`

A user who has read-only permissions would appear similar to the user *jeremy* in the following example:

```
sc> usershow
Username  Permissions Password
-----
admin     cuar         Assigned
jeremy    ----         Assigned
```

Related Information

[“ALOM Shell Commands” on page 40](#)

usershow

Use the `usershow` command to display a specified user's ALOM account, along with each user's permissions and whether a password has been assigned. Refer to [“userperm” on page 94](#) and [“userpassword” on page 93](#).

If you do not enter a username, `usershow` displays all of the ALOM accounts.

▼ To Use the usershow Command

Note – You must have **u** level user permission to use this command. See [“userperm” on page 94](#) for information on setting user permissions.

At the `sc>` prompt, type the following command:

```
sc> usershow username
```

Where *username* is the name of the specified user.

For example:

```
sc> usershow
Username Permissions Password?
admin      cuar      Assigned
wwilson    cuar      Assigned
jadams     --cr     None
```

```
sc> usershow wwilson
Username Permissions Password?
wwilson  cuar      Assigned
```

Related Information

[“ALOM Shell Commands” on page 40](#)

Using ALOM Configuration Variables

This chapter contains information on ALOM configuration variables and consists of:

- [“Overview of the ALOM Configuration Variables” on page 99](#)
- [“Serial Management Port Variables” on page 101](#)
- [“Network Interface Variables” on page 101](#)
- [“Managed System Interface Variables” on page 102](#)
- [“Network Management and Notification Variables” on page 103](#)
- [“System User Variables” on page 104](#)

Overview of the ALOM Configuration Variables

ALOM has nonvolatile configuration variables that you can use to change ALOM behavior. The default values for these variables are preinstalled. You customize the variables for the first time using the `setupsc` interactive script command. You can change settings for individual variables using either the ALOM shell or the `scadm set` command. See [“`setupsc`” on page 70](#) and [“`scadm set`” on page 151](#) for more information.

▼ To Use Configuration Variables in the ALOM Command Shell

Note – You must have a level user permission to set configuration variables from the ALOM shell. You must log in to the host server as superuser to set an ALOM configuration variable using the `scadm` utility. Refer to [“userperm” on page 94](#) for more information about setting user permissions, and [“Overview of the `scadm` Utility” on page 139](#) for more on `scadm`.

From the ALOM command shell:

- **To specify a value (or values) for a settable variable, use the `setupsc` command.**
See [“setupsc” on page 70](#).
- **To show the configuration variables and their settings, use the `showsc` command.**
See [“showsc” on page 88](#).
- **To set a value for a configuration variable, use the `setsc` command.**
See [“setsc” on page 69](#).
- **To reset all variables to their factory defaults, use the `setdefaults` command.**
See [“setdefaults” on page 67](#).

Using the `scadm` utility:

- **To view the current value, use the `show` command.**
See [“`scadm show`” on page 152](#).
- **To change the value, use the `set` command.**
See [“`scadm set`” on page 151](#).

Related Information

[“Overview of the `scadm` Utility” on page 139](#).

Serial Management Port Variables

The host system sets the serial management port variables when it starts up, so these variables are read-only. ALOM uses the serial management port variables to report the serial management (SER MGT) settings on the host server. To view the settings for these variables, use the `showsc` command. See [“showsc” on page 88](#). To view the settings using the `scadm` utility, use the `scadm showsc` command. See [“scadm show” on page 152](#).

You can view settings for the following serial port variables, but you cannot set or adjust them:

- [“ser_baudrate” on page 127](#)
- [“ser_data” on page 128](#)
- [“ser_parity” on page 128](#)
- [“ser_stopbits” on page 129](#)

Related Information

- [“Overview of the ALOM Configuration Variables” on page 99](#)
- [“setupsc” on page 70](#)
- [“setsc” on page 69](#)
- [“showsc” on page 88](#)

Network Interface Variables

Use the network interface variables to specify the network settings that ALOM uses across its Ethernet connection at the NET MGT port on the host server.

ALOM uses the following network interface variables:

- [“if_emailalerts” on page 105](#)
- [“if_network” on page 107](#)
- [“if_modem” on page 108](#)
- [“netsc_dhcp” on page 114](#)
- [“netsc_ipaddr” on page 115](#)
- [“netsc_ipnetmask” on page 117](#)
- [“netsc_ipgateway” on page 116](#)
- [“netsc_tpelinktest” on page 118](#)
- [“netsc_enetaddr” on page 114](#)

From the ALOM command shell:

- **To specify a value (or values) for this variable, use the `setupsc` command.**
See [“setupsc” on page 70](#).
- **To show the configuration variables and their settings, use the `showsc` command.**
See [“showsc” on page 88](#).
- **To set a value for a configuration variable, use the `setsc` command.**
See [“setsc” on page 69](#).
- **To reset all variables to their factory defaults, use the `setdefaults` command.**
See [“setdefaults” on page 67](#).

Using the `scadm` utility:

- **To view the current value, use the `show` command.**
See [“scadm show” on page 152](#).
- **To change the value, use the `set` command.**
See [“scadm set” on page 151](#).

Related Information

[“Overview of the ALOM Configuration Variables” on page 99](#).

Managed System Interface Variables

Use the managed system interface variables to specify how ALOM behaves when it passes information to the host server. Some of these variables are configurable, and others are set by default and cannot be changed.

ALOM uses the following managed system interface variables:

- `sys_autorestart` (settable) see [“sys_autorestart” on page 129](#).
- `sys_eventlevel` (settable) see [“sys_eventlevel” on page 134](#).
- `sys_hostname` (not settable) see [“sys_hostname” on page 135](#).
- `sys_enetaddr` (not settable) see [“sys_enetaddr” on page 134](#).
- `sys_xirtimeout` (settable) see [“sys_xirtimeout” on page 137](#).

From the ALOM command shell:

- **To specify a value (or values) for a settable variable, use the `setupsc` command.**
See [“setupsc” on page 70](#).
- **To show the configuration variables and their settings, use the `showsc` command.**
See [“showsc” on page 88](#).
- **To set a value for a settable variable, use the `setsc` command.**
See [“setsc” on page 69](#).
- **To reset all variables to their factory defaults, use the `setdefaults` command.**
See [“setdefaults” on page 67](#).

Using the `scadm` utility:

- **To view the current value, use the `show` command.**
See [“scadm show” on page 152](#).
- **To change the value, use the `set` command.**
See [“scadm set” on page 151](#).

Related Information

[“Overview of the ALOM Configuration Variables” on page 99](#).

Network Management and Notification Variables

Use the network management and notification variables to specify how ALOM manages the host system and sends alerts.

ALOM supports the following network management and notification variables:

- `mgt_mailhost` – see [“mgt_mailhost” on page 112](#).
- `mgt_mailalert` – see [“mgt_mailalert” on page 109](#).

From the `sc>` prompt at the ALOM command shell:

- **To set up these variables, use the `setupsc` command.**
See [“setupsc” on page 70](#).

- **To view the current settings, use the `showsc` command.**
See [“showsc” on page 88](#).
- **To change a value for a variable, use the `setsc` command.**
See [“setsc” on page 69](#).

Related Information

[“Overview of the ALOM Configuration Variables” on page 99](#).

System User Variables

The system user variables enable you to customize the way ALOM identifies and interacts with the host server. When you use the `setupsc` script to customize ALOM, you can reach these variables by responding **y** when `setupsc` prompts you. See [“setupsc” on page 70](#) for more information.

- [“sc_backupuserdata” on page 119](#)
- [“sc_clieventlevel” on page 119](#)
- [“sc_clipasswdecho” on page 123](#)
- [“sc_cliprompt” on page 120](#)
- [“sc_clitimeout” on page 122](#)
- [“sc_customerinfo” on page 124](#)
- [“sc_escapechars” on page 124](#)
- [“sc_powerondelay” on page 125](#)
- [“sc_powerstatememory” on page 126](#)

From the ALOM command shell:

- **To specify a value (or values) for a settable variable, use the `setupsc` command.**
See [“setupsc” on page 70](#).
- **To show the configuration variables and their settings, use the `showsc` command.**
See [“showsc” on page 88](#).
- **To set a value for a settable variable, use the `setsc` command.**
See [“setsc” on page 69](#).
- **To reset all variables to their factory defaults, use the `setdefaults` command.**
See [“setdefaults” on page 67](#).

Using the `scadm` utility:

- **To view the current value, use the `show` command.**
Refer to [“scadm show” on page 152](#).
- **To change the value, use the `set` command.**
Refer to [“scadm set” on page 151](#).

Related Information

[“Overview of the ALOM Configuration Variables” on page 99](#).

Descriptions of Configuration Variables

This section lists the descriptions of ALOM configuration variables in alphabetical order.

`if_emailalerts`

Use this variable to enable email alerts. When this variable is set to `true` (enabled), you can set values for the ALOM network management and notification variables. See [“Network Management and Notification Variables” on page 103](#). The network management and notification variables, `mgt_mailhost` and `mgt_mailalert`, specify how to manage and enable email alerts. See [“mgt_mailhost” on page 112](#), and [“mgt_mailalert” on page 109](#).

Note – The `if_network` variable must be enabled before you can enable `if_emailalerts`. Refer to [“if_network” on page 107](#).

From the ALOM command shell:

- **To specify a value for this variable, use the `setupsc` command.**
See [“setupsc” on page 70](#).
- **To set or change the value, use the `setsc` command.**
See [“setsc” on page 69](#).
- **To view the current value for this variable, use the `showsc` command.**
See [“showsc” on page 88](#).

▼ To Use the `setupsc` Command to Set the `if_emailalerts` Variable

1. At the `sc>` prompt, type the following command:

```
sc> setupsc
```

The `setupsc` script prompts you as follows:

```
Should the SC email alerts be enabled [y]?
```

2. Type **y** to configure the interfaces; that is, to set the value to true.

The default value for this variable is true (enabled).

▼ To Use the `setsc` Command to Change the `if_emailalerts` Variable

- At the `sc>` prompt, type the following command:

```
sc> setsc if_emailalerts response
```

Where *response* is true to enable email alerts, or false to disable them.

if_network

Use this variable to enable the ALOM network interface. When this variable is set to true (enabled), you are able to use the ALOM network interface variables. Refer to [“Network Interface Variables” on page 101](#).

TABLE 5-1 if_network Tasks

Task	ALOM Shell Command	scadm Utility
Specify a value for a settable variable	“setupsc” on page 70 .	
View the configuration variable settings	“showsc” on page 88 .	“scadm show” on page 152 .
Set or change a configuration variable	“setsc” on page 69 .	“scadm set” on page 151 .
Reset all variables to their factory defaults	“setdefaults” on page 67 .	

▼ To Use the setupsc Command to Set the if_network Variable

1. At the `sc>` prompt, type the following command:

```
sc> setupsc
```

The setupsc script prompts you as follows:

```
Do you wish to configure the enabled interfaces [y]?
```

2. Type **y** to configure the interfaces.

The default value for this variable is true (enabled).

▼ To Use the setsc Command to Change the if_network Variable

- At the `sc>` prompt, type the following command:

```
sc> setsc if_network response
```

Where *response* is true to enable the network interface or false to disable it.

if_modem

ALOM supports incoming serial modem communication from an external modem for remote management. To accept an incoming communication, you need to configure the modem hardware and ALOM software locally before accessing the system remotely.

A modem attached to the serial management port (SERIAL MGT) has exclusive use of the port. You might want to configure ALOM for use on an Ethernet to enable local users to connect to ALOM through Telnet. See [“Configuring ALOM” on page 7](#) or [“Configuring Your Network Manually” on page 16](#) for further information.

▼ To Configure the Serial Management Port to Use a Modem

1. Set the `if_modem` variable to `true` by doing one of the following:

- Log in to ALOM through a Telnet session and type the following:

```
sc> setsc if_modem true
SC Alert: Serial Mgt port input is disabled until a modem call is
received.
```

- Log in to the host server, use the `scadm` utility, and type the following:

```
# scadm set if_modem true
May 19 13:59:07 wgs40-232 rmclomv: Serial Mgt port input is
disabled until a modem call is received SC Alert: Serial Mgt port
input is disabled until a modem call is received
```

2. Connect the modem to the serial management port (SERIAL MGT) and turn on the power to the modem.

The DTR, CTS, and AA lights illuminate.

Note – After you set the `if_modem` variable to `true`, input on the serial connection is disabled unless either the DCD signal on the serial management port goes high or the `if_modem` variable is set back to `false`. You cannot use the SERIAL MGT port until you connect a modem to it. However, you can use Telnet to connect to ALOM through the NET MGT port.

▼ To Return the Serial Management Port to Use Without a Modem

1. Power off the modem.
2. Disconnect the RJ-45 modem connection from the serial management port (SERIAL MGT).
3. If another device was attached to the serial management port before you removed it to connect the modem, reconnect that device to the serial management port.
4. Set the `if_modem` variable to `false` by doing one of the following:
 - Log in to ALOM through a Telnet session and type the following:

```
sc> setsc if_modem false
```

- Log in to the host system using the `scadm` utility, and type the following:

```
# scadm set if_modem false
```

mgt_mailalert

Use this variable to configure email alerts. The procedure for setting up email alerts varies slightly, depending on which method you use. You can specify up to eight email addresses.

TABLE 5-2 mgt_mailalert Tasks

Task	ALOM Shell Command	scadm Utility
Specify a value	“setupsc” on page 70.	
View the current value	“showsc” on page 88.	“scadm show” on page 152.
Set or change the value(s),	“setsc” on page 69.	“scadm set” on page 151.

▼ To Use the `setupsc` Command to Set the `mgt_mailalert` Variable

1. At the `sc>` prompt, type the following command:

```
sc> setupsc
```

The `setupsc` script prompts you as follows:

When you use the `setupsc` command to configure `mgt_mailalert`, you are prompted to answer the following questions. Default values appear in brackets after each question.

```
Enter the number of email recipients to configure [0]? 2
```

2. Type the number of email recipients.

The default value, 0, appears in brackets after the prompt.

For each recipient you specify, the script asks the following question, substituting *n* for the number of the recipient it is currently configuring (for example, if you enter 2 as in the above example, you are prompted to configure email alerts for address 1, and then for address 2).

```
Enter the email address for recipient n (maximum of 128 characters)
[]? johnsmith@sysadmin.com
```

3. Type the email address of the recipient, as shown in the above example.

ALOM accepts email addresses of up to 128 characters. The script then asks:

```
Enter the level of events to send to recipient <n> where valid
settings are 1 (critical), 2 (critical and major) and 3 (critical,
major and minor) [2]?
```

4. Type the response that corresponds to the levels of alerts you want sent to the recipient.

▼ To Use the `setsc` Command to Change the `mgt_mailalert` Variable

- To send an email alert, type the following command at the `sc>` prompt:

```
sc> setsc mgt_mailalert email level
```

Where *email* is the email address to which you want the alert sent, and *level* is the level of alerts (critical, major, or minor) you want sent.

For example:

```
sc> setsc mgt_mailalert kevin@abc.com 1
```

- To remove a `mgt_mailalert` entry, specify the values for this variable again, omitting the alert level.

For example, to remove the entry for the previous example, type the following:

```
sc> setsc mgt_mailalert kevin@abc.com
```

Related Information

- [“Overview of the ALOM Configuration Variables” on page 99.](#)
- [“Network Management and Notification Variables” on page 103.](#)
- [“showsc” on page 88.](#)

mgt_mailhost

Use this variable to specify the IP (Internet Protocol) addresses of one or two mail servers to which ALOM delivers email alerts.

TABLE 5-3 mgt_mailhost Tasks

Task	ALOM Shell Command	scadm Utility
Specify a value for a variable	“setupsc” on page 70.	
View the current value for this variable	“showsc” on page 88.	“scadm show” on page 152.
Change the value of the variable	“setsc” on page 69.	“scadm set” on page 151.

▼ To Use the setsc Command to Change the mgt_mailhost Variable

- At the `sc>` prompt, type the following command:

```
sc> setsc mgt_mailhost ipaddr1 ipaddr2
```

Where *ipaddr1* and *ipaddr2* are the IP addresses of the mail hosts you want to specify.

For example, to specify one mail server using `setsc`, type the following command at the `sc>` prompt, substituting the IP address of your mail server for *xxx.xxx.xxx.xxx*:

```
sc> setsc mgt_mailhost xxx.xxx.xxx.xxx
```

The default IP address is 0.0.0.0.

Note – The default IP address of 0.0.0.0 is not a valid IP address. You must enter a valid IP address for this command.

To specify two mail servers, type the following command. Use a single space to separate the IP address of the first mail server from the IP address of the second server.

```
sc> setsc mgt_mailhost xxx.xxx.xxx.xxx yyy.yyy.yyy.yyy
```

▼ To Use the `scadm` Utility to Change the `mgt_mailhost` Variable

- At the server's superuser prompt, type the following command:

```
# scadm set mgt_mailhost ipaddr1 ipaddr2
```

Where *ipaddr1* and *ipaddr2* are the IP addresses of the mail hosts you want to specify.

For example, to specify one mail server using `scadm set`, type the following command at the `#` prompt, substituting the IP address of your mail server for *xxx.xxx.xxx.xxx*:

```
# scadm set mgt_mailhost xxx.xxx.xxx.xxx
```

The default IP address is 0.0.0.0.

Note – The default IP address of 0.0.0.0 is not a valid IP address. You must enter a valid IP address for this command.

To specify two mail servers, type the following command. Use a single space to separate the IP address of the first mail server from the IP address of the second server.

```
# scadm set mgt_mailhost xxx.xxx.xxx.xxx yyy.yyy.yyy.yyy
```

Related Information

- [“Network Management and Notification Variables” on page 103.](#)
- [“Overview of the ALOM Configuration Variables” on page 99.](#)
- [“showsc” on page 88.](#)

netsc_dhcp

Use this variable to specify whether you want to use DHCP (Dynamic Host Configuration Protocol) to obtain your network configuration. The available values are `true` and `false`. The default value is `false`.

TABLE 5-4 netsc_dhcp Tasks

Task	ALOM Shell Command	scadm Utility
Specify a value for a variable	“setupsc” on page 70.	
View the current value	“showsc” on page 88.	“scadm show” on page 152.
Change the value of the variable	“setsc” on page 69.	“scadm set” on page 151.

Related Information

- [“Network Interface Variables” on page 101.](#)
- [“Overview of the ALOM Configuration Variables” on page 99.](#)
- [“showsc” on page 88.](#)

netsc_enetaddr

Use this variable to display the MAC address (Ethernet address) for ALOM in the standard six-byte format (for example, `0a:2c:3f:1a:4c:4d`). This variable is set at the factory. You cannot set or change this variable.

From the ALOM command shell:

- To view this current value for this variable, use the `showsc` command. See [“showsc” on page 88.](#)

Using the `scadm` utility:

- To view the current value, use the `show` command. See [“scadm show” on page 152.](#)

Related Information

- [“Network Interface Variables” on page 101.](#)
- [“Overview of the ALOM Configuration Variables” on page 99.](#)
- [“showsc” on page 88.](#)

netsc_ipaddr

Use this variable to specify the ALOM IP (Internet Protocol) address.

TABLE 5-5 netsc_ipaddr Tasks

Task	ALOM Shell Command	scadm Utility
Specify a value for a variable	“setupsc” on page 70.	
View the current value	“showsc” on page 88.	“scadm show” on page 152.
Change the value of the variable	“setsc” on page 69.	“scadm set” on page 151.

The default IP address supplied by this variable is 0.0.0.0.

Note – If you are using DHCP to obtain your ALOM network configuration, you do not need to set this variable. If `netsc_dhcp` is set to `true`, then the `setupsc` script does not ask you to set `netsc_ipaddr`. See [“netsc_dhcp” on page 114](#) and [“setupsc” on page 70](#) for further information.

A typical IP address contains four sets of numbers between 0 and 255, separated by decimal points. This is referred to as standard dot notation.

If the IP address you specify does not work with the subnet mask and gateway addresses you specify, ALOM returns the following error message, substituting the values for `netsc_ipgateway` and `netsc_ipnetmask`:

```
Error: Invalid IP address for gateway address netsc_ipgateway and IP
netmask netsc_ipnetmask.
```

Check that all the values you entered are correct. See [“netsc_ipgateway” on page 116](#), and [“netsc_ipnetmask” on page 117](#) for more information. If you need help obtaining the correct IP address, ask your network administrator.

Related Information

- [“Network Interface Variables” on page 101.](#)
- [“Overview of the ALOM Configuration Variables” on page 99.](#)
- [“showsc” on page 88.](#)

netsc_ipgateway

Use this variable to specify the IP (Internet Protocol) address for the default IP gateway (also called a router). This gateway enables ALOM to access different subnetworks, other than the one to which it is connected.

TABLE 5-6 netsc_ipgateway Tasks

Task	ALOM Shell Command	scadm Utility
Specify a value for a variable	“setupsc” on page 70.	
View the current value	“showsc” on page 88.	“scadm show” on page 152.
Change the value of the variable	“setsc” on page 69.	“scadm set” on page 151.

The default IP address supplied by this variable is 0.0.0.0

Note – If you are using DHCP to obtain your ALOM network configuration, you do not need to set this variable. If `netsc_dhcp` is set to `true`, then the `setupsc` script does not ask you to set `netsc_ipgateway`. See [“netsc_dhcp” on page 114](#) and [“setupsc” on page 70](#) for further information.

A typical IP address contains four sets of numbers between 0 and 255, separated by decimal points. This is referred to as standard dot notation.

If the IP address you specify does not work with the subnet mask and ALOM IP addresses you specify, ALOM returns the following error message, substituting the values for `netsc_ipnetmask` and `netsc_ipaddr`:

```
Error: Invalid IP gateway address for IP address netsc_ipaddr and IP
netmask netsc_ipnetmask.
```

Check that all the values you entered are correct. See [“netsc_ipgateway” on page 116](#) and [“netsc_ipaddr” on page 115](#) for further information on these commands. If you need help obtaining the correct IP address, ask your network administrator.

Related Information

- [“Network Interface Variables” on page 101.](#)
- [“Overview of the ALOM Configuration Variables” on page 99.](#)

- [“showsc” on page 88](#)

netsc_ipnetmask

Use this variable to specify the ALOM IP (Internet Protocol) netmask.

TABLE 5-7 netsc_ipnetmask Tasks

Task	ALOM Shell Command	scadm Utility
Specify a value for a variable	“setupsc” on page 70.	
View the current value	“showsc” on page 88.	“scadm show” on page 152.
Change the value of the variable	“setsc” on page 69.	“scadm set” on page 151.

The default IP address supplied by this variable is 255.255.255.0 (Class C network).

Note – If you are using DHCP to obtain your ALOM network configuration, you do not need to set this variable. If `netsc_dhcp` is set to `true`, then the `setupsc` script does not ask you to set `netsc_ipnetmask`. See [“netsc_dhcp” on page 114](#) and [“setupsc” on page 70](#) for further information.

A typical IP address contains four sets of numbers between 0 and 255, separated by decimal points. This is referred to as standard dot notation.

If the IP address you specify does not work with the subnet mask and ALOM IP addresses you specify, ALOM returns the following error message, substituting the values for `netsc_ipnetmask` and `netsc_ipaddr`:

```
Error: Invalid IP netmask for IP address netsc_ipaddr and IP gateway
netsc_ipgateway.
```

Check that all the values you entered are correct. See [“netsc_ipgateway” on page 116](#) and [“netsc_ipaddr” on page 115](#) for further information on these commands. If you need help obtaining the correct IP address, ask your network administrator.

Related Information

- [“Network Interface Variables” on page 101.](#)
- [“Overview of the ALOM Configuration Variables” on page 99.](#)
- [“showsc” on page 88.](#)

netsc_tpelinktest

Use this variable to enable 10BASE-T Ethernet link integrity tests. If you are using ALOM in a hub that does not support Ethernet link integrity tests or that has them disabled, set this variable to `false`. Changes to this variable take effect after the next ALOM reset. Users on the Ethernet network will not be able to log in to ALOM while the tests are running.

TABLE 5-8 netsc_tpelinktest Tasks

Task	ALOM Shell Command	scadm Utility
Specify a value for a variable	“setupsc” on page 70.	
View the current value	“showsc” on page 88.	“scadm show” on page 152.
Change the value of the variable	“setsc” on page 69.	“scadm set” on page 151.

Note – ALOM and the local hub need Ethernet link integrity tests enabled or disabled consistently. If this setting is not consistent, communication might not be possible.

This variable works like the OpenBoot PROM environment variable `"tpelinktest?"`, which is available on some Sun platforms.

Related Information

- [“Network Interface Variables” on page 101.](#)
- [“Overview of the ALOM Configuration Variables” on page 99.](#)
- [“showsc” on page 88.](#)

sc_backupuserdata

This variable specifies whether the local user database on ALOM (that is, user, password, and permission information) should be backed up. When this variable is set to true, this data is backed up on the system configuration card (SCC) in systems that have an SCC. If your host server does not have an SCC, this variable has no effect.

If you are running the `setupsc` script, `setupsc` asks the following question:

```
Should the SC user database be stored on the SCC [n]?
```

The values for this variable are as follows.

- `true`—Backs up the user database to the SCC.
- `false`—No backup. (This is the default value).

TABLE 5-9 `sc_backupuserdata` Tasks

Task	ALOM Shell Command	scadm Utility
View the current value	<code>"showsc"</code> on page 88.	<code>"scadm show"</code> on page 152.
Change the value of the variable	<code>"setsc"</code> on page 69.	<code>"scadm set"</code> on page 151.

sc_clieventlevel

Use this variable to specify the level of ALOM events that you want ALOM to display in the ALOM shell during an ALOM session. There are four levels of events:

- 0 (None) – Display no events
- 1 (Critical) – Critical events only
- 2 (Major) – Critical and major events
- 3 (Minor) – Critical, major, and minor

The default value for this variable is 2 (Major).

TABLE 5-10 `sc_clieventlevel` Tasks

Task	ALOM Shell Command	scadm Utility
Specify a value for a variable	“setupsc” on page 70.	
View the current value	“showsc” on page 88.	“scadm show” on page 152.
Change the value of the variable	“setsc” on page 69.	“scadm set” on page 151.

Related Information

- [“Overview of the ALOM Configuration Variables” on page 99](#)
- [“Managed System Interface Variables” on page 102](#)
- [“showsc” on page 88](#)

`sc_cliprompt`

Use this variable to change the ALOM shell prompt. The default prompt is `sc>`.

You can specify any string of characters for the prompt, up to a maximum of 16 characters. The characters allowed in the string are alphanumeric, hyphen, and underscore.

TABLE 5-11 `sc_cliprompt` Tasks

Task	ALOM Shell Command	scadm Utility
Specify a value for a variable	“setupsc” on page 70.	
View the current value	“showsc” on page 88.	“scadm show” on page 152.
Change the value of the variable	“setsc” on page 69.	“scadm set” on page 151.

▼ To Use the `setsc` Command to Change the `sc_cliprompt` Variable

- At the `sc>` prompt, type the following command:

```
sc> setsc sc_cliprompt prompt
```

Where *prompt* is the desired ALOM command prompt.

For example, if your host name is `ernie` and your host's ALOM name is `ernie-sc`, type the following command to specify `ernie-sc` as your ALOM shell prompt:

```
sc> setsc sc_cliprompt ernie-sc  
ernie-sc>
```

In addition, you can set this variable through the `setupsc` command. See [“setupsc” on page 70](#). The `setupsc` command prompts you for the following:

```
Enter the SC cli prompt (maximum of 16 characters) [sc] ?
```

To use the default prompt of `sc>`, press Return.

▼ To Use the `scadm` Utility to Change the `sc_cliprompt` Variable

At the server's superuser prompt, type the following command:

```
# scadm set cliprompt prompt
```

Where *prompt* is the desired ALOM command prompt.

Related Information

- [“Overview of the ALOM Configuration Variables” on page 99.](#)
- [“System User Variables” on page 104.](#)
- [“showsc” on page 88.](#)

sc_clitimeout

Use this variable to specify the number of seconds that an ALOM shell session can be idle before an automatic logout occurs. You can specify values from 0 to 10,000 seconds. If you specify a value between 1 and 59 seconds, the variable will automatically be set to the minimum value of 60 seconds. The default value is 0 seconds (no idle time). If you specify a value that has more than five digits in it, the timeout will be set to 0.

Note – If the ALOM session is in console mode, automatic logout will not occur, even when this variable is set. Refer to [“console” on page 48](#).

For example, to set the automatic logout interval to 60 seconds, type the following command at the ALOM shell prompt:

```
sc> setsc sc_clitimeout 60
```

You can specify a value for the timeout using the `setupsc` command. Refer to [“setupsc” on page 70](#). The `setupsc` script prompts you to enter a value as follows:

```
Enter the SC CLI timeout in seconds (maximum of 10000s) [0]?
```

TABLE 5-12 sc_clitimeout Tasks

Task	ALOM Shell Command	scadm Utility
Specify a value for a variable	“setupsc” on page 70 .	
View the current value	“showsc” on page 88 .	“scadm show” on page 152 .
Change the value of the variable	“setsc” on page 69 .	“scadm set” on page 151 .

Related Information

- [“Overview of the ALOM Configuration Variables” on page 99](#).
- [“System User Variables” on page 104](#).
- [“showsc” on page 88](#).

sc_clipasswdecho

Use this variable to turn password echo on and off. When password echo is on, each character that a user types when logging in to ALOM is echoed to the screen with an asterisk (*). Note that the actual password is never echoed to the screen.

The default value for this variable is `y` (echo asterisks to screen).

For example, to change the value of this variable to `n` (no echo) type the following command at the ALOM shell prompt:

```
sc> setsc sc_clipasswdecho n
```

You can specify a value for this variable using the `setupsc` command. The `setupsc` script prompts you to enter a value as follows:

```
Should password entry echo '*'s [y] ?
```

TABLE 5-13 `sc_passwdecho` Tasks

Task	ALOM Shell Command	scadm Utility
Specify a value for a variable	“setupsc” on page 70.	
View the current value	“showsc” on page 88.	“scadm show” on page 152.
Change the value of the variable	“setsc” on page 69.	“scadm set” on page 151.

Related Information

- [“Overview of the ALOM Configuration Variables” on page 99.](#)
- [“System User Variables” on page 104.](#)
- [“showsc” on page 88.](#)

sc_customerinfo

Use this variable to store information about the host server, or any other information you want to enter that identifies the host server to ALOM. If you answer `y` when the `setupsc` utility asks `Do you wish to configure the SC parameters [y]?`, then the `setupsc` utility returns the following prompt:

```
Enter any customer data for this platform (maximum of 40
characters) []?
```

For example:

```
Enter any customer data for this platform (maximum of 40
characters) []? This is the test lab server.
```

See [“setupsc” on page 70](#) for more information about this command.

TABLE 5-14 sc_customer_info Tasks

Task	ALOM Shell Command	scadm Utility
Specify a value for a variable	“setupsc” on page 70.	
View the current value	“showsc” on page 88.	“scadm show” on page 152.
Change the value of the variable	“setsc” on page 69.	“scadm set” on page 151.

Related Information

- [“Overview of the ALOM Configuration Variables” on page 99.](#)
- [“System User Variables” on page 104.](#)
- [“showsc” on page 88.](#)

sc_escapechars

Use this variable to change the escape character sequence. The default escape character sequence you use to switch from a console session back to ALOM is `#.` (pound-period). You can specify between two characters and six characters to customize the escape character sequence.

You can specify a value for this variable using the `setupsc` command. The `setupsc` script prompts you to enter a value as follows:

```
Enter the console session escape sequence (2 characters). The first
character can be any printable characters or control-A through
control- Y except for control-C, control-D, control-H, control-J,
or control-M. The second character must be a ".". [#.]?
```

See [“setupsc” on page 70](#) for more information about that command.

TABLE 5-15 `sc_escapechars` Tasks

Task	ALOM Shell Command	scadm Utility
Specify a value for a variable	“setupsc” on page 70.	
View the current value	“showsc” on page 88.	“scadm show” on page 152.
Change the value of the variable	“setsc” on page 69.	“scadm set” on page 151.

Related Information

- [“Overview of the ALOM Configuration Variables” on page 99.](#)
- [“System User Variables” on page 104.](#)
- [“showsc” on page 88.](#)

`sc_powerondelay`

Use this variable to cause the server to wait for a short time before powering on. 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 is important when multiple servers in racks power on after a power outage.

You can set the power-on delay using the `setupsc` command. When the `setupsc` script asks the following question, type **y** to enable the delay or **n** to disable it:

```
Should poweron sequencing be disabled [y]?
```

See [“setupsc” on page 70](#) for more information about that command.

From the ALOM command shell and from the `scadm` utility, the values for this variable are `enable` and `disable`.

For example, from the `scadm` utility, type the following command to enable the delay:

```
# set sc_powerondelay enable
```

To disable the delay, type the following: .

```
# set sc_powerondelay disable
```

TABLE 5-16 `sc_powerondelay` Tasks

Task	ALOM Shell Command	<code>scadm</code> Utility
Specify a value for a variable	“setupsc” on page 70.	
View the current value	“showsc” on page 88.	“scadm show” on page 152.
Change the value of the variable	“setsc” on page 69.	“scadm set” on page 151.

Related Information

- [“Overview of the ALOM Configuration Variables” on page 99.](#)
- [“System User Variables” on page 104.](#)
- [“showsc” on page 88.](#)

`sc_powerstatememory`

ALOM runs as soon as power is applied to the host server, even if the server is powered off. When you first apply power to the host server, ALOM starts to run, but the server does not start up until you power it on.

The `sc_powerstatememory` variable enables you to specify the state of the host server as `false` (keep the host server off) or `true` (return the server to the state it was in when the power was removed). This 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 `sc_powerstatememory` variable is set to `false`, the host server remains off when power is restored. If the `sc_powerstatememory` variable is set to `true`, the host server restarts when the power is restored.

The values for this variable are as follows.

- `true` – "Remembers" the state of the host server when power was removed and returns the server to that state when power is reapplied.
- `false` – Keeps the server off when power is applied.

TABLE 5-17 `sc_powerstatememory` Tasks

Task	ALOM Shell Command	scadm Utility
Specify a value for a variable	"setupsc" on page 70.	
View the current value	"showsc" on page 88.	"scadm show" on page 152.
Change the value of the variable	"setsc" on page 69.	"scadm set" on page 151.

Related Information

- ["Overview of the ALOM Configuration Variables" on page 99.](#)
- ["System User Variables" on page 104.](#)
- ["showsc" on page 88.](#)

`ser_baudrate`

This variable sets the serial management port (SERIAL MGT) baud rate. Its value is preset and cannot be changed.

The default setting is 9600.

From the `sc>` prompt:

- To view the current setting for this variable, use the `showsc` command. See ["showsc" on page 88](#) for more information about this command.

Using the `scadm` utility:

- To view the current value for this variable, use the `theshow` command. See ["scadm show" on page 152.](#)

Related Information

- [“Overview of the ALOM Configuration Variables” on page 99.](#)
- [“System User Variables” on page 104.](#)
- [“showsc” on page 88.](#)

ser_data

This variable sets the number of serial management port (SERIAL MGT) data bits. Its value is preset and cannot be changed.

The default setting is 8.

From the `sc>` prompt:

- To view the current value for this variable, use the `showsc` command. See [“showsc” on page 88](#) for more information about this command.

Using the `scadm` utility:

- To view the current value for this variable, use the `theshow` command. See [“scadm show” on page 152](#).

Related Information

- [“Overview of the ALOM Configuration Variables” on page 99.](#)
- [“System User Variables” on page 104.](#)
- [“showsc” on page 88.](#)

ser_parity

This variable sets the serial management port (SERIAL MGT) parity. Its value is preset and cannot be changed.

The default setting is none.

From the `sc>` prompt:

- To view the current setting for this variable, use the `showsc` command. See [“showsc” on page 88](#) for more information about this command.

Using the `scadm` utility:

- To view the current value for this variable, use the `theshow` command. See [“scadm show” on page 152](#).

Related Information

- [“Serial Management Port Variables” on page 101.](#)
- [“Overview of the ALOM Configuration Variables” on page 99.](#)
- [“showsc” on page 88.](#)

`ser_stopbits`

This variable sets the number of serial management port (SERIAL MGT) stop bits. Its value is preset and cannot be changed.

The default setting is 1.

From the `sc>` prompt:

- To view the current setting for this variable, use the `showsc` command. See [“showsc” on page 88](#) for more information about this command.

Using the `scadm` utility:

- To view the current value for this variable, use the `show` command. See [“scadm show” on page 152.](#)

Related Information

- [“Serial Management Port Variables” on page 101.](#)
- [“Overview of the ALOM Configuration Variables” on page 99.](#)
- [“showsc” on page 88.](#)

`sys_autorestart`

ALOM has a “watchdog” function that monitors the host server and detects when the host encounters a hang condition or stops running. Use this variable to specify the action ALOM should take when the watchdog function times out while waiting for a response from the host. Note that when the watchdog function discovers a hang condition, the ALOM event log registers an event.

`sys_autorestart` has three options:

- `none` – Do nothing except log the event to the ALOM event log.
- `xir` – Perform an XIR (externally initiated reset). The timeout value for the XIR is set by the `sys_xirtimeout` variable (default timeout value is 900 seconds, or 15 minutes). See [“sys_xirtimeout” on page 137.](#)
- `reset` – Perform a server reset, booting to the Solaris operating environment. See [“reset” on page 62.](#)

The default value is `xir`.

Note – For the `xir` and `reset` options, an event is logged to the ALOM event log.

TABLE 5-18 `sys_autorestart` Tasks

Task	ALOM Shell Command	scadm Utility
Specify a value for a variable	“setupsc” on page 70.	
View the current value	“showsc” on page 88.	“scadm show” on page 152.
Change the value of the variable	“setsc” on page 69.	“scadm set” on page 151.

Related Information

- [“Overview of the ALOM Configuration Variables” on page 99.](#)
- [“Managed System Interface Variables” on page 102.](#)
- [“showsc” on page 88.](#)

`sys_bootfailrecovery`

The `sys_bootfailrecovery` variable tells ALOM what recovery action to take if the Netra system fails to boot after the value set in the `sys_maxbootfail` variable is met (see [“sys_maxbootfail” on page 136](#) for more information).

Note that the boot timer will be disabled for the host reset or reboot after the action set through the `sys_bootfailrecovery` variable is taken; it will not be enabled again until after the user application restarts the watchdog timer.

`sys_bootfailrecovery` has three options:

- `none` – Do nothing except log the event to the ALOM event log.
- `powercycle` – Power cycle the host system.
- `poweroff` – Power off the host system.

The default value is none.

TABLE 5-19 `sys_bootfailrecovery` Tasks

Task	ALOM Shell Command	scadm Utility
View the current value	“showsc” on page 88.	“scadm show” on page 152.
Change the value of the variable	“setsc” on page 69.	“scadm set” on page 151.

Related Information

- [“Overview of the ALOM Configuration Variables” on page 99.](#)
- [“Managed System Interface Variables” on page 102.](#)
- [“showsc” on page 88.](#)

`sys_bootrestart`

Use the `sys_bootrestart` variable to set the action that ALOM will take if the host fails to boot within the amount of time set through the `sys_bovertimeout` variable (see [“sys_bovertimeout” on page 132](#) for more information).

`sys_bootrestart` has three options:

- `none` – Do nothing.
- `xir` – Perform an XIR (externally initiated reset) if ALOM doesn’t get the watchdog enable message before the value set through the `sys_bovertimeout` variable is reached.
- `reset` – Perform a server reset, booting to the Solaris operating environment. See [“reset” on page 62.](#)

The default value is none.

Note – For the `xir` and `reset` options, an event is logged to the ALOM event log.

Note – If you set the `sys_bootrestart` property to `xir`, you must also set the OpenBoot PROM NVRAM variable `auto-boot-on-error?` to `true` and the `error-reset-recovery` variable to `boot`. In addition, for this option to work reliably, the system must reboot followed by an `xir`, which may not happen in all cases (for example, if the system fails to find the boot disk and drops down to the `ok` prompt). Because of these restrictions, you may want to set the `sys_bootrestart` property to `reset` for a more consistent behavior.

TABLE 5-20 `sys_bootrestart` Tasks

Task	ALOM Shell Command	scadm Utility
View the current value	“showsc” on page 88.	“scadm show” on page 152.
Change the value of the variable	“setsc” on page 69.	“scadm set” on page 151.

`sys_boottimeout`

ALOM will start a boot timeout timer once the host system is powered on or reset. If the host fails to boot by the time this timer expires, it will perform an action that you set through the `sys_bootrestart` variable (see [“sys_bootrestart” on page 131](#) for more information). Use the `sys_boottimeout` variable to set the amount of time that ALOM will wait for the host to boot before performing that action. The default value is 120 seconds.

Note – Choose the value of this variable carefully. Consider the system configuration and the typical amount of time it takes for the system to boot up completely when deciding on a value for this variable. You must also have the auto-boot setting in the OpenBoot PROM for the Netra system set to `true`; if you have the auto-boot setting set to `false`, the system will not reboot automatically after being powered on or reset and ALOM will view this as a boot failure.

TABLE 5-21 `sys_boottimeout` Tasks

Task	ALOM Shell Command	scadm Utility
View the current value	“showsc” on page 88.	“scadm show” on page 152.
Change the value of the variable	“setsc” on page 69.	“scadm set” on page 151.

▼ To Use the `setsc` Command to Change the `sys_boottimeout` Variable

- At the `sc>` prompt, type the following command:

```
sc> setsc sys_boottimeout value
```

Where *value* is the amount of time in seconds that ALOM will wait for the watchdog enable message before performing the action you set through the `sys_bootrestart` variable.

For example, to set the ALOM boot timeout value to 240 seconds, type the following command at the `sc>` prompt:

```
sc> setsc sys_boottimeout 240
```

Related Information

- [“Overview of the ALOM Configuration Variables” on page 99.](#)
- [“Managed System Interface Variables” on page 102.](#)
- [“showsc” on page 88.](#)

`sys_consolegrablogout`

The `sys_consolegrablogout` variable determines whether ALOM should automatically log out of a user session if the console session write lock is taken by another user. See `console` on page 44 for more information.

Note – For the Netra 240 and 440 servers, this variable is always set to true (the default) and cannot be changed.

- To see the status of this parameter, at the `sc>` prompt type:

```
sc> showsc sys_consolegrablogout
```

Related Information

- [“Overview of the ALOM Configuration Variables” on page 99.](#)
- [“Managed System Interface Variables” on page 102.](#)

- [“showsc” on page 88.](#)

sys_enetaddr

This variable is automatically configured by the system software, so you cannot set it or change it. The value is read and determined from the server’s Ethernet address (MAC address) and then stored as a variable in ALOM.

From the `sc>` prompt:

- To view the current setting for this variable, use the `showsc` command. See [“showsc” on page 88](#) for more information about this command.

Using the `scadm` utility:

- To view the current value for this variable, use the `show` command. See [“scadm show” on page 152.](#)

Related Information

- [“Overview of the ALOM Configuration Variables” on page 99.](#)
- [“Managed System Interface Variables” on page 102.](#)
- [“showsc” on page 88.](#)

sys_eventlevel

Use this variable to specify the level of ALOM events that you want ALOM to send to the host server. There are four levels of events:

- 0 (None) – Send no events
- 1 (Critical) – Critical events only
- 2 (Major) – Critical and major events
- 3 (Minor) – Critical, major, and minor events

The default value for this variable is 2 (Major).

TABLE 5-22 sys_eventlevel Tasks

Task	ALOM Shell Command	scadm Utility
Specify a value for a variable	“setupsc” on page 70.	
View the current value	“showsc” on page 88.	“scadm show” on page 152.
Change the value of the variable	“setsc” on page 69.	“scadm set” on page 151.

Related Information

- [“Overview of the ALOM Configuration Variables” on page 99.](#)
- [“Managed System Interface Variables” on page 102.](#)
- [“showsc” on page 88.](#)

sys_hostname

The `sys_hostname` variable is automatically configured by the system software, so you cannot set it or change it. When the host server boots and starts to communicate with ALOM, ALOM reads the host name from the server’s operating system and stores it in this variable.

From the `sc>` prompt:

- To view the current setting for this variable, use the `showsc` command. Refer to [“showsc” on page 88](#) for more information about this command.

Using the `scadm` utility:

- To view the current value for this variable, use the `theshow` command. Refer to [“scadm show” on page 152.](#)

Related Information

- [“Overview of the ALOM Configuration Variables” on page 99.](#)
- [“Managed System Interface Variables” on page 102.](#)
- [“showsc” on page 88.](#)

sys_maxbootfail

The `sys_maxbootfail` variable allows you to set a limit to the number of times that the recovery action applied through the `sys_bootrestart` variable is allowed to be taken, keeping the system from performing the recovery action continuously (see “[sys_bootrestart](#)” on page 131 for more information). The default value for this variable is 3.

TABLE 5-23 `sys_maxbootfail` Tasks

Task	ALOM Shell Command	scadm Utility
View the current value	“ showsc ” on page 88.	“ scadm show ” on page 152.
Change the value of the variable	“ setsc ” on page 69.	“ scadm set ” on page 151.

Related Information

- “[Overview of the ALOM Configuration Variables](#)” on page 99.
- “[Managed System Interface Variables](#)” on page 102.
- “[showsc](#)” on page 88.

sys_wdtimeout

Use the `sys_wdtimeout` variable to set the ALOM watchdog timeout. The default value is 60 seconds.

TABLE 5-24 `sys_wdtimeout` Tasks

Task	ALOM Shell Command	scadm Utility
View the current value	“ showsc ” on page 88.	“ scadm show ” on page 152.
Change the value of the variable	“ setsc ” on page 69.	“ scadm set ” on page 151.

▼ To Use the `setsc` Command to Change the `sys_wdtimeout` Variable

- At the `sc>` prompt, type the following command:

```
sc> setsc sys_wdtimeout value
```

Where *value* is the amount of time in seconds that you want to set the ALOM watchdog timeout value to.

For example, to set the ALOM watchdog timeout value to 120 seconds, type the following command at the `sc>` prompt:

```
sc> setsc sys_wdtimeout 120
```

Related Information

- [“Overview of the ALOM Configuration Variables” on page 99.](#)
- [“Managed System Interface Variables” on page 102.](#)
- [“showsc” on page 88.](#)

sys_xirtimeout

Note – This variable works only when the `sys_autorestart` variable is set to `xir`.

This variable enables you to set a timeout value for the XIR (externally initiated reset) you specified using the `sys_autorestart` variable. If the XIR does not complete within the specified number of seconds, ALOM aborts the XIR and forces the server to perform a hard reset instead. If you specify a timeout of zero seconds, the XIR never times out after a watchdog XIR event.

If you want to specify a value other than zero seconds, choose a timeout value of 900 to 10,800 seconds (15 minutes to 3 hours). If you specify a value between 1 and 899, the value defaults to 900. If you specify a value over 10,800, that value defaults to 10,800. If you specify a value that has more than five digits in it, the timeout will be set to 0.

You can specify a value for this variable while running the `setupsc` command. When you set this variable using `setupsc`, the following prompt is displayed:

```
How many seconds should be allowed for an XIR to complete (maximum
timeout of 10800s) [900]?
```

TABLE 5-25 sys_xirtimeout Tasks

Task	ALOM Shell Command	scadm Utility
Specify a value for a variable	“setupsc” on page 70.	
View the current value	“showsc” on page 88.	“scadm show” on page 152.
Change the value of the variable	“setsc” on page 69.	“scadm set” on page 151

Related Information

- [“Overview of the ALOM Configuration Variables” on page 99.](#)
- [“Managed System Interface Variables” on page 102.](#)
- [“showsc” on page 88.](#)

Using the `scadm` Utility

This chapter introduces the System Controller Administration (`scadm`) utility, and shows how to use it in managing the system. The chapter consists of:

- [“Overview of the `scadm` Utility” on page 139](#)
 - [“To Get Started With the `scadm` Utility” on page 140](#)
 - [“To Set Your Path to the `scadm` Utility” on page 140](#)
 - [“List of `scadm` Commands” on page 141](#)
 - [“Descriptions of `scadm` Commands” on page 143](#)
-

Overview of the `scadm` Utility

The System Controller Administration (`scadm`) utility, which is part of the Solaris Operating System, enables you to perform many ALOM tasks while logged in to the host server.

The `scadm` commands control several functions, and some allow you to view or set ALOM environment variables. See [“List of `scadm` Commands” on page 141](#) for an overview of the commands, and [“Using ALOM Configuration Variables” on page 99](#) for an explanation of configuration variables.

You must be logged in to the host as superuser before you can use the `scadm` utility.

Note – The `scadm` utility does not work when you are running SunVTS™ software on the server.

The `scadm` utility sends its output to `stdout`. You can use `scadm` in scripts to manage and configure ALOM from the host system. See [“Creating a Script to Send Alerts From ALOM” on page 35](#).

For more information about the `scadm` utility, refer to the `scadm` man page. Type **man scadm** at the system prompt. The man page for `scadm` is located on the Solaris HW Supplement CD for your version of the Solaris Operating System.

▼ To Get Started With the `scadm` Utility

1. **Set your path to the `scadm` utility.**
See [“To Set Your Path to the `scadm` Utility” on page 140.](#)
2. **Log in to the host system as `root`.**
3. **Type `scadm` at the superuser prompt, and then type the command you want to use.**
See [“List of `scadm` Commands” on page 141](#)

Note – The `scadm` utility does not work when you are running SunVTS software on the server.

Related Information

[“List of `scadm` Commands” on page 141.](#)

▼ To Set Your Path to the `scadm` Utility

To set your path to the `scadm` utility, perform these two steps:

1. **Find out the proper platform name for your system.**
See [“To Find Your System’s Platform Name” on page 141.](#)
2. **Set the path to `scadm` on your system.**

Refer to your Solaris Operating System documentation for more information about how to set the path. The procedure differs depending on which command shell you are using in the Solaris Operating System, as well as which file you want to use to contain path information.

The `scadm` utility resides in the following directory:

```
/usr/platform/platform-name/sbin
```

Where *platform-name* is the platform name for your system.

▼ To Find Your System's Platform Name

- At the system prompt, type `uname -i`.

The system returns a result similar to the following:

```
% uname -i  
SUNW,Netra-x40
```

The result you see depends on your server model. This example has the default installation directory for the ALOM software in:

```
/usr/platform/SUNW,Netra x40/sbin
```

where Netra x40 is either Netra 240 or Netra 440, depending on your system.

Related Information

- [“To Get Started With the `scaadm` Utility” on page 140](#)
- [“List of `scaadm` Commands” on page 141](#)
- [“`scaadm` Error Messages” on page 174](#)

List of `scaadm` Commands

The `scaadm` commands provide equivalent functionality to that of the ALOM commands.

Summary of `scadm` Commands

The following list describes the commands for the `scadm` utility.

TABLE 6-1 List of `scadm` Commands

Command	Description	Refer to:
<code>scadm help</code>	Displays a list of <code>scadm</code> commands and brief descriptions and syntax for each command.	" <code>scadm help</code> " on page 146.
<code>scadm date</code>	Displays the date and time.	" <code>scadm date</code> " on page 143.
<code>scadm shownetwork</code>	Displays the current network configuration information.	" <code>scadm shownetwork</code> " on page 153.
<code>scadm show</code>	Displays the current value of the specified ALOM configuration variable.	" <code>scadm show</code> " on page 152.
<code>scadm loghistory</code>	Displays the events logged in the ALOM event buffer.	" <code>scadm loghistory</code> " on page 148.
<code>scadm resetrsc [- s]</code>	Resets ALOM immediately. The <code>-s</code> option specifies a soft reset.	" <code>scadm resetrsc</code> " on page 149.
<code>scadm set</code>	Sets the specified ALOM configuration variable to the assigned value.	" <code>scadm set</code> " on page 151.
<code>scadm download</code>	Downloads main or bootmon firmware to the ALOM flash PROM	" <code>scadm download</code> " on page 145.
<code>scadm modem_setup</code>	Communicates with the modem on supported platforms. The Netra does not support outgoing modem transactions.	" <code>scadm modem_setup</code> " on page 149.
<code>scadm send_event [- c]</code>	Sends a custom message as an event. The <code>-c</code> option assigns a critical level to the event.	" <code>scadm send_event</code> " on page 150.
<code>scadm version [-v]</code>	Displays ALOM version information. The <code>-v</code> option provides verbose output.	" <code>scadm version</code> " on page 160.
<code>scadm useradd</code>	Adds an ALOM user account.	" <code>scadm useradd</code> " on page 154.
<code>scadm userdel</code>	Deletes an ALOM user account.	" <code>scadm userdel</code> " on page 155.

TABLE 6-1 List of `scadm` Commands (Continued)

Command	Description	Refer to:
<code>scadm usershow</code>	Shows the information for an ALOM user account.	“scadm usershow” on page 156.
<code>scadm userpassword</code>	Sets or changes a user’s password.	“scadm userpassword” on page 157.
<code>scadm userperm</code>	Sets or changes a user’s permissions.	“scadm userperm” on page 158.

▼ To Use the `scadm` Commands

Make sure that you have set your path to the `scadm` utility and have logged in to the host system as root; or use the `cd` command to move to the `/usr/platform/platform/sbin` directory, where *platform* is the platform name for your host server. See [“To Set Your Path to the `scadm` Utility” on page 140](#) to set your path and find out the platform name of your server.

- **To use a command, type the following at the host system’s superuser prompt. Substitute the command you want to use for *command*.**

```
# scadm command
```

Related Information

[“scadm Error Messages” on page 174.](#)

Descriptions of `scadm` Commands

`scadm date`

Use the `scadm date` command to show the ALOM date and time. This command works like the ALOM shell command `showdate`.

Note – Your host server uses local time, but ALOM uses Coordinated Universal Time (UTC). ALOM does not accept time zone conversions or daylight time changes.

▼ To Use the `scadm date` Command

1. Log in to the host server as root.
2. At the system's superuser prompt, type the following command:

```
# scadm date
```

For example:

```
# scadm date  
MON SEP 16 21:45:00 2002 UTC
```

The `date` command accepts values in the `mmddHHMMccyy.SS` format as described below.

TABLE 6-2 `scadm date` Command Options

Option	Description
mm	Month
dd	Day
HH	Hour (24-hour system)
MM	Minutes
.SS	Seconds
cc	Century (first two digits of the year)
yy	Year (last two digits of the year)

Related Information

- [“List of `scadm` Commands” on page 141](#)
- [“`scadm` Error Messages” on page 174.](#)

scadm download

Use the `download` command to program the ALOM firmware. This command works like the ALOM shell command `flashupdate`. See “[flashupdate](#)” on [page 52](#) for more on that command.

You can find the links to the download sites on the ALOM product page at: <http://www.sun.com/servers/alom.html>

The ALOM firmware contains two parts: the main image and the boot monitor (bootmon).

Note – Downloading the main firmware image can take up to 10 minutes. The boot monitor (bootmon) image download process can take several minutes to complete. After the download is complete, ALOM automatically resets.



Caution – Do not use the `scadm resetrsc` command while a firmware update is in progress. If you need to reset ALOM manually, wait until after the update is complete. Otherwise, you could corrupt the ALOM firmware and render it unusable.

▼ To Use the `scadm download` Command

1. Log in to the host server as root.
2. To program the main image, at the superuser prompt, type the following command:

```
# scadm download filename
```

Where *filename* is the name of the main image file you want to download.

For example:

To download the ALOM main firmware:

```
# scadm download/usr/platform/platform-name/lib/images/alommainfw
```

Where *platform-name* is the platform name for your host server.

3. To program the boot monitor (bootmon), at the superuser prompt, type the following command:

```
# scadm download boot filename
```

Where *filename* is the name of the boot monitor file you want to download.

For example:

To download the bootmon image:

```
# scadm download boot /usr/platform/platform-  
name/lib/images/alombootfw
```

Where *platform-name* is the platform name for your host server. See [“To Set Your Path to the scadm Utility” on page 140](#) to set your path and find out the platform name of your server.

Command Option

The download command uses one option: boot.

This option directs the download command to program the boot monitor with the downloaded file you specify.

Note – Downloading the main firmware image may take up to 10 minutes. The bootmonitor download process can take several minutes to complete.

Related Information

- [“List of scadm Commands” on page 141](#)
- [“scadm Error Messages” on page 174.](#)

scadm help

Use the help command to list the available commands for the scadm utility and shows their syntax.

▼ To Use the `scadm help` Command

1. Log in to the host server as superuser (root).
2. At the system's superuser prompt, type the following command:

```
# scadm help
```

For example:

CODE EXAMPLE 6-1 `scadm help` Commands

```
# scadm help
USAGE: scadm <command> [options]
For a list of commands, type "scadm help"
scadm- COMMANDS SUPPORTED
help, date, set, show, resetrsc, download, send_event, modem_setup, useradd,
userdel, usershow, userpassword, useperm, shownetwork, loghistory, version
SCADM - COMMAND DETAILS
scadm help => this message
scadm date [-s] | [[mmdd]HHMM | mmddHHMM[cc]yy] [.SS] => print or set date
scadm set <variable> <value> => set variable to value
scadm show [variable] => show variable(s)
scadm resetrsc [-s] => reset SC (-s soft reset)
scadm download [boot] <file> => program firmware or [boot] monitor
scadm send_event [-c] "message" => send message as event (-c CRITICAL)
scadm modem_setup => connect to modem port
scadm useradd <username> => add SC user account
scadm userdel <username> => delete SC user account
scadm usershow [username] => show user details
scadm userpassword <username> => set user password
scadm userperm <username> [cuar] => set user permissions
scadm shownetwork => show network configuration
scadm loghistory => show SC event log
scadm version [-v] => show SC version (-v verbose)
#
```

Related Information

- [“List of `scadm` Commands” on page 141](#)
- [“`scadm` Error Messages” on page 174.](#)

scadm loghistory

Use the `scadm loghistory` command to display the history of all events logged in the ALOM event buffer. These events include server reset events and all ALOM or `scadm` commands that change the state of the system (such as `reset`, `poweroff`, and `poweron` in the ALOM command shell). This command is similar to the ALOM shell command `showlogs`.

Each event recorded in the log has the following format:

```
date time errorcode: message
```

Where `date time` is the date and time at which the event occurred, as recorded by ALOM, `errorcode` is the code for the logged event, and `message` is a short description of the event.

▼ To Use the `scadm loghistory` Command

1. Log in to the host server as superuser (`root`).
2. At the superuser prompt, type the following command:

```
# scadm loghistory.
```

The following example shows an event log entry:

```
MAR 08 13:41:21 wgs-48-49: 00060000: "SC Login: User admin Logged on."
```

Note – Timestamps recorded in console logs reflect server time. Timestamps shown in the ALOM event log reflect UTC (Coordinated Universal Time).

Related Information

- [“List of `scadm` Commands” on page 141](#)
- [“`scadm` Error Messages” on page 174.](#)

scadm modem_setup

The `scadm modem_setup` command is not supported on the Netra server. For information about how to set up an external modem to support incoming transactions, see the description of the `if_modem` variable (see [“if_modem” on page 108](#)).

Related Information

- [“List of scadm Commands” on page 141](#)
- [“scadm Error Messages” on page 174](#).

scadm resetrsc

Use the `scadm resetrsc` command to reset ALOM. This command works like the ALOM shell command `resetrsc`. See [“resetrsc” on page 63](#) for more information on that command.



Caution – Do not use the `scadm resetrsc` command while a firmware update (`scadm download` or `flashupdate`) is in progress. If you need to reset ALOM, wait until after the update is complete. Otherwise, you could corrupt the ALOM firmware and render it unusable. See [“scadm download” on page 145](#) and [“flashupdate” on page 52](#) for more information.

▼ To Use the `scadm resetrsc` Command

1. Log in to the host server as superuser (root).
2. At the superuser prompt, type the following command:

```
# scadm resetrsc option
```

Where *option* is `-s`, if desired.

This command causes ALOM to reset immediately.

Note – The host server does not respond after you type the `scadm resetrsc` command; the reset occurs immediately.

Command Option

The `resetrsc` command uses one option: `-s`.

This option causes a soft reset to occur. If you type `scadm resetrsc` without using the `-s` option, a hard reset occurs.

Related Information

- [“List of scadm Commands” on page 141](#)
- [“scadm Error Messages” on page 174.](#)

`scadm send_event`

All events recorded in the ALOM event log can be sent as email alerts.

Use the `scadm send_event` command to send the events to the following destinations:

- **Email**—You can send alerts to email addresses that you configure using the `mgt_mailalert` configuration variable. See [“mgt_mailalert” on page 109](#) for more information.
- **The server’s syslog**—You set up this option using the `sys_eventlevel` configuration variable. See [“sys_eventlevel” on page 134.](#)
- **All users currently logged in to ALOM**—You configure this option using the `sc_clieventlevel` configuration variable. See [“sc_clieventlevel” on page 119.](#)

▼ To Use the `scadm send_event` Command

1. **Log in to the host server as superuser (root).**
2. **At the superuser prompt, type the following command:**

```
# scadm send_event "message"
```

Where *message* is your customized message.

For example:

Using the `-c` option sends a critical event:

```
# scadm send_event -c "Restarting the server at 4:00 PM"
```

Using the `send_event` without the `-c` option sends a major event:

```
# scadm send_event "TEST"
```

Related Information

- [“List of scadm Commands” on page 141](#)
- [“scadm Error Messages” on page 174](#)
- [“Sending Customized Alerts” on page 32.](#)

scadm set

Use the `scadm set` command to set an ALOM configuration variable to the desired value. This command works like the ALOM shell command `setsc`. See [“Overview of the ALOM Command Shell” on page 39](#) for more information.

▼ To Use the `scadm set` Command

1. Log in to the host server as superuser (root).
2. At the superuser prompt, type the following command:

```
# scadm set variable value
```

Where *variable* is the name of the variable you want to set, and *value* is its value.

For example:

```
# scadm set netsc_ipaddr 123.123.123.123
```

Related Information

- [“List of scadm Commands” on page 141](#)
- [“scadm Error Messages” on page 174.](#)

scadm show

Use the `scadm show` command to view the value for the specified ALOM configuration variable. This command works like the ALOM shell command `showsc`. See [“Overview of the ALOM Command Shell” on page 39](#) for more information on that command.

▼ To Use the `scadm show` Command

1. Log in to the host server as superuser (root).
2. At the superuser prompt, type the following command:

```
# scadm show variable
```

Where *variable* is the name of the variable.

For example:

```
# scadm show netsc_ipaddr  
xxx.xxx.xxx.xxx
```

Typing `scadm show` with no variables displays the values for all variables.

CODE EXAMPLE 6-2 Example of `scadm show` Output

```
# scadm show  
if_network="true"  
if_modem="false"  
if_emailalerts="false"  
sys_autorestart="xir"  
sys_xirtimeout="900"  
netsc_tpelinktest="true"  
netsc_dhcp="false"  
netsc_ipaddr="129.148.40.233"  
netsc_ipnetmask="255.255.255.0"  
netsc_ipgateway="129.148.40.254"
```

CODE EXAMPLE 6-2 Example of `scadm show` Output (Continued)

```
mgt_mailhost=""
mgt_mailalert=""
sc_customerinfo=""
sc_escapechars="#."
sc_powerondelay="true"
sc_powerstatememory="false"
sc_clipasswdecho="true"
sc_cliprompt="sc"
sc_clitimeout="0"
sc_clieventlevel="2"
sc_backupuserdata="true"
sys_eventlevel="2"
```

Related Information

- [“List of scadm Commands” on page 141](#)
- [“scadm Error Messages” on page 174](#)

scadm shownetwork

Use the `scadm shownetwork` command to display the current network configuration. This command is similar to the ALOM shell command `shownetwork`. See [“shownetwork” on page 86](#) for more on that command.

Note – If you have changed the network configuration since the last time you rebooted the host server, the output from this command might not show the updated configuration information. Reboot your server to see the changed configuration.

▼ To Use the `scadm shownetwork` Command

The command output appears similar to the following example, with the actual IP addresses, netmask, and Ethernet addresses in your network configuration in place of `XXX.XXX.XXX.XXX`.

1. **Log in to the host server as superuser (root).**

2. At the superuser prompt, type the following command:

```
# scadm shownetwork  
SC network configuration is:  
IP address: XXX.XXX.XXX.XXX  
Gateway Address: XXX.XXX.XXX.XXX  
Netmask: XXX.XXX.XXX.XXX  
Ethernet Address: XX:XX:XX:XX:XX:XX
```

Related Information

- [“List of scadm Commands” on page 141](#)
- [“scadm Error Messages” on page 174](#)

scadm useradd

Use the `scadm useradd` command to add a user account to ALOM. This command is similar to the ALOM shell command `useradd`. See [“useradd” on page 91](#) for more on that command.

You can add a maximum of 15 unique user accounts to ALOM.

▼ To Use the `scadm useradd` Command

1. Log in to the host server as superuser (root).
2. At the superuser prompt, type the following command:

```
# scadm useradd username
```

Where *username* is the name of the user you want to add.

username has the following restrictions:

- Valid characters are alphabetic (letter) and numeric characters, period (.), underscore (_), and hyphen (-).
- It can have a maximum length of 16 characters, at least one of which must be a lowercase alphabetic character.
- The first character must be alphabetic.

To assign a password to a user name, use the `scadm userpassword` command. See [“scadm userpassword” on page 157](#).

To set permission levels for a user name, use the `scadm userperm` command. See [“scadm userperm” on page 158](#).

Related Information

- [“List of scadm Commands” on page 141](#)
- [“scadm Error Messages” on page 174](#)

scadm userdel

Use the `scadm userdel` command to delete a user account from ALOM. This command is similar to the ALOM shell command `userdel`. See [“userdel” on page 92](#) for more on that command.

Note – You cannot delete the default `admin` account from ALOM.

▼ To Use the `scadm userdel` Command

1. Log in to the host server as superuser (root).
2. At the superuser prompt, type the following command:

```
# scadm userdel username
```

Where *username* is the name of the user you want to delete.

Related Information

- [“List of scadm Commands” on page 141](#)
- [“scadm Error Messages” on page 174](#)

scadm usershow

The `scadm usershow` command shows a specified user's ALOM account, along with each user's permissions and whether a password has been assigned. See "[scadm userperm](#)" on page 158, and "[scadm userpassword](#)" on page 157 for more on permissions and passwords. To see this information for a particular user, type the desired user name after the `usershow` command. If you do not enter any user names, `usershow` displays all of the accounts. This command is similar to the ALOM shell command `usershow`. Refer to "[usershow](#)" on page 96 for more on that command.

▼ To Use the `scadm usershow` Command

1. Log in to the host server as superuser (root).
2. To see the information for one user, type the following command at the superuser prompt:

```
# scadm usershow username
```

Where *username* is the name of the specified user whose information you want to show, if desired. If you do not any user names, `usershow` displays all of the accounts.

For example:

```
#scadm usershow
Username      Permissions   Password?
-----
admin         cuar         Assigned
wwilson       cuar         Assigned
jadams        --cr         None
```

CODE EXAMPLE 6-3 Example of `scadm usershow` Specific User Output

```
#scadm usershow wwilson
Username      Permissions   Password?
-----
wwilson       cuar         Assigned
```

Related Information

- [“List of scadm Commands” on page 141](#)
- [“scadm Error Messages” on page 174](#)

scadm userpassword

Use the `scadm userpassword` command to set or change the password for the specified user account. This command is similar to the ALOM shell command `userpassword`. See [“userpassword” on page 93](#) for more on that command.

▼ To Use the `scadm userpassword` Command

1. Log in to the host server as superuser (root).
2. At the superuser prompt, type the following command:

```
# scadm userpassword username
```

Where *username* is the name of the user for whom you want to set or change the password.

This command does not prompt you for the existing password.

For example:

```
# scadm userpassword msmith  
New password:  
Re-enter new password:
```

Password Restrictions

Passwords have the following restrictions:

- They can contain at least six to eight characters.
- They must contain at least two alphabetic characters (uppercase or lowercase letter) and at least one numeric or special character. Alphabetic characters can be both uppercase and lowercase.

- They must differ from your login name and any reverse or circular shift of your login name. For comparison purposes, uppercase and lowercase letters are equivalent.
- The new password must differ from the old by at least three characters. For comparison purposes, uppercase and lowercase letters are equivalent.

Related Information

- [“List of scadm Commands” on page 141](#)
- [“scadm Error Messages” on page 174](#)

scadm userperm

Use the `userperm` command to set or change permission levels for a specified user account. This command is similar to the ALOM shell command `userperm`. See [“userperm” on page 94](#) for more information.

Note – If there is only one account on ALOM (admin account), that account cannot be deleted, nor can you remove the **a** or **u** user permissions from that account.

Permission Levels

All users can read ALOM information, but you need authorization to perform ALOM functions or change settings. There are four permission levels that increase a user’s authorization.

TABLE 6-3 `scadm userperm` Permission Levels

Permission Level	Description
a	Administrative. This user is authorized to change the state of ALOM configuration variables. See “Using ALOM Configuration Variables” on page 99 .

TABLE 6-3 `scadm userperm` Permission Levels (*Continued*)

Permission Level	Description
u	User administration. This user is authorized to add users and delete users, change user permissions, and change the authorization level of other users. See “scadm useradd” on page 154 and “scadm userdel” on page 155 for more information.
c	Console permission. This user is authorized to connect to the host server system console. See “console” on page 48 for more information on the <code>console</code> command.
r	Reset/power permission. This user is authorized to reset the host server, power the server on and off, and reboot ALOM. See “reset” on page 62 , “poweron” on page 59 , “poweroff” on page 58 , and “scadm resetrsc” on page 149 for detailed information of these processes.

If you do not assign a permission level to the specified user (that is, you assigned zero permission levels), then that user has read-only permission. This is the default level for a new ALOM user account.

Note – The default user permission for the account that you use when you start ALOM for the first time is `cuar` (full authorization). This account is the `admin` account, and it cannot be deleted, nor can its permissions be changed.

To see a user’s permission levels, use the `usershow` command. See [“scadm usershow” on page 156](#).

▼ To Use the `scadm userperm` Command

1. Log in to the host server as superuser (root).
2. At the superuser prompt, type the following command:

```
# scadm userperm username perms
```

Where *username* is the specified user account and *perms* is the permission level(s) you want to set or change (if any).

For example, to assign `c` and `r` user permissions to user `msmith`, you would type the following from the system superuser prompt:

```
# scadm userperm msmith cr
```

Related Information

- [“List of scadm Commands” on page 141](#)
- [“scadm Error Messages” on page 174](#)

scadm version

Use the `scadm version` command to display ALOM version information.

▼ To Use the `scadm version` Command

1. Log in to the host server as superuser (root).
2. At the superuser prompt, type the following command:

```
# scadm version option
```

Where *option* is `-v`, if desired.

For example:

```
# scadm version  
SC Version v1.4  
SC Bootmon Version: v1.4.0  
SC Firmware Version: v1.4.0
```

```
# scadm version -v
SC Version v1.4
SC Bootmon Version: v1.4.0
SC Bootmon checksum: DE232BFF

SC Firmware Version: v1.4.0
SC Build Release: 06

SC firmware checksum: EAC2EF86

SC firmware built: Feb 23 2004, 15:17:59

SC System Memory Size 8MB

SC NVRAM Version = a
```

Related Information

- [“List of scadm Commands” on page 141](#)
- [“scadm Error Messages” on page 174](#)

Using OpenBoot PROM

Some features in the OpenBoot PROM support ALOM. To use these features, type a command at the `ok` prompt. This chapter contains information on the following headings:

- [“Switching between the ALOM Command Shell and the OpenBoot PROM Prompt” on page 161](#)
- [“The `reset-sc` Command” on page 162](#)
- [“The `.sc` Command” on page 162](#)

Switching between the ALOM Command Shell and the OpenBoot PROM Prompt

If the Solaris Operating System is running on the host server, type the following commands at the `sc>` prompt:

```
sc> break
Are you sure you want to send a break to the system [y/n]? y
sc> console
ok
```

If the host server is already at the OpenBoot PROM prompt (`ok`), type the following command at the `sc>` prompt:

```
sc> console
ok
```

To switch from the OpenBoot PROM prompt to the ALOM command shell, type the following command at the `ok` prompt:

```
ok #.  
sc>
```

Note – `#.` (pound-period) is the default escape character sequence to switch to the ALOM command prompt. To change the escape character sequence, use the `sc_escapechars` variable. See [“`sc_escapechars`” on page 124](#).

To return to the Solaris Operating System from the `ok` prompt, type the following command:

```
ok go
```

The `reset-sc` Command

Use the `reset-sc` command to reset ALOM from the OpenBoot PROM prompt (`ok`).

To use the command, type `reset-sc` at the `ok` prompt.

For example:

```
ok reset-sc
```

The `.sc` Command

Use the `.sc` command to probe ALOM and to obtain its status from the OpenBoot PROM (`ok`) prompt.

To use the command, follow these steps:

1. At the `sc>` prompt in ALOM, type the following command:

```
sc> break -y
```

2. At the `ok` prompt in OpenBoot PROM, type the following command:

```
ok setenv auto-boot? false
```

3. At the `ok` prompt, type the following command:

```
ok reset-all
```

4. At the `ok` prompt, type the following command:

```
ok .sc
```

For example:

CODE EXAMPLE 7-1 Example of the `.sc` Command Output

```
ok .sc
SEEPROM: OK
I2C: OK
Ethernet: OK
Ethernet (2): OK
CPU: OK
RAM: OK
Console: OK
SC Control line: OK
FlashRAM Boot CRC: OK
FlashRAM Main CRC: OK
```


Troubleshooting

This chapter consists of tables of the most common issues you may experience with ALOM, shell error messages you see in ALOM, common scadm error messages, and troubleshooting suggestions. It contains the following sections:

- “Modem Configuration Troubleshooting” on page 165
- “Troubleshooting ALOM Problems” on page 166
- “Using ALOM to Troubleshoot Server Problems” on page 167
- “ALOM Shell Error Messages” on page 168
- “scadm Error Messages” on page 174

Modem Configuration Troubleshooting

TABLE A-1 provides solutions for common modem configuration problems.

TABLE A-1 Modem Troubleshooting

Issue	Solution
ALOM modem does not answer	Verify that cabling is set up correctly. See the <code>if_modem</code> variable for additional information
ALOM modem answers then immediately hangs up	Verify that <code>if_modem</code> variable is set to true.
ALOM modem answers but connections appear dead	<ol style="list-style-type: none"> 1. Type the ALOM escape character <code>#.</code> (pound-period) to see if you can return to the <code>sc></code> prompt. 2. Ensure that the serial management port speed and modem port speed are set to the same value. 3. Try disabling data compression. On many modems, this is done by using the <code>AT&K0</code> modem command.

Troubleshooting ALOM Problems

TABLE A-2 provides a list of common ALOM difficulties and their solutions.

TABLE A-2 ALOM Diagnostics

Problem	Description
Can't log in to ALOM	<p>Perform the following actions to troubleshoot ALOM log-in problems:</p> <ul style="list-style-type: none">• Check the ALOM device name you are connecting to: (for example, <code>bert-sc</code>). Make sure that you have the correct ALOM name for the corresponding server.• Check that you are using your correct ALOM username; it might not be the same as your system user name.• Check that you are using your correct ALOM password.
Can't connect to ALOM using the <code>telnet</code> command	<p>ALOM supports a total of four concurrent Telnet sessions per server. When the maximum number of Telnet sessions are active, further attempts to connect using the <code>telnet</code> command will receive a <code>connection closed</code> error. The following example shows system messages for the UNIX operating environment:</p> <pre>% telnet bert-sc Trying 129.148.49.120... Connected to bert-sc. Escape character is '^]'. Connection closed by foreign host.</pre>
Can't connect to ALOM through the Ethernet connection	<p>First, log in to the server as root and check whether the <code>scadm version</code> command succeeds. If it does, ALOM is working and there is an Ethernet configuration problem. Use the <code>scadm show</code> command to check whether Ethernet configuration variables are set correctly.</p> <p>You can also perform the following actions to troubleshoot Ethernet problems:</p> <ul style="list-style-type: none">• Log in to ALOM through the serial management port (SERIAL MGT) and use the <code>shownetwork</code> command to see the current settings. Refer to “shownetwork” on page 86.• Log in to another machine on the network and use the <code>ping</code> command to see whether ALOM is operating. Be sure to use the ALOM device's name (for instance, <code>servername-sc</code>), not the host server's name, as the argument to the <code>ping</code> command.• Run SunVTS diagnostics to check the Ethernet connection. The external Ethernet test requires that the device be connected to a functional 10-Mbit hub.• Run SunVTS diagnostics to check the ALOM card.• Use the command <code>scadm version</code> to check ALOM status.

TABLE A-2 ALOM Diagnostics (Continued)

Problem	Description
No alerts received from ALOM	Check the setting of the <code>sys_eventlevel</code> variable for syslog, the <code>sc_clieventlevel</code> variable for the ALOM command shell, and the <code>mgt_mailalert</code> variable for email alerts to make sure that you are receiving the proper levels of events in the specified places. Make sure that <code>if_emailalerts</code> is set to <code>true</code> , and that <code>mgt_mailhost</code> is set correctly for email alerts. Refer to “sc_clieventlevel” on page 119 and “mgt_mailalert” on page 109 .
ALOM passwords are unknown	If users have forgotten ALOM passwords or passwords are not working, log in to the server as root and use the <code>scadm userpassword</code> command to assign new passwords. Inform ALOM users of the new passwords. Refer to “scadm userpassword” on page 157 .
You can perform some ALOM functions, but not others	Specific user permissions are required to perform functions. Check your permission level. Refer to “userperm” on page 94 . In addition, the following problems might exist: <ul style="list-style-type: none">• Cannot see console logs or access the server console using ALOM.• Cannot put the server in to debug mode or use the ALOM <code>break</code> command: The server rotary switch is in the Locked position.• The <code>poweroff</code> command has no effect: The server is already powered off.• The <code>poweron</code> command has no effect: The server is already powered on, or the rotary switch is in the Standby position.

Using ALOM to Troubleshoot Server Problems

ALOM is useful for troubleshooting a server that is not responding. If the server is responsive, connect to it and use standard troubleshooting tools such as Sun Management Center, SunVTS, and OpenBoot Diagnostics.

If the server is not responding, log in to your ALOM account and do the following:

- Check the ALOM event log and server environmental status for problems. Refer to [“showlogs” on page 84](#), and [“showenvironment” on page 73](#) for more information.
- Check console logs for recent error messages. Refer to [“consolehistory” on page 51](#).

- Try connecting to the system console to reboot the system. Refer to [“console” on page 48](#).

About the System Console Write Lock

Although multiple users can connect to the system console from ALOM, only one user at a time has write access to the console (that is, only one user can type commands into the system console). Any characters that other users type are ignored. This is referred to as a *write lock*, and the other user sessions are in *read-only mode*. If no other users are currently logged in to the system console, then you obtain the write lock automatically when you execute the `console` command. To see which user has the write lock, use the `showusers` command. Refer to [“showusers” on page 90](#) for more information.

Resetting the Host Server After a Timeout

ALOM has a “watchdog” feature that senses when the host server’s operating system might be frozen. The watchdog function periodically checks whether the host server’s operating system is running. If the host server does not respond, the watchdog times out after a specified period of time. You can either use the `reset` command from the ALOM command shell to manually reset the server, or you can configure the `sys_autorestart` variable to automatically reset the host server when the watchdog detects a timeout. Refer to [“reset” on page 62](#), and [“sys_autorestart” on page 129](#) for further information.

ALOM Shell Error Messages

This section contains information about certain types of error messages you might see when using the ALOM command shell:

- [“Usage Errors” on page 169](#)
- [“General Errors” on page 170](#)
- [“FRU Errors” on page 173](#)

These messages appear in response to a command you typed at the `sc>` prompt.

Usage Errors

This list describes usage error messages that are displayed when you typed the command using improper command syntax. Refer to the description of the command for the correct syntax.

TABLE A-3 Usage Error Messages

Error Message	Command/Description	Refer to:
Error: Invalid command option. Type help to list commands.	Help.	“help” on page 55
Error: Invalid command options Usage: <i>usage string</i>	You typed the shell command correctly, but used an incorrect option for that command. <i>usage string</i> describes the proper syntax for command options. Check the command options and retype the command.	
Error: Invalid configuration parameter.	You specified a nonexistent configuration variable when using the <i>setsc</i> or <i>showsc</i> command. Check the configuration variables and their values in your configuration table and retype the command.	“setsc” on page 69, “showsc” on page 88, “Configuration Worksheet” on page 13.
Error: Invalid image. Please check file integrity and specified path.	An error occurred when you tried to execute the <i>flashupdate</i> command. Make sure that the path you specified is correct for the firmware image you want to download. If the path is correct, contact the administrator for the server where the image is located.	“flashupdate” on page 52.
Error: Invalid setting for parameter <i>param</i> .	You specified an incorrect value for the configuration variable specified in <i>param</i> . Check the configuration variable you want to use and retype the command.	“Configuration Worksheet” on page 13.
Error: Unable to program flash device when system is locked.	Your host server’s rotary switch is in the Locked position. Refer to the server’s documentation and set the rotary switch to the Normal (Unlocked) position, then execute the <i>flashupdate</i> command again.	“flashupdate” on page 52.
Error: Unable to set clock while managed system OS is running.	You tried to set the ALOM date and time while the host server was running. If you need to set the ALOM date and time, make sure that the system is powered off first. The Solaris Operating Environment synchronizes system time with ALOM time while the server is booting, and periodically while running.	

General Errors

ALOM reports the following general errors.

TABLE A-4 General Error Messages

Error Message	Command/Description	Refer to:
Error adding user <i>username</i>	An error occurred during execution of the <code>useradd</code> command. This message is followed by a more detailed message that explains the nature of the error.	“useradd” on page 91
Error: Cannot delete admin user	You tried to delete the <code>admin</code> user account from ALOM. ALOM does not allow you to delete this account.	
Error changing password for <i>username</i>	An error occurred during execution of the <code>userpassword</code> command. This message is followed by a more detailed message that explains the nature of the error.	“userpassword” on page 93.
Error: Inconsistent passwords entered.	During execution of the <code>userpassword</code> command, you typed the password differently the second time than you did the first time you were prompted. Execute the command again.	“userpassword” on page 93
Error: invalid password entered. Password must be 6-8 characters, differ from the previous by at least 3 characters and contain at least two alphabetic characters and at least one numeric or special character.	You entered an invalid password. Refer to the password restrictions and then enter the password again.	“userpassword” on page 93.
Error: invalid username string. Please re-enter username or type ‘usershow’ to see a list of existing users.	You tried to specify an ALOM user account that is not on the list of user accounts. To see a list of valid user accounts, use the <code>usershow</code> command.	“usershow” on page 96.
Error displaying user <i>username</i>	An error occurred during execution of the <code>usershow</code> command. This message is followed by a more detailed message that explains the nature of the error.	“usershow” on page 96

TABLE A-4 General Error Messages (Continued)

Error Message	Command/Description	Refer to:
Error: Invalid IP address for gateway address <netsec_ipgateway> and IP netmask <netsec_ipnetmask>.	You entered a value for the netsec_ipaddr variable that does not work with the values you specified for the netsec_ipgateway and netsec_ipnetmask variables. Check that the addresses are correct, and then run setupsc or setsc again. Refer to “netsec_ipaddr” on page 115 , “netsec_ipgateway” on page 116 , “setupsc” on page 70 , or “setsc” on page 69 .	
Error: Invalid IP netmask for IP address <netsec_ipaddr> and IP gateway <netsec_ipgateway>.	You entered a value for the netsec_ipnetmask variable that does not work with the values you specified for the netsec_ipgateway and netsec_ipaddr variables. Check that the addresses are correct, and then run setupsc or setsc again.	“netsec_ipgateway” on page 116 , “netsec_ipnetmask” on page 117 , “setupsc” on page 70 , or “setsc” on page 69 .
Error: Invalid IP gateway for IP address <netsec_ipaddr> and IP netmask <netsec_ipnetmask>.	You entered a value for the netsec_ipgateway variable that does not work with the values you specified for the netsec_ipnetmask and netsec_ipaddr variables. Check that the addresses are correct, and then run setupsc or setsc again.	“netsec_ipgateway” on page 116 , “netsec_ipnetmask” on page 117 , “netsec_ipaddr” on page 115 , “setupsc” on page 70 , or “setsc” on page 69
Error setting permission for <username>	An error occurred during execution of the userperm command. This message is followed by a more detailed message that explains the nature of the error.	Refer to “userperm” on page 94 .
Error: Invalid username string. Please re-enter a username of no more than 16 bytes consisting of characters from the set of alphabetic characters, numeric characters, period (.), underscore (_), and hyphen (-). The first character should be alphabetic and the field should contain at least one lower case alphabetic character.	You entered an invalid username. Review the proper syntax for user names and try again.	“useradd” on page 91 .
Error: Unable to execute break as system is locked.	The front panel rotary switch on the host server is in the Locked position. Change the position of the rotary switch and retype the break command.	“break” on page 47 .

TABLE A-4 General Error Messages (Continued)

Error Message	Command/Description	Refer to:
Failed to allocate buffer for console mode	During execution of the console command, ALOM could not allocate enough memory to connect to the console.	"console" on page 48.
Failed to get password for <username>	During execution of the userpassword command, a SEEPROM error occurred. Try executing the command again.	"userpassword" on page 93.
Failed to set <variable> to <value>	During execution of the setsc command, ALOM encountered a SEEPROM error.	"setsc" on page 69.
Invalid login	Login attempt failed. This message appears at the login prompt.	
Invalid password	You entered an invalid password with the userpassword command.	"userpassword" on page 93.
Invalid permission: <permission>	You entered an invalid user permission.	"userperm" on page 94.
Error: Maximum number of users already configured.	This error occurs if you try to add a user account when ALOM already has the maximum of 16 accounts configured. You must delete an account before you can add another.	"userdel" on page 92
Passwords don't match	The two entries for a new password did not match. Enter the password again.	
Permission denied	You attempted to execute a shell command for which you do not have the proper user permission level.	"userperm" on page 94.
Sorry, wrong password	You entered an incorrect password. Enter the password again.	
Error: User <username> already exists.	The user you are trying to add already has an ALOM account on this server.	

FRU Errors

The following error messages appear when ALOM detects problems with FRUs (field-replaceable units).

TABLE A-5 FRU Error Messages

Error Message	Command/Description	Refer to:
Error: <i>xxx</i> is currently powered off.	<i>xxx</i> is the name of the FRU to which you tried to send a command. The FRU is currently powered off. You need to turn it back on before it will accept commands.	
Error: <i>xxx</i> is currently powered on.	<i>xxx</i> is the name of the FRU to which you tried to send a <code>poweron</code> command. The FRU is already powered on.	“poweron” on page 59.
Error: <i>xxx</i> is currently prepared for removal.	<i>xxx</i> is the name of the FRU to which you tried to send a <code>removefru</code> command. The FRU is already powered off and ready for removal.	“removefru” on page 61.
Error: Invalid FRU name.	You entered a FRU command without specifying an option, or you specified an invalid FRU name with the command. Check that you have a valid FRU name and retype the command.	“showfru” on page 78.

Related Information

[“ALOM Shell Commands” on page 40](#)

scadm Error Messages

The following table lists common `scadm` error messages and their causes. These messages appear in alphabetical order.

TABLE 7-1 `scadm` Error Messages

Error Message	Description
Passwords didn't match, try again	When you execute the <code>userpassword</code> command, you need to enter the password twice. If the two passwords you enter do not match, this error appears. Execute the <code>userpassword</code> command again. Refer to "userpassword" on page 93 .
<code>scadm: all user slots are full</code>	This error occurs when you try to add a user account after ALOM already has the maximum of 16 accounts configured. You must delete an existing account before you can add a new one. Refer to "userdel" on page 92 .
<code>scadm: command line too long</code>	You may have typed too many characters on the command line. Make sure that the command you used is valid, and execute the command again using fewer characters.
<code>scadm: command unknown</code>	The command you used is invalid for <code>scadm</code> . If the command is a valid ALOM command but does not exist as an <code>scadm</code> command, you must execute the command from ALOM. Refer to "List of scadm Commands" on page 141 , and "ALOM Shell Commands" on page 40 .
<code>scadm: could not read date from SC</code>	An undefined error in the ALOM firmware occurred while <code>scadm</code> tried to obtain the current date and time from ALOM. Execute the command again, or run the command from ALOM.
<code>scadm: could not send alert</code>	While executing the <code>send_event</code> command, ALOM firmware could not log an event or send an alert message. Refer to "scadm send_event" on page 150 .
<code>scadm: could not set date on SC</code>	An undefined error in the ALOM firmware occurred while <code>scadm</code> tried to set the current date and time in ALOM. Execute the command again, or run the command from ALOM. Refer to "scadm date" on page 143 .
<code>scadm: couldn't add user</code>	<code>scadm</code> encountered an internal error while trying to add a user account. This may be due to a faulty SEEPROM. Refer to "scadm useradd" on page 154 .

TABLE 7-1 scadm Error Messages (*Continued*)

Error Message	Description
scadm: couldn't change password	scadm encountered an internal error while trying to change a user password. This may be due to a faulty SEEPROM. Refer to "scadm userpassword" on page 157 .
scadm: couldn't change permissions	scadm encountered an internal error while trying to change user permissions. This may be due to a faulty SEEPROM.
scadm: couldn't delete user	scadm encountered an internal error while trying to delete a user account. This may be due to a faulty SEEPROM. Refer to "scadm userdel" on page 155 .
scadm: couldn't get information on user	scadm encountered an internal error while trying to execute the usershow command. This may be due to a faulty SEEPROM. Refer to "usershow" on page 96 .
scadm: download failed, SC reported erase error	ALOM reported a hardware problem while executing the flashupdate command. There may be a problem with the SEEPROM. Refer to "scadm download" on page 145 .
scadm: download failed, SC reported int_wp error	ALOM reported a hardware problem while executing the flashupdate command. There may be a problem with the SEEPROM. Refer to "scadm download" on page 145 .
scadm: download failed, SC reported range error	ALOM reported a hardware problem while executing the flashupdate command. There may be a problem with the SEEPROM. Refer to "scadm download" on page 145 .
scadm: download failed, SC reported verify error	ALOM reported a hardware problem while executing the flashupdate command. There may be a problem with the SEEPROM. Refer to "scadm download" on page 145 .
scadm: download failed, SC reported vpp error	ALOM reported a hardware problem while executing the flashupdate command. There may be a problem with the SEEPROM. Refer to "scadm download" on page 145 .
scadm: download failed, SC reported wp error	ALOM reported a hardware problem while executing the flashupdate command. There may be a problem with the SEEPROM. Refer to "scadm download" on page 145 .
scadm: download rejected, rotary switch in secure mode?	You cannot execute the flashupdate command while the server rotary switch is in the Locked position. Check the rotary switch position and execute the command again. Refer to "scadm download" on page 145 .

TABLE 7-1 scadm Error Messages (*Continued*)

Error Message	Description
scadm: Error downloading file	An internal error occurred during execution of the flashupdate command. Run the command again. Refer to “scadm download” on page 145 .
scadm: ERROR, callback init failed	An internal error occurred during execution of the flashupdate command. Run the command again. Refer to “scadm download” on page 145 .
scadm: Error, Invalid setting for parameter <i>param</i> .	You specified an incorrect value for the configuration variable specified in param. Check the configuration variable you want to use and retype the command. Refer to “Configuration Worksheet” on page 13 .
scadm: Error, invalid configuration parameter.	You specified a nonexistent configuration variable when using the setsc or showsc command. Check the configuration variables and their values in your configuration table and retype the command. Refer to “setsc” on page 69 , or “showsc” on page 88 , and “Configuration Worksheet” on page 13 .
scadm: ERROR, passwords didn't match	When you execute the userpassword command, you need to enter the password twice. If the two passwords you enter do not match, this error appears. Execute the command again. Refer to “userpassword” on page 93 .
scadm: ERROR, unable to set up message queue	An internal error occurred during execution of the download command. Run the command again. Refer to “scadm download” on page 145 .
scadm: event message can't exceed 80 characters	The message you enter for the send_event command must contain fewer than 80 characters. Refer to “scadm send_event” on page 150 .
scadm: file could not be opened	An error occurred during execution of the download command; scadm could not open the file specified on the command line. Check that you specified the correct file and run the command again. Refer to “scadm download” on page 145 .
scadm: file not a valid s-record	An error occurred during execution of the flashupdate command; the file you specified for downloading is not a valid srecord file. Check the file name and run the command again. Refer to “scadm download” on page 145 .
scadm: INTERNAL ERROR in set date	An internal error occurred during execution of the date command. Run the command again. Refer to “scadm date” on page 143 .
scadm: INTERNAL ERROR, overflow in callback	An internal error occurred during execution of the flashupdate command. Run the command again. Refer to “scadm download” on page 145 .

TABLE 7-1 scadm Error Messages (Continued)

Error Message	Description
scadm: invalid variable	You entered an invalid variable while executing the <code>set</code> command. Check the list of configuration variables and execute the command again. Refer to “scadm set” on page 151 .
scadm: invalid variable or value	You entered an invalid variable or value while executing the <code>set</code> command. Check the list of configuration variables and execute the command again. Refer to “scadm set” on page 151 .
scadm: malformed password	You entered an invalid password. A valid password has between six and eight characters, at least two of which are letters, and at least one of which is a digit or special character.
scadm: malformed username	You entered invalid characters in a user name. scadm: maximum username length is 16 The user name you entered exceeded the maximum of 16 characters. Enter the user name again using 16 or fewer characters.
scadm: SC did not respond during boot initialization	An internal error occurred during execution of the <code>flashupdate</code> command. Run the command again. Refer to “scadm download” on page 145 .
scadm: SC failed to respond during download	During execution of the <code>flashupdate</code> command, ALOM did not enter boot mode correctly. Refer to “scadm download” on page 145 .
scadm: SC firmware not responding	The main ALOM firmware is not responding. This can happen when ALOM is booting, or because the main firmware is corrupt, or ALOM has a hardware problem. Wait a few minutes, and then execute the command again.
scadm: SC not responding to requests	ALOM did not send a response that scadm was expecting. Check that ALOM is working.
scadm: ALOM returned fatal error	During execution of the <code>flashupdate</code> command, ALOM returned an undocumented error. Run the command again. Refer to “scadm download” on page 145 .
scadm: ALOM returned garbage	This error can occur in various situations. Run the command again.
scadm: ALOM returned unknown error	During execution of the <code>download</code> command, ALOM returned undocumented status (neither success nor failure). Run the command again. Refer to “scadm download” on page 145 .

TABLE 7-1 scadm Error Messages (*Continued*)

Error Message	Description
scadm: ALOM returned wrong response	ALOM returned an invalid response during a user command. This is considered an internal error in ALOM or the scadm utility. Refer to “Overview of the scadm Utility” on page 139 .
scadm: ALOM unable to free up memory	This message can occur in various situations. The scadm utility was unable to free the received message from the ALOM firmware.
scadm: Unable to reset ALOM hardware	During execution of the <code>resetrsc</code> command, an attempt to hard reset ALOM failed. Refer to “resetrsc” on page 63 .
scadm: unable to send data to ALOM	ALOM did not acknowledge data sent to it. Check that ALOM is working.
scadm: user already exists	The user you are trying to add already has an ALOM account on this server.
scadm: username did not start with letter or did not contain lowercase letter	You used an invalid user name format when trying to add an ALOM user account. Refer to the <code>useradd</code> command and try running it again. Refer to “useradd” on page 91 .
scadm: username does not exist	The user name you specified is not associated with an ALOM account on this server.
This program MUST be run as root	Log in to the server as root and execute scadm again.
USAGE: scadm <command> [options]	For a list of commands, type scadm help .
USAGE: scadm date [-s] [[mmd]HHMM mmdHHMM[yy]] [.SS]	You entered an incorrect value for <code>scadm date</code> . Refer to the <code>date</code> command for proper syntax and run the <code>scadm date</code> command again. Refer to “scadm date” on page 143 .
USAGE: scadm download [boot] <file>	You entered an incorrect value for <code>scadm download</code> . Refer to the <code>download</code> command for proper syntax and run the <code>scadm download</code> command again. Refer to “scadm download” on page 145 .
USAGE: scadm loghistory	You entered an incorrect value for <code>scadm loghistory</code> . Refer to the <code>loghistory</code> command for proper syntax and run the <code>scadm showlogs</code> command again. Refer to “scadm loghistory” on page 148 .
USAGE: scadm resetrsc [-s]	You entered an incorrect value for <code>scadm resetrsc</code> . Refer to the <code>resetrsc</code> command for proper syntax and run the <code>scadm resetrsc</code> command again. Refer to “scadm resetrsc” on page 149 .

TABLE 7-1 scadm Error Messages (*Continued*)

Error Message	Description
USAGE: scadm set<variable> <value>	You entered an incorrect value for scadm set. Refer to the set command for proper syntax and run the scadm set command again. Refer to “scadm set” on page 151 .
USAGE: scadm show [variable]	You entered an incorrect value for scadm show. Refer to “scadm show” on page 152 for proper syntax and run the scadm show command again.
USAGE: scadm shownetwork	You entered an incorrect value for scadm shownetwork. Refer to “scadm shownetwork” on page 153 for proper syntax and run the scadm shownetwork command again.
USAGE: scadm useradd <username>	You entered an incorrect value for scadm useradd. Refer to the useradd command for proper syntax and run the scadm useradd command again. Refer to “scadm useradd” on page 154 .
USAGE: scadm userdel <username>	You entered an incorrect value for scadm userdel. Refer to “scadm userdel” on page 155 for proper syntax and run the scadm userdel command again.
USAGE: scadm userpassword <username>	You entered an incorrect value for scadm userpassword. Refer to “scadm userpassword” on page 157 for proper syntax and run the scadm userpassword command again.
USAGE: scadm userperm <username> [cuar]	You entered an incorrect value for scadm userperm. Refer to “scadm userperm” on page 158 for proper syntax and run the scadm userperm command again.
USAGE: scadm usershow [username]	You entered an incorrect value for scadm usershow. Refer to “scadm usershow” on page 156 for proper syntax and run the scadm usershow command again.

Understanding the ALOM Watchdog Timer

This appendix gives information on the ALOM watchdog timer.

ALOM features a watchdog mechanism to detect and respond to a system hang, should one ever occur. The ALOM watchdog is a timer that is continually reset by a user application as long as the operating system and user application are running. In the event of a system hang, the user application is no longer able to reset the timer. The timer will then expire and will perform an action set by the user, eliminating the need for operator intervention.

In order to fully understand the ALOM watchdog timer, it's useful to understand certain terms associated with the feature's components and how all of the components interact.

1. If the ALOM watchdog timer is enabled, it will automatically begin monitoring the host Netra server and will detect when the host or application encounters a hang condition or stops running. The default *timeout period* is 60 seconds; in other words, if the ALOM watchdog timer does not hear from the host system within that 60-second window, it will automatically perform the action set through the `sys_autorestart` variable (see "[sys_autorestart](#)" on page 129). You can change the timeout period through the `sys_wdtimeout` variable (see "[sys_wdtimeout](#)" on page 136).
2. If you set XIR as the function that ALOM would perform once the watchdog timer timeout period is reached, then ALOM will attempt to XIR the host system. If the XIR does not complete within the specified number of seconds (set through the `sys_xirtimeout` variable), then ALOM forces the server to perform a hard reset instead (see "[sys_xirtimeout](#)" on page 137).
3. The ALOM watchdog should be enabled by the user application after the host system is booted up. ALOM starts a timer to detect host boot failures as soon as the host is powered on or reset. The host is considered fully booted once the ALOM watchdog timer is started; if the host fails to boot within a certain amount of time, it will take an action specified by you. The amount of time the ALOM

watchdog will wait for the host to boot is set through the `sys_boottimeout` variable (see [“sys_boottimeout” on page 132](#)), and the action it will take if it doesn't boot in that time is set through the `sys_bootrestart` variable (see [“sys_bootrestart” on page 131](#)).

4. You can set the maximum number of attempted reboots using the `sys_maxbootfail` variable to keep the system from going through an endless cycle of reboots (see [“sys_maxbootfail” on page 136](#)). If the system goes through the number of reboots set through the `sys_maxbootfail` variable, then ALOM will perform an action set by you; that action is set through the `sys_bootfailrecovery` variable (see [“sys_bootfailrecovery” on page 130](#)).

Note that the boot timer will be disabled for the host reset or reboot after the action set through the `sys_bootfailrecovery` variable is taken; it will not be enabled again until after the user application restarts the watchdog timer.

Driver Properties

The following property must be present in the `/platform/sun4u/kernel/drv/rmclomv.conf` file for the ALOM watchdog to function:

```
rmclomv-watchdog-mode="app" ;
```

This property tells the watchdog subsystem to disable the kernel level heartbeat mechanism. Comment out or remove this line to enable the kernel level watchdog.

The `ntwdt` driver will have an associated driver configuration file (`ntwdt.conf`) that will specify the following parameters:

- [“ntwdt-autorestart” on page 183](#)
- [“ntwdt-boottimeout” on page 183](#)
- [“ntwdt-bootrestart” on page 183](#)
- [“ntwdt-xirtimeout” on page 184](#)
- [“ntwdt-maxbootfail” on page 184](#)
- [“ntwdt-bootfailrecovery” on page 184](#)

ntwdt-autorestart

This property indicates the action to be taken if the watchdog timer expires. Following are the acceptable values for this property:

- `xir` – Perform an XIR (externally initiated reset).
- `reset` – Perform a server reset, booting to the Solaris operating environment.

Note that if you enter any value other than those listed above, the software will automatically default to the `xir` value instead.

ntwdt-bovertimeout

When the host system begins to boot up the Solaris operating system, the `ntwdt-bovertimeout` value specifies the amount of time, in seconds, that the watchdog system must be programmed. Note that if the application watchdog is enabled, the user program must program the watchdog system using the `LOMIOCDOGTIME` or `LOMIOCDOGCTL` ioctls; otherwise, the kernel will do it automatically. If the watchdog is not programmed, then ALOM will take the recovery action.

ntwdt-bootrestart

This property specifies the action to be taken when the boot timer expires. Following are the acceptable values for this property:

- `none` – Do nothing except log the event to the ALOM event log.
- `xir` – Perform an XIR (externally initiated reset).
- `reset` – Perform a server reset, booting to the Solaris operating environment.

Note that if you enter any value other than those listed above, the software will automatically default to the `xir` value instead.

Note – If you set the `ntwdt-bootrestart` property to `xir`, you must also set the OpenBoot PROM NVRAM variable `auto-boot-on-error?` to `true` and the `error-reset-recovery` variable to `boot`. In addition, for this option to work reliably, the system must reboot followed by an `xir`, which may not happen in all cases (for example, if the system fails to find the boot disk and drops down to the `ok` prompt). Because of these restrictions, you may want to set the `ntwdt-bootrestart` property to `reset` for a more consistent behavior.

ntwdt-xirtimeout

This property specifies how long ALOM will wait, in seconds, to issue a system reset if the `ntwdt-autorestart` property is set to `xir` and the watchdog timer expires, but the system did not reset successfully. Acceptable values for this property range from 900 (15 minutes) to 10800 (180 minutes). Any value entered that is outside of this range will be ignored.

ntwdt-maxbootfail

This property allows you to set a limit to the number of times that the recovery action applied through the `ntwdt-bootfailrecovery` property is allowed to be taken, keeping the system from performing the recovery action continuously. The maximum value for this property is 6. Any value entered that is above 6 will be ignored.

ntwdt-bootfailrecovery

This property tells ALOM what recovery action to take if the Netra system fails to boot after the value set in the `ntwdt-maxbootfail` property is met. Following are the acceptable values for this property:

- `none` – Do nothing except log the event to the ALOM event log.
- `powercycle` – Power cycle the host system.
- `poweroff` – Power off the host system.

Note that if you enter any value other than those listed above, the software will automatically default to the `powercycle` value instead.

Understanding the User APIs

The `ntwdt` driver provides several application programming interfaces (APIs) to application programs. You must open the `/dev/ntwdt` device node before issuing the watchdog ioctls. Note that only a single instance of `open()` is allowed on `/dev/ntwdt`; more than one instance of `open()` will generate the following error message:

```
EAGAIN
The driver is busy, try again.
```

The following APIs are used with the ALOM watchdog timer:

- [“LOMIOCDOGTIME” on page 185](#)
- [“LOMIOCDOGCTL” on page 186](#)
- [“LOMIOCDOGPAT” on page 186](#)
- [“LOMIOCDOGSTATE” on page 187](#)

Setting the Timeout Period

The timeout period for the ALOM watchdog is set using the `LOMIOCDOGTIME` API.

LOMIOCDOGTIME

This API sets the timeout period of the watchdog. This ioctl will program the watchdog hardware with the time specified in this ioctl.

The argument is a pointer to an unsigned integer. This integer holds the new timeout period for the watchdog in multiples of 1 second.

The watchdog framework will only allow timeouts in excess of 1 second. You can specify any timeout period in the range of 1 second to 180 minutes.

If the watchdog function is enabled, the timeout period is immediately reset so that the new value can take effect. An error (`EINVAL`) is displayed if the timeout period is less than 1 second or longer than 180 minutes.

Note – Setting the timeout period to a value of 0 means that the watchdog timer is uninitialized, so once you arm the watchdog timer, you cannot set the timeout period back to 0. Any attempt to set the timeout period to 0 will be unsuccessful. If you want to disable the watchdog timer, do not attempt to set the timeout period to 0; use the `LOMIOCDOGCTL` API instead (see [“LOMIOCDOGCTL” on page 186](#) for more information).

Note – This ioctl is not intended for general purpose use. Setting the watchdog timeout to too low a value may cause the system to receive a hardware reset if the watchdog and reset functions are enabled. If the timeout is set too low, the user application must be run with a higher priority (for example, as a real time thread) and must be patted more often to avoid an unintentional expiration.

To change the base unit back to seconds, either remove the line above from the `ntwdt.conf` file or change the value on that line from 1 to 10:

```
ntwdt-time-unit=10;
```

Enabling or Disabling the ALOM Watchdog

The enabling or disabling of the ALOM watchdog is done through the `LOMIOCDOGCTL` API.

LOMIOCDOGCTL

This API enables or disables the watchdog reset function. The ALOM watchdog is programmed with appropriate values.

The argument is a pointer to the `lom_dogctl_t` structure (described in greater detail in [“Data Structures” on page 187](#)). The `reset_enable` member is used to enable or disable the system reset function. The `dog_enable` member is used to enable or disable the watchdog function. An error (`EINVAL`) is displayed if the watchdog is disabled but reset is enabled.

Patting the ALOM Watchdog

The patting of the ALOM watchdog is done through the `LOMIOCDOGPAT` API.

LOMIOCDOGPAT

This API resets (pats) the watchdog so that the watchdog starts ticking from the beginning. This `ioctl` requires no arguments. If the watchdog is enabled, this `ioctl` must be used at regular intervals that are less than the watchdog timeout.

Getting the State of the Watchdog Timer

The state of the ALOM watchdog is shown using the `LOMIOCDOGSTATE` API.

LOMIOCDOGSTATE

This API gets the state of the watchdog and reset functions and retrieves the current timeout period for the watchdog. If `LOMIOCDOGSTATE` was never issued to set up the timeout period prior to this ioctl, the watchdog is not enabled in the hardware.

The argument is a pointer to the `lom_dogstate_t` structure (described in greater detail in [“Data Structures” on page 187](#)). The structure members are used to hold the current states of the watchdog reset circuitry and current watchdog timeout period. Note that this is not the time remaining before the watchdog is triggered.

Data Structures

All data structures and ioctls are defined in `lom_io.h`.

Watchdog/Reset State Data Structure

Following is the watchdog/reset state data structure.

CODE EXAMPLE B-1 Watchdog/Reset State Data Structure

```
typedef struct {
    int reset_enable; /* reset enabled iff non-zero */
    int dog_enable; /* watchdog enabled iff non-zero */
    uint_t dog_timeout; /* Current watchdog timeout */
} lom_dogstate_t;
```

Watchdog/Reset Control Data Structure

Following is the watchdog/reset control data structure.

CODE EXAMPLE B-2 Watchdog/Reset Control Data Structure

```
typedef struct {  
    int reset_enable; /* reset enabled iff non-zero */  
    int dog_enable; /* watchdog enabled iff non-zero */  
} lom_dogctl_t;
```

Error Messages

Following are the error messages that may be displayed and what they mean.

EAGAIN

This error message will be displayed if you attempt to open more than one instance of `open ()` on `/dev/ntwdt`.

EFAULT

This error message will be displayed if a bad user-space address was specified.

EINVAL

This error message will be displayed if a non-existent control command was requested or invalid parameters were supplied.

EINTR

This error message will be displayed if a thread awaiting a component state change was interrupted.

ENXIO

This error message will be displayed if the driver is not installed in the system.

Sample ALOM Watchdog Program

Following is a sample program for the ALOM watchdog program.

CODE EXAMPLE B-3 Example Program for ALOM Watchdog Program

```
#include "lom_io.h"
main() {
    uint_t timeout = 30; /* 30 seconds */
    lom_dogctl_t dogctl;
    int fd = open("/dev/ntwtdt", O_RDWR);
    dogctl.reset_enable = 1;
    dogctl.dog_enable = 1;
    /* Set timeout */
    ioctl(fd, LOMIOCDOGTIME, (void *)&timeout);
    /* Enable watchdog */
    ioctl(fd, LOMIOCDOGCTL, (void *)&dogctl);

    /* Keep patting */
    While (1) {
        ioctl(fd, LOMIOCDOGPAT, NULL);
        sleep (5);
    }
}
```


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