Sun™ Advanced Lights Out Manager (ALOM) Online Help

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Welcome to Sun Advanced Lights Out Manager (ALOM)

Sun™ Advanced Lights Out Manager (ALOM) is a system controller that lets you remotely manage and administer your 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.

ALOM enables you to monitor and control your server 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.

In addition, ALOM enables you to run diagnostics (such as POST) remotely that would otherwise require physical proximity to the server's serial port. 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.

Here are some components that ALOM can monitor.

What ALOM Monitors

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	Operation mode switch position and status of LEDs
Voltages	Whether voltages are within operating range.
Alarm port	Status of the alarm port

Using Help

ALOM Help describes how to use the Sun™ Advanced Lights Out Manager software that is installed on your Sun Fire™ server. For detailed information about setting up an ALOM console on your server, see the Installation Guide and the Administration Guide that shipped with your server.

ALOM Help is an easy-to-use, browser-based help system. You can run ALOM Help directly from the Documentation CD that shipped with your Sun Fire server, from the Sun documentation portal at http://www.sun.com/documentation, or from a local web server. For the latest updates to ALOM Help, see http://www.sun.com/documentation.

Requirements

To run ALOM Help, you need the following software.

Type of Software	Version or Configuration
Web browser	ALOM Help works with the following web browsers: • Netscape 4.79 and 7.0 (Solaris™, Windows, Linux) • Microsoft Internet Explorer 5.x and 6.x (Windows) • Mozilla 1.x (Solaris, Windows, Linux) • Opera 6.x and 7.x (Windows)
JavaScript™	ALOM Help works with the most popular versions of JavaScript: Version 1.2 and Version 1.3.
Java™*	Java Virtual Machine 1.2 or other compatible version.

* Required only for full-text search in English, French, German, Italian, Spanish, or Swedish

Navigation and Session Information Controls

All ALOM Help topics have a control bar at the top of the content area. Each control launches a specific helper application that lets you navigate between topics, provide feedback to Sun, or display information about your current ALOM Help session.

Control Icon	Function
	Opens a pop-up browser window containing a graphical table of contents for ALOM Help. Use this graphical table of contents to browse the conceptual, procedural, and reference help topics.
	Opens a pop-up browser window that lets you search ALOM Help topics. For customers using ALOM Help in English, French, German, Italian, Spanish, or Swedish, ALOM Help supports full-text search. For customers using ALOM Help in Japanese, Korean, Traditional Chinese, or Simplified Chinese, ALOM Help supports key word search.
	Opens a pop-up browser window containing information about sending feedback to Sun about ALOM Help.
	Opens a pop-up dialog box that displays information about your current version of ALOM Help, your current ALOM Help session, and your browser configuration. Open this dialog box if you need to contact Sun technical support about ALOM Help.

Related Information

At the bottom of the content area you can view links to related ALOM Help topics. By default, the list of links to related topics is "collapsed" under a control icon. Click the control icon to expand or collapse the list of related help topics.

Control Icon	Function
	Expands the list of related help topics.
	Collapses the list of related help topics.

Known Limitations

If you routinely load sophisticated web pages in your browser or routinely run Java or JavaScript applications, you will find ALOM Help to be a well-behaved application on your desktop. That said, there are several known limitations to the way ALOM Help performs on all supported browsers, operating environments, versions of Java, versions of JavaScript, and locales.

Language(s)	Browser(s)	Operating Environment(s)	Limitation

English, French, German, Italian, Spanish, Swedish	Netscape 4.79	Solaris	If you copy a long string from a web page and paste it into the full-text search input box, Netscape may crash.
English, French, German, Italian, Spanish, Swedish	Netscape 4.79	Solaris	If you are running ALOM Help over a busy LAN and you enter a common word such as "the" or "command" or "ALOM" in the full-text search input box, the Java search applet may time out before it completes searching all ALOM Help files on the LAN.
Japanese	All	Solaris, Windows	If you click the "Browser Test" link on the ALOM Help home page (`index.html`), your browser may fail to open the pop-up window or your browser may display some garbled output in that window.
All	All	All	Certain browsers and browser plug-ins can block pop-up windows. To take advantage of the navigation and functions described above, you must enable pop-up windows in your browser. If you cannot enable pop-up windows on a shared network copy of your browser, try clicking a second time the icon or button in Help that normally launches the pop-up window.
All	Netscape 4.79	Solaris, Windows	Netscape 4.79 users will not see the "Related Information" controls for expanding and collapsing the list of related help topics. Netscape 4.79 has a bug in its implementation of the DOM (Document Object Model) that prevents it from supporting HTML divisions correctly. Netscape 4.79 users of ALOM Help see all the "Related Information" links without the controls for expanding and collapsing the list.

ALOM Overview

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 needing to configure 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.

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](#).

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.

  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.

You can now perform some [common administrative tasks](#), such as [adding ALOM user accounts](#).

[Common ALOM tasks](#)

Copyright

Basic UNIX Commands and Procedures

ALOM Online Help does not contain information about basic UNIX commands and procedures, such as shutting down the system, booting the system, or configuring devices. For information about these topics and other basic UNIX information, refer to the following documentation:

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

[Accessing Sun documentation](#)

[System prompts](#)

System Prompts

The following system prompts are used in ALOM Online Help.

Type of Prompt	Prompt
C shell	*machine-name*%
C shell superuser	*machine-name*#
Bourne and Korn shells	$
Bourne and Korn shell superuser	#
ALOM system controller	sc>
OpenBoot PROM firmware	ok

[Basic UNIX commands and procedures](#)

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	*SunVTS User's Guide* *SunVTS Quick Reference Guide* *SunVTS Test Reference Manual* *Sun Management Center Software User's Guide*
System and network administration	*Solaris System Administrator Guide* *SPARC: Installing Solaris Software*
Using the operating environment software	*Solaris User's Guide*

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 Solaris 8 HW 7/03 Supplement CD in the following directory:

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

To load these man pages, use the `pkgadd` command and specify 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.

In addition, you can find Sun system documentation, Solaris documentation, and other related documentation online at the following Web site:

http://www.sun.com/documentation

[Accessing Sun documentation](#)

Accessing Sun Documentation

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

http://www.sun.com/documentation

Accessing ALOM Documentation

You can find the ALOM online 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

For More Information

[Accessing Sun documentation](#)

[Basic UNIX commands and procedures](#)

[Fault and failure terminology](#)

[Related documentation](#)

Sun Welcomes Your Comments

Sun is interested in improving its documentation and welcomes your comments and suggestions. To send feedback on a topic in this online help system, click on the envelope icon. This opens an email window in your web browser. Compose your feedback and click Send to send your feedback to Sun.

You can also send your general documentation comments to Sun at:

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

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

Sun Advanced Lights Out Manager (ALOM) 1.x Online Help, Part Number 817-xxxx-xx

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, but it 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

This ALOM release supports the following platforms:

- Netra 240 server
- Netra 440 server
- Sun Fire V210 server
- Sun Fire V240 server
- Sun Fire V250 server
- Sun Fire V440 server

Keyswitch / Operation Mode Switch

The Sun Fire V210 server does not have a front panel keyswitch. The Sun Fire V240 and V440 servers do have keyswitches. The Sun Fire V250 server has an operation mode switch on the front panel, which supports the same functionality as the keyswitch but does not require a key to operate. The Netra 240 server and Netra 440 server have a rotary switch. Before you update the ALOM firmware using either the `flashupdate` or `scadm download` command, make sure that the rotary switch, keyswitch, or operation mode switch is set to the Normal position or unlocked position (Netra 240, Netra 440).

For more information, refer to the Administration Guide for your server.

ALOM System Controller Card

On the Sun Fire V210 and V240 servers, the ALOM hardware is an integral component of the server's motherboard.

On the Sun Fire V440 server, the ALOM hardware consists of a discrete system controller card. The card plugs into a dedicated slot on the server's motherboard. The serial management (SERIAL MGT) and network management (NET MGT) ports are located on the back of the card, and can be accessed from the back of the server.

On the Sun Fire V250 server, the ALOM hardware consists of the system controller card located above

the PCI slots. The serial management (SERIAL MGT) and network management (NET MGT) ports are located on the rear of the ALOM card and can be accessed from the rear of the server.

System Configuration Card

The system configuration card (SCC) stores important information for the host server, including network and OpenBoot™ PROM information, and ALOM user and configuration data. If your host server fails and needs to be replaced, you can migrate the SCC from the server to a new server. The new server starts up using the original server's configuration data. This minimizes downtime and removes the need to completely configure the new server.

ALOM interacts with the SCC as follows:

- If the SCC is not present in the host server, ALOM prevents the server from being powered on.
- If the host server has an SCC with a sufficient number of machine addresses (MAC addreses), but the card has been installed from another server, ALOM automatically resets the SCC's parameters to the default values for the server in which it is installed..
- If the SCC is removed from a system that is powered on, ALOM powers down the host server within one minute after the card is removed.
- ALOM stores a backup copy of its user and configuration data on the SCC. This allows the ALOM settings to be retained in case the host server is replaced by another server; installing the SCC from the first server allows the ALOM settings to be restored.

For more information about the SCC, refer to the Administration Guide for your server.

Configuring ALOM

Your ALOM software comes preinstalled on your host server, so it works as soon as you apply power to the server. At that point, it is ready to run. 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 need to perform some basic tasks.

Here are the tasks you need to complete to customize ALOM:

1. Plan how to customize your configuration
2. Use the configuration table to record your settings
3. Power on your host server
4. Run the `setupsc` command to start the custom configuration program
5. Use the configuration variables to customize the ALOM software

Planning to Customize Your Configuration

Before you configure ALOM, you need to plan your configuration.

Using the Configuration Table

You might find it helpful to print the configuration table and write down your settings.

Powering On Your Host Server

Refer to your host server documentation for information about how to power on the system. If you want to capture ALOM messages, power on the terminal that you have connected to the SERIAL MGT port before you power on the host server.

As soon as power is applied to the host server, the SERIAL MGT port connects to the host server's system console. To switch to ALOM, type **#.** (pound-period). At startup, ALOM has one preconfigured administrator account (`admin`). When you switch to ALOM from the system console, you are prompted to create a password for this account. Refer to the `password` command section for a description of acceptable passwords.

The default `admin` account has full [ALOM user permissions](#) (`cuar`). You can use this account to view the system console output from the host server, to set up other user accounts and passwords, and to configure ALOM.

Running the `setupsc` Command

After you have finished planning your configuration, use the [`setupsc`](#) command to run the custom configuration program. 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 host 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](#). 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.

Using the Configuration Variables to Customize the ALOM Software

The `setupsc` script enables you to set up a number of [configuration variables](#) at once. If you want to change one or more configuration variables without running the `setupsc` script, use the [`setsc`](#) command.

[About the `scadm` utility](#)

[Configuration table](#)

[List of ALOM shell commands](#)

[Planning your ALOM configuration](#)

Customizing Your ALOM Configuration

ALOM software comes preinstalled on your host server and is ready to run when you apply power to the server. You only need to follow the directions in this section if you decide to change the default configuration of ALOM to customize it for your installation.

Note: Refer to your host server's documentation to find the location of the serial management and network management ports.

Before you run the `setupsc` command, you need to decide how you want to use ALOM. You need to make the following decisions about your configuration:

- Which ALOM communication port to use
- Whether you want to enable alert messages, and where you want to send them

Once you make those decisions, print the configuration table and use it to record your responses to the `setupsc` command prompts.

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

Setting Up the Hardware

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

The following illustration and table includes information about pin assignments and signal descriptions that are relevant to an RJ-45 connector. The following illustration is an example of an RJ-45 jack.
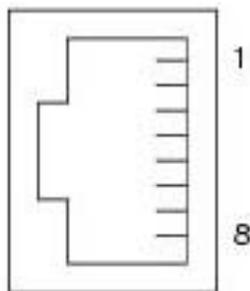
Pin	Signal Description	Pin	Signal Description
1	Request To Send (RTS)	5	Ground
2	Data Terminal Ready (DTR)	6	Receive Data (RXD)
3	Transmit Data (TXD)	7	Data Carrier Detect (DCD)

4	Ground	8	Clear To Send (CTS)

The following illustration and table include information about the serial port connector and signals that are relevant to a DB-25 connector. The following illustration is an example of a DB-25 female connector.
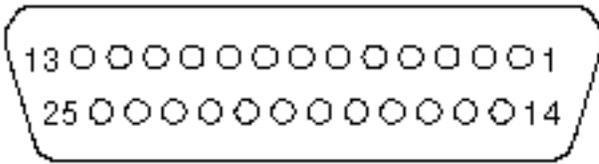
Pin Number	Function	I/O	Signal Description
1	none	none	N.C.*
2	TXD_A	O	Transmit Data
3	RXD_A	I	Receive Data
4	RTS_A	O	Ready To Send
5	CTS_A	I	Clear To Send
6	DSR_A	I	Data Set Ready
7	GND		Signal Ground
8	DCD_A	I	Data Carrier Detect
9	none	none	N.C.*
10	none	none	N.C.*
11	DTR_B	O	Data Terminal Ready
12	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	RXC_A	I	Receive Clock
18	RXC_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.*
23	none	none	N.C.*
24	TXC_A	O	Transmit Clock
25	TXC_B	O	Transmit Clock

* N.C. means "No Connection."

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.

If you want to connect wiring yourself, translate the signals between the RJ-45 and DB-25 connectors according to the following information.

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

Modem Configuration Troubleshooting

Issue	Solution
ALOM modem does not answer	Verify that cabling is set up correctly. See the `if_modem` variable for additional information.

ALOM modem answers then immediately hangs up	Verify that the `if_modem` variable is set to `true`.
ALOM modem answers but connections appear dead	1. Type the ALOM escape character **#.** (pound-period) to see whether you can return to the `sc>` prompt. 2. Ensure that the serial 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 `AT&K0` modem command.

[if_modem](#)

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 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 system console through ALOM. On the host server, this port is referred to as the SERIAL MGT port.

Refer to your server's documentation for more information.

Network Management (Ethernet) Port

The 10-Mbyte Ethernet port allows 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 host server, the network management 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.

[How the serial management port works](#)

Redirecting the System Console From ALOM to Other Devices

When you first apply power to the host server, ALOM is initially configured to display the system console output. The SERIAL 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 serial 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.

Redirecting 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.)
2. At the `sc>` prompt, type the [console](#) command to access the server's system console.
   ```
   sc> console
   ok
   ```
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 will 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 next section.

Resetting the Default Console Back to ALOM (`ttya`)

If you want to redirect the system console's output back to ALOM, type the following commands at the OpenBoot PROM `ok` prompt:

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

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

To cause these changes to take effect immediately, type **reset-all** at the ok prompt. Otherwise, these changes will take effect the next time you cycle the power on the host server.

Configuration Table

Note: You only need to use this table if you want to customize ALOM for your installation.

To customize ALOM, you use the configuration variables. There are two ways to set up the configuration variables for ALOM:

- Specify values for the variables during execution of the setupsc command.
- Configure each variable individually using the setsc command.

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

Ethernet Connection Setup

Function	Value/Response	Configuration Variable	Default Variable
How do you want to control network configuration?	Manually Using DHCP		
IP (Internet Protocol) address for ALOM		netsc_ipaddr	0.0.0.0
IP address for the subnet mask		netsc_ipnetmask	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	0.0.0.0

Do you want ALOM to send alerts by email? Email address(es) to use for sending alerts		mgt_mailalert	[ ] 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	

Note: You can set up user accounts manually, but not by using the `setupsc` script.

[About ALOM configuration variables](#)

[Permission levels](#)

[userpassword](#)

Configuring DHCP

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

- Use the setupsc script to set the netsc_dhcp variable.
- Use the setsc command to set the value of the netsc_dhcp variable to true (enable DHCP).

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.

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

Manual Network Setup

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

- Use the <u>setupsc</u> script to set the <u>network configuration variables</u> all at once.
- Use the <u>setsc</u> command to set the values of each network configuration variable individually.

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

- <u>if_network</u>
- <u>netsc_ipaddr</u>
- <u>netsc_ipnetmask</u>
- <u>netsc_ipgateway</u>
- <u>netsc_enetaddr</u>

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.

Using the Serial Management Port

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

This port can be used only 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.

Using the Serial Management Port to Access the System Console

Before You Begin

When you first turn on the power to your server and to the external terminal, the serial management port is automatically connected to the system console output.

The serial management 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 the serial management port 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.

What to Do

1. Connect to ALOM and [log in](log in) to establish an ALOM system controller session.

The ALOM `sc>` prompt is displayed.

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

    `sc>` **`console`**

Switching Between the System Console and ALOM

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

To switch from the `sc>` prompt to the system 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 <u>sc_escapechars</u> variable. For example:

`sc>` **`setsc sc_escapechars a.`**

Configuring Email Alerts

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.

Email Alerts

To send email alerts, the network management (Ethernet) port must be enabled. 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 levels of alerts (critical, major, or minor).

Setting up email alerts

Sending and Receiving Alerts

Receiving Alerts From ALOM

ALOM generates alert messages in the following format:

`$HOSTID $EVENT $TIME $`CUSTOMERINFO` $`HOSTNAME` message`

Sending Customized Alerts

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

- Send the alert immediately from the superuser prompt.
- Create a script (command file) that sends the alert under special circumstances.

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:

- [Logging In to Your ALOM Account](#)
- [Adding an ALOM user account](#)
- [Removing an ALOM user account](#)
- [Changing the password on your account or on another user's account](#)
- [Switching between the system console and ALOM](#)
- [Redirecting the System Console from ALOM to Other Devices](#)
- [Reconfiguring ALOM to use the Ethernet (NET MGT) port](#)
- [Setting up email alerts](#)
- [Resetting ALOM](#)
- [Resetting the host server](#)

You can also perform these other tasks using ALOM:

- [Finding out your ALOM version](#)
- [Controlling the Locator LED](#)
- [Viewing environmental information about the server](#)
- [Reviewing event and console logs](#)
- [Creating a script to send alerts from ALOM](#)
- [Backing up your ALOM configuration](#)

[ALOM overview](#)

Reconfiguring ALOM to Use the Network Management 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](). There are three ways to specify values for these variables:

- Run the [setupsc]() script from the `sc>` prompt.
- [Set values for each individual variable from the `sc>` prompt]() using the [setsc]() command.
- [Set values for each individual variable from the system console]() using the [scadm set]() command.

Running the `setupsc` Script

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

`sc>` **setupsc**

The setup script starts.

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. 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]?
```

Follow this procedure at the above prompt to configure the network interface variables:

1. 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.
3. Follow the interactive questions in the script. The script prompts you to set values for the following variables:
   - if_modem -- specify false
   - netsc_dhcp
   - netsc_ipaddr
   - netsc_ipnetmask
   - netsc_ipgateway
   - netsc_tpelinktest
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.
5. Before you can use your network configuration, you need to reset ALOM. You can do this in one of two ways:
   - At the sc> prompt, type the resetsc command.
   - At the superuser prompt in the system console, type the scadm resetrsc command.

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_enetaddr 0a:2c:3f:1a:4c:4d
sc> setsc netsc_ipaddr 123.123.123.123
```

You need to specify values (or use the default values) for each of the following variables:

- [if_network](#)
- [if_modem](#)
- [netsc_dhcp](#)
- [netsc_ipaddr](#)
- [netsc_ipnetmask](#)
- [netsc_ipgateway](#)
- [netsc_tpelinktest](#)

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_enetaddr 0a:2c:3f:1a:4c:4d
# scadm set netsc_ipaddr 123.123.123.123
```

You need to specify values (or use the default values) for each of the following variables:

- [if_network](#)
- [if_modem](#)
- [netsc_dhcp](#)
- [netsc_ipaddr](#)
- [netsc_ipnetmask](#)
- [netsc_ipgateway](#)
- [netsc_tpelinktest](#)

[About ALOM configuration variables](#)

Adding ALOM User Accounts

There are two ways to add ALOM user accounts:

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

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

Adding an ALOM User Account From the `sc>` Prompt

To add and configure an ALOM user account from the `sc>` prompt, perform the following steps:

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

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

To see the list of ALOM user accounts, permissions, and password status information, at the `sc>` prompt, type <u>usershow</u>. For example:

```
sc> usershow
```

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

Adding an ALOM User Account Using the `scadm` Utility

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

1. Log in to the system console as root.
2. At the # prompt, type the <u>scadm useradd</u> 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 <u>scadm userpassword</u> 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 <u>restrictions</u>. Make sure that the password you assign observes these restrictions.

4. To assign permissions to the account, type the <u>scadm userperm</u> command, followed by the user name you assigned to the account and the <u>permission levels</u> you want that user to have. For example:

scadm userperm joeuser cr

To view the permission and password status for a single ALOM user, at the # prompt, type the <u>scadm usershow</u> command, followed by the assigned user name. For example:

scadm usershow joeuser

Username	Permissions	Password?
joeuser	cr	Assigned

To see the list of ALOM user accounts, permissions, and password status information, at the # prompt, type <u>scadm usershow</u>. 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
- From the system console using the `scadm` utility

Note: You cannot delete the default `admin` account from ALOM.

Removing 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>
```

Removing 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
   #
   ```

Removing ALOM User Accounts

Changing ALOM Account Passwords

Changing 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>
```

Changing the ALOM Password for Another User

Note: You must have u level user permission to change another user's password.

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

- At the `sc>` prompt, use the userpassword command.
- At the # (superuser) prompt in the system console, use the scadm userpassword command.

Setting Up Email Alerts

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.

Note: You can configure email alerts for up to eight users.

To set up email alerts, follow these steps:

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.
2. Set the `if_emailalerts` variable to `true`.
3. Set values for the `mgt_mailhost` variable to identify one or two mail hosts on the network.
4. Set values for the `mgt_mailalert` variable to specify email addresses and alert levels for each user.
5. Run `scadm resetrsc`.

Sending and receiving alerts

Sending and Receiving Alerts

Sending Customized Alerts

You can use the <u>scadm</u> <u>send_event -c</u> command from the system console to send a customized critical alert at any time. You can do this <u>directly at the superuser prompt,</u> or you can <u>create a script</u> that runs and sends the alert under special circumstances.

There are three levels of alerts:

- Critical
- Major
- Minor

Receiving Alerts

If you are at the sc> prompt, 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
```

Creating a Script

You can embed the [scadm](#) [send_event](#) command into 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.

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 Sun Fire V440 host server. Use the `uname -i` command to obtain the platform name for your host server and replace the `SUNW,Sun-Fire-V440` 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.

```perl
#!/usr/bin/perl

# Disk Monitor
# USAGE: dmon <mount> <percent>
# e.g.: dmon /usr 80


@notify_cmd = `/usr/platform/SUNW,Sun-Fire-V440/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])
{
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', $nofify_msg)
|| die "ERROR: $!\n";
}
}
}

if ($found != 1)
{
print STDERR "ERROR: \"", $ARGV[0],
"\" is not a valid mount point\n\n";
}

close(DF);
```

Resetting ALOM

Resetting ALOM reboots the ALOM software. You might want to reset ALOM after you have changed settings on ALOM, such as specifying a new value for a configuration variable. You might also want to 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.
- At the superuser (#) prompt in the system console, type the [scadm resetrsc](#) command.

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 <u>poweroff</u> command, followed by the <u>poweron</u> command. A graceful reset allows 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.
- To force the server to shut down regardless of the state of the host server, type the <u>poweroff -f</u> command, followed by the <u>poweron</u> 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 <u>reset</u> command. The `reset -x` option generates the equivalent of an XIR (externally initiated reset).
- To immediately bring the server to the OpenBoot PROM prompt (`ok`), type the <u>break</u> command.

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.

Connecting to ALOM

The server's Ethernet port is labeled NET MGT, and 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.

Here are several ways to connect to ALOM:

- Connect an ASCII terminal directly to the [SERIAL MGT port](#).

- Use the `telnet` command to connect to ALOM through the [Ethernet connection attached to the NET MGT port](#).

- [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.

- Connect a port on a terminal server to the SERIAL MGT port, and then use the `telnet` command to connect to the terminal server.

For more information about these connections and other types of connections (such as `tip` connections), refer to your server's Installation and Administration Guides.

[Choosing ALOM communication ports](#)

[Logging in to your ALOM account](#)

[Using the serial management port](#)

Logging In to Your ALOM Account

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 need to specify the password. When you are logged in as `admin`, you can [add new users](#) and [specify passwords](#) and [permissions](#) for them.

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

1. [Connect to ALOM](#).
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 [go to the system console](#).

The ALOM [event log records login information](#). If more than five login failures occur within five minutes, ALOM generates a critical event.

[ALOM view log commands](#)

Backing Up Your ALOM Configuration

You should periodically use <u>scadm commands</u> to create a backup file on a remote system that records ALOM configuration settings. The following commands show how to copy information using scadm commands to a backup file named remote-filename.

Note: Before you can use these commands, you need to <u>set your path to the scadm utility</u>.

```
# 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.

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.

Note: This ALOM release supports *only* the following platforms:

- Netra 240 server
- Netra 440 server
- Sun Fire V210 server
- Sun Fire V240 server
- Sun Fire V250 server
- Sun Fire V440 server

All of these servers have front panel Locator LEDs.

To turn the LED on and off, use the <u>setlocator</u> command.

To check the state of the LED, use the <u>showlocator</u> command.

[Common ALOM tasks](#)

About the ALOM Command Shell

The ALOM command shell is a simple command-line interface that allows you to interact with ALOM. 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 command prompt (`sc>`) appears, and you can enter ALOM commands.

Note: Some of these commands are also available through the `scadm` utility as commands.

How to Enter 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
```

ALOM shell commands

ALOM shell error messages

Logging in to your ALOM account

Sending and receiving alerts

Types of ALOM Commands

The ALOM software uses the following types of commands:

- Server status and control commands
- View log commands
- Configuration commands
- FRU commands
- Other commands

ALOM shell commands

Configuration Commands

ALOM uses the following commands to set or display characteristics of ALOM or of the host server configuration:

- [password](#)
- [setalarm](#)
- [setdate](#)
- [setdefaults](#)
- [setsc](#)
- [setupsc](#)
- [showplatform](#)
- [showfru](#)
- [showusers](#)
- [showsc](#)
- [showdate](#)
- [usershow](#)
- [useradd](#)
- [userdel](#)
- [userpassword](#)
- [userperm](#)

[ALOM shell commands](#)

[Types of ALOM commands](#)

View Log Commands

ALOM uses the following commands to view and control the ALOM event log and the console log:

- `showlogs`
- `consolehistory`

[ALOM shell commands](#)

[Types of ALOM commands](#)

Server Status and Control Commands

ALOM uses the following commands to show server status and to control server operation:

- showenvironment
- shownetwork
- console
- break
- bootmode
- flashupdate
- reset
- poweroff
- poweron
- setlocator
- showlocator

[ALOM shell commands](#)

[Types of ALOM commands](#)

FRU Commands

ALOM enables you to monitor the status of certain FRUs (field-replaceable units) in the host server. You can use the following ALOM shell commands:

- showfru
- removefru

ALOM shell commands

Types of ALOM commands

FRU errors

Other Commands

ALOM uses the following additional commands:

- help
- logout

[ALOM shell commands](#)

[Types of ALOM commands](#)

ALOM Shell Commands

The following table lists the ALOM shell commands and briefly describes what these commands do. For more information about each command, click on the command name.

Command	Description
help	Displays a list of all ALOM commands with their syntax and a brief description of how each command works.
resetsc [-y]	Reboots ALOM. The -y option allows you to skip the confirmation question.
reset [-y] [-x]	Generates a hardware reset on the host server. The -x option generates the equivalent of an XIR (externally initiated reset) on the server. The -y option allows you to skip the confirmation question.
poweroff [-y] [-f]	Removes the main power from the host server. The -y option allows you to skip the confirmation question. The -f option forces an immediate shutdown.
poweron	Applies the main power to the host server or FRU.
flashupdate	Updates the ALOM firmware. This command downloads main and bootmon firmware images to ALOM.
removefru [-y] [FRU]	Prepares a FRU (for example, a power supply) for removal, and illuminates the host server's OK-to-Remove LED. The -y option allows you to skip the confirmation question.
setsc	Sets the specified ALOM parameter to the assigned value.
setupsc	Runs the interactive configuration script. This script configures the ALOM configuration variables.
setdate	Sets the date and time, when the managed operating system is not running.
setdefaults [-y] [-a]	Resets all ALOM configuration parameters to their default values. The -y option allows you to skip the confirmation question. The -a option resets the user information to the factory default (one admin account only).
setlocator [on/off]	Turns the Locator LED on the server on or off. This function is available only on host servers that have a Locator LED.

showlocator	Displays the current state of the Locator LED as either on or off. This function is available only on host servers that have a Locator LED.
showplatform [-v]	Displays information about the host server's hardware configuration, and whether the hardware is providing service.
showenvironment	Displays the environmental status of the host server. This information includes system temperatures, power supply status, front panel LED status, hard disk drive status, fan status, voltage and current sensor status, and keyswitch position.
showfru	Displays information about the FRUs (field-replaceable units) in a host server.
showusers [-g]lines	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 who. The -g option pauses the display after the number of lines you specify for lines.
shownetwork [-v]	Displays the current network configuration information. The –v option shows additional information about your network, including information about your DHCP server.
showsc [-v]	Displays the current NVRAM configuration parameters. The –v option is needed for full version information.
showlogs [-v]	Displays the history of all events logged in the ALOM event buffer.
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.
usershow	Displays a list of all user accounts, permission levels, and whether passwords are assigned.
useradd	Adds a user account to ALOM.
userdel [-y]	Deletes a user account from ALOM. The -y option allows you to skip the confirmation question.
userpassword	Sets or changes a user password.
userperm	Sets the permission level for a user account.
password	Changes the login password of the current user.

console [-f]	Connects to the host system console. The -f option forces the console write lock from one user to another.
break [-y]	Drops the host server from running the Solaris operating environment into OpenBoot PROM or kadb. The -y option allows you to skip the confirmation question.
bootmode [skipdiag | diag | reset_nvram | normal | bootscript="string"]	Controls the host server OpenBoot PROM firmware method of booting.
logout	Logs out from an ALOM shell session.
consolehistory [-v] [boot | run]	Displays the host system console output buffers. The -v option displays the entire contents of the specified log.

About ALOM configuration variables

About the scadm utility

Types of ALOM commands

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 `diag-switch?`, `post-trigger`, and `obdiag-trigger` settings immediately after the next server reset. If ALOM does not detect a server reset within 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 (nonvolatile 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 keyswitch 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.

How to Use the `bootmode` Command

Note: You must have [r level user permission](#) to use this command.

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`.

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

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

   where *option(s)* is the desired option(s), 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.

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 server's OpenBoot PROM NVRAM (nonvolatile read-only memory) settings to the factory default values. You must [reset](#) the server within 10 minutes.
`normal`	Results in a normal boot. The server runs low-level diagnostics. After you issue `bootmode normal`, you must [reset](#) the server.

`bootscript = "`*string*`"`	Controls the host server OpenBoot PROM firmware method of booting. It does not affect the current `bootmode` setting. *string* can be up to 64 bytes in length.
	
	You can specify a `bootmode` setting and set the bootscript within the same command. For example:
	
	`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"`
	
	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`.
	
	Note: If you set `bootmode bootscript = ""`, ALOM sets the bootscript to empty.
	
	To view the `bootmode` settings, type the following command:
	
	`sc>` **`bootmode`**

```
Bootmode: reset_nvram
Expires WED MAR 05 21:18:33 2003
bootscript="setenv diag-switch?
true"
```

[ALOM shell commands](#)

[Redirecting the system console from ALOM to other devices](#)

[reset](#)

[Types of ALOM commands](#)

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 keyswitch](#) is *not* in the Locked position, and that the system console is directed to ALOM. If the front panel keyswitch is in the Locked position, ALOM returns the error message `Error: Unable to execute break as system is locked`.

How to Use the `break` Command

Note: You must have [c level user permission](#) to use this command.

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 the prompt: `Are you sure you want to send a break to the system [y/n]?`

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[userperm](#)

console

Use the `console` command 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 system 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.

How to Use the `console` Command

Note: You must have c level user permission to use this command.

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.

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 the -f option with the console command to obtain the write lock, 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.

Configuring the `-f` Option

Before you use the `-f` option with the `console` command, you need to configure variables for both OpenBoot PROM and the Solaris operating environment on your host server.

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.

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 two 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**

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`consolehistory`

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

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

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 environment is up and running, ALOM switches the buffer to the `run` log.

How to Use the `consolehistory` Command

Note: You must have [c level user permission](#) to use this command.

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: Time stamps recorded in console logs reflect server time. These time stamps reflect local time, and ALOM event logs use UTC (Coordinated Universal Time). The Solaris operating environment 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.

Option	Description
–b *lines*	Displays the number of lines that you specify for *lines* from the beginning of the log buffer. For example: `consolehistory boot -b 10`
–e *lines*	Displays the number of lines that you specify for *lines* 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: `consolehistory run -e 15`
–g *lines*	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: `consolehistory run -v -g 5`
–v	Displays the entire contents of the specified log.

[ALOM shell commands](#)

[Types of ALOM commands](#)

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.

How to Use the `flashupdate` Command

Note: You must have a level user permission to use this command.

Before You Begin

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

- IP address of the server from which you want to download the firmware image
- The path at which the image is stored
- The user name 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 keyswitch, make sure that the keyswitch is in the Normal (unlocked) position. If you use this command with the keyswitch in the Locked position, the firmware will not update. For more information about the front panel keyswitch, refer to your server's documentation.

What to Do

1. At the `sc>` prompt, type one 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 <u>uname -i</u> command.

2. When prompted, type your user name and password, which are based on your UNIX or LDAP user name and password and not your ALOM user name and password.
3. 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.`
4. Type the <u>resetsc</u> command to reset ALOM.

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

```
sc> flashupdate -s xxx.xxx.xxx.xxx -f /usr/platform/SUNW,Sun-Fire-
V440/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.

Option	Description
`-s` *ipaddr*	Directs ALOM to download the firmware image from a server located at *ipaddr*. *ipaddr* describes an IP address in standard dot notation, such as 123.456.789.012.

-f *pathname*	Directs ALOM to the location of the image file. *pathname* is a full directory path, including the name of the image file, such as `/files/ALOM/fw/alommainfw`.
-v	Displays verbose output. This option provides detailed information about the progress of the download process as it occurs.

[ALOM shell commands](#)

[Types of ALOM commands](#)

help

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

How to Use the `help` Command

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

To display help for all available commands, type the following command:

```
sc > help
```

To display help for a specific command, type the following 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.

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

[ALOM shell commands](#)

[Other commands](#)

[Types of ALOM commands](#)

logout

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

How 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**

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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.

How to Use the `password` Command

Note: This command allows 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.

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>
```

Password Restrictions

Passwords have the following restrictions:

- They must contain at least six characters. Only the first eight characters are significant, so passwords longer than eight characters are treated as though they only had 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.

- The new password must differ from the old by at least three characters. For comparison purposes, uppercase and lowercase letters are equivalent.

[ALOM configuration commands](#)

[ALOM shell commands](#)

[Types of ALOM commands](#)

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.

How to Use the `poweroff` Command

Note: You must have [r level user permission](#) to use this command.

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 using any options, the command initiates a graceful shutdown of the Solaris operating environment, similar to one of the Solaris operating environment 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](#).

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 `halt`; that is, it does not perform a graceful shutdown of the system or synchronize the file systems.
-y	Instructs ALOM to proceed without issuing the following confirmation: `Are you sure you want to power off the system?`

ALOM shell commands

bootmode

poweron

Types of ALOM commands

poweron

Use the `poweron` command to power on the server. If the host server's keyswitch is in the Off position, or if the server is already powered on, this command has no effect.

How to Use the `poweron` Command

Note: You must have [r level user permission](#) to use this command.

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

`sc> ` **`poweron`**

Note: If you have just used the poweroff command to power down 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.

poweron

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.

[ALOM shell commands](#)

[bootmode](#)

[poweroff](#)

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`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.

How 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.

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.

removefru

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. 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 environment instead.

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

How to Use the `reset` Command

Note: You must have [r level user permission](r) to use this command.

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](use).

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 `ok` 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?`

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[Using OpenBoot PROM features](#)

resetsc

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

How to Use the `resetsc` Command

Note: You must have [a level user permission](#) to use this command.

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]?`

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

Command Option

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

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

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setalarm

Use the `setalarm` command to control the Netra 240 or Netra 440 server alarms (four dry contact alarm relays and four corresponding LED indicators).

The four alarms are:

1. Critical
2. Major
3. Minor
4. User

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

How to Use the `setalarm` Command

Note: You must have [a level user permission](#) to use this command.

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

`sc>` **`setalarm`** `[critical|major|minor|user] [on|off]`

For example, to turn the critical alarm on, type:

`sc>` **`setalarm critical on`**

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[Types of ALOM commands](#)

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 is powered off.

Note: When setting the date in OpenBoot PROM, simply using the `break` command to switch to 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.

How to Use the `setdate` Command

Note: You must have [a level user permission](#) to use this command.

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

```
sc> setdate mmddHHMMccyy.SS
```

This command accepts settings for the month, day, hours, minutes, century, years, and seconds. 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 UTC (Coordinated Universal Time). ALOM does not accept time zone conversions or daylight time changes.

This example sets the time to September 16, 2002, at 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.

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)

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setdate

[Types of ALOM commands](#)

setdefaults

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

How to Use the `setdefaults` Command

Note: You must have [a level user permission](#) to use this command. You need to set the password to execute permission-level commands.

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

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

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

After the `Please reset your ALOM` message appears, 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.

Option	Description
-a	Sets all ALOM configuration variables to their factory defaults, and clears the user account and user configuration information as well. The only account that remains on the system is the `admin` user account with no password.
-y	Executes the command wihout first asking the confirmation question: `"Are you sure you want to reset the SC configuration?"`

ALOM shell commands

Types of ALOM commands

setlocator

Use the `setlocator` command to turn the host server's Locator LED on or off.

Note: This command works only with servers that have front panel Locator LEDs. The Netra 240, Netra 440, Sun Fire V210, Sun Fire V240, Sun Fire V250, and Sun Fire V440 servers have Locator LEDs.

For more information about Locator LEDs, refer to your server's documentation.

How to Use the `setlocator` Command

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.

Command Options

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

ALOM shell commands

[showlocator](#)

[Types of ALOM commands](#)

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 you customize your ALOM configuration, use the setsc command.

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).

How to Use the setsc Command

Note: You must have a level user permission to use this command.

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.

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.

[ALOM shell commands](#)

[Types of ALOM commands](#)

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.

How to Use the `setupsc` Command

Note: You must have a level user permission to use this command.

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

`sc> setupsc`

The setup script starts.

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. 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 interface variables](#)
- [Network interface variables](#)
- [Managed system interface variables](#)
- [Network management and notification variables](#)
- [System variables](#)

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

[About ALOM configuration variables](#)

[ALOM shell commands](#)

[Configuration table](#)

[Configuring ALOM](#)

[Types of ALOM commands](#)

showdate

Use the `showdate` command to show the current ALOM date and time. Note that the time ALOM shows is UTC (Coordinated Universal Time), and that your host server shows your local date and time.

How 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.

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

ALOM configuration commands

ALOM shell commands

Types of ALOM commands

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, keyswitch position, voltage and current sensors, and so on. The output uses a format similar to the UNIX command `prtdiag(1m)`.

How 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.

For example:

`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
MB.T_AMB	OK	32	-18	-10	0	65	75	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



-----------------------------------------------------------
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           --       --       --
```

showenvironment

```
--------------------------------------------------------------------------------
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     3.38    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 Supply Supply Supply Supply Supply Status
---------------------------------------------
PS0     ON     OFF     OFF     OFF     OFF     OFF
```

```
PS1     ON      OFF     OFF     OFF     OFF     OFF
PS2     ON      OFF     OFF     OFF     OFF     OFF
PS3     ON      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.

```
--------------------------------------------------------------------------------
---------------
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

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:

| | | | OK-to- |
Supply	Active	Service	Remove
PS0	ON	OFF	OFF
PS1	ON	OFF	OFF

Supply Active Service OK-to-Remove

PS0 ON OFF OFF
PS1 ON OFF OFF

[ALOM shell commands](#)

showenvironment

[Types of ALOM commands](#)

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.

How to Use the `showfru` Command

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

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

`sc>` **showfru**

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

```
sc> showfru
FRU_PROM at PS0.SEEPROM

     Timestamp: FRI FEB 07 18:18:32 2003
     Description: P/S,SSI MPS,680W,HOT PLUG
     Manufacture Location: DELTA ELECTRONICS CHUNGLI TAIWAN
     Sun Part No: 3001501
     Sun Serial No: T00420
     Vendor: Delta Electronics
     Initial HW Dash Level: 02
     Initial HW Rev Level: 05
     Shortname: A42_PSU


FRU_PROM at MB.SEEPROM

     Timestamp: TUE MAY 13 14:57:15 2003
     Description: ASSY,A42,MOTHERBOARD
     Manufacture Location: Celestica,Toronto,Ontario
     Sun Part No: 5016344
     Sun Serial No: 001196
     Vendor: Celestica
```

```
        Initial HW Dash Level: 04
        Initial HW Rev Level: 10
        Shortname: A42_MB


FRU_PROM at PS1.SEEPROM

        Timestamp: FRI FEB 07 15:46:14 2003
        Description: P/S,SSI MPS,680W,HOT PLUG
        Manufacture Location: DELTA ELECTRONICS CHUNGLI TAIWAN
        Sun Part No: 3001501
        Sun Serial No: T00409
        Vendor: Delta Electronics
        Initial HW Dash Level: 02
        Initial HW Rev Level: 05
        Shortname: A42_PSU


FRU_PROM at SC.SEEPROM

        Timestamp: FRI MAR 07 13:36:00 2003
        Description: ASSY,ALOM Card
        Manufacture Location: Celestica, Toronto
        Sun Part No: 5016346
        Sun Serial No: 000461
        Vendor: Celestica
        Initial HW Dash Level: 04
        Initial HW Rev Level: 05
        Shortname: ALOM_Card


FRU_PROM at SCSIBP.SEEPROM

        Timestamp: MON MAR 10 12:56:22 2003
        Description: ASSY,A42,4 DRV SCSI BKPLN
        Manufacture Location: Celestica, Toronto, Canada
        Sun Part No: 5016335
        Sun Serial No: 001213
        Vendor: Celestica
        Initial HW Dash Level: 03
        Initial HW Rev Level: 05
        Shortname: A42_SCSI_BP
```

```
FRU_PROM at C0.SEEPROM


      Timestamp: MON MAR 17 12:09:52 2003
      Description: ASSY,A42,1.280GHZ,0MB,CPU BD
      Manufacture Location: Celestica, Toronto, Canada
      Sun Part No: 5016370
      Sun Serial No: 000335
      Vendor: Celestica
      Initial HW Dash Level: 02
      Initial HW Rev Level: 05
      Shortname: A42_CPU_1.280GHZZ


FRU_PROM at C1.SEEPROM


      Timestamp: MON MAR 17 12:10:12 2003
      Description: ASSY,A42,1.280GHZ,0MB,CPU BD
      Manufacture Location: Celestica, Toronto, Canada
      Sun Part No: 5016370
      Sun Serial No: 000285
      Vendor: Celestica
      Initial HW Dash Level: 02
      Initial HW Rev Level: 05
      Shortname: A42_CPU_1.280GHZZ


FRU_PROM at C2.SEEPROM


      Timestamp: MON MAR 17 12:10:31 2003
      Description: ASSY,A42,1.280GHZ,0MB,CPU BD
      Manufacture Location: Celestica, Toronto, Canada
      Sun Part No: 5016370
      Sun Serial No: 000306
      Vendor: Celestica
      Initial HW Dash Level: 02
      Initial HW Rev Level: 05
      Shortname: A42_CPU_1.280GHZZ



FRU_PROM at C3.SEEPROM


      Timestamp: TUE MAR 18 14:01:25 2003
```

```
        Description: ASSY,A42,1.280GHZ,0MB,CPU BD
        Manufacture Location: Celestica, Toronto, Canada
        Sun Part No: 5016370
        Sun Serial No: 000313
        Vendor: Celestica
        Initial HW Dash Level: 02
        Initial HW Rev Level: 05
        Shortname: A42_CPU_1.280GHZZ


FRU_PROM at C0.P0.B0.D0.SEEPROM

        Timestamp: MON DEC 30 12:00:00 2002
        Description: SDRAM DDR, 1024 MB
        Manufacture Location:
        Vendor: Samsung
        Vendor Part No: M3 12L2828DT0-CA2


FRU_PROM at C0.P0.B0.D1.SEEPROM

        Timestamp: MON DEC 30 12:00:00 2002
        Description: SDRAM DDR, 1024 MB
        Manufacture Location:
        Vendor: Samsung
        Vendor Part No: M3 12L2828DT0-CA2


FRU_PROM at C0.P0.B1.D0.SEEPROM

        Timestamp: MON DEC 30 12:00:00 2002
        Description: SDRAM DDR, 1024 MB
        Manufacture Location:
        Vendor: Samsung
        Vendor Part No: M3 12L2828DT0-CA2
```

[ALOM shell commands](#)

[FRU commands](#)

[Types of ALOM commands](#)

showlocator

Use the `showlocator` command to view the state of the host server's Locator LED (on or off).

Note: This command works only with servers that have the front panel Locator LEDs. The Netra 240, Netra 440, Sun Fire V210, Sun Fire V240, Sun Fire V250, and Sun Fire V440 servers have Locator LEDs.

For more information about the Locator LEDs, refer to your server's documentation.

How 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.

[ALOM shell commands](#)

[setlocator](#)

[Types of ALOM commands](#)

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).

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.

How 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: Time stamps 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.

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.

Option	Description
-v	Displays the entire contents of the buffer and the contents of NVRAM (the persistent event log).
-b *lines*	Displays the events from the beginning of the buffer, where *lines* is the number of lines that you specify. For example, the following command displays the first 100 lines in the buffer: showlogs -b 100
-e *lines*	Displays the events from the end of the buffer, where *lines* 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: showlogs -e 10
-g *lines*	Controls the number of lines displayed on the screen at a given time, where *lines* is the number of lines that you specify. After each pause, ALOM shows the following message: --pause-- Press 'q' to quit, any other key to continue.

[ALOM shell commands](#)

[consolehistory](#)

[Types of ALOM commands](#)

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.

How 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](#).

[ALOM shell commands](#)

[Types of ALOM commands](#)

showplatform

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

How 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:

```
sc> showplatform

SUNW,Sun-Fire-v440

Domain        Status
------        ------
wgs48-78      OS Running

sc> showplatform

SUNW,Sun-Fire-v440

Domain        Status
------        ------
wgs48-78      OS Reset
```

[ALOM configuration commands](#)

[ALOM shell commands](#)

[ALOM software commands](#)

[FRU commands](#)

showsc

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

How to Use the `showsc` Command

Note: You do not need [user permissions](#) to use this command.

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.

For example, `xir` is the current value for the [sys_autorestart](#) configuration variable:

`sc>` **showsc sys_autorestart**

`xir`

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`

`sc>` **showsc -v version**
`Advanced Lights Out Manager`
`SC Firmware version: 1.1.0`
`SC Bootmon version: 1.1.0`

```
SC Bootmon Build Release: 37
SC bootmon checksum: C717B0FB
SC Bootmon built May 13 2003, 15:05:48
SC Build Release: 37
SC firmware checksum: 1BECB05A
SC firmware built May 13 2003, 15:05:33
SC firmware flashupdate MAY 19 2003, 14:55:38
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.

Option	Description
`-v`	When used with the *param* option, the `-v` option might display more detailed information about the specified configuration variable (depending on the variable).
param	Directs the `showsc` command to display the value of the configuration variable you specified.

[ALOM shell commands](#)

[Other commands](#)

[Types of ALOM commands](#)

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 system console session, or just monitor the system console in read-only mode).

How 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 following 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.

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

useradd

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

How to Use the `useradd` Command

Note: You must have u level user permission to use this command.

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.

To set permission levels for a user name, use the `userperm` command.

ALOM configuration commands

ALOM shell commands

Types of ALOM commands

useradd

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.

How to Use the `userdel` Command

Note: You must have u level user permission to use this command.

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 issuing the following confirmation question: `Are you sure you want to delete user oldacct [y/n]?`

ALOM configuration commands

ALOM shell commands

Types of ALOM commands

userpassword

Use the `userpassword` command to change the password for the specified user account. This command is designed for administrators who need to change user passwords on ALOM accounts, 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.

How to Use the `userpassword` Command

Note: You must have [u level user permission](#) to use this command.

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 at least six characters. Only the first eight characters are significant, so passwords longer than eight characters are treated as though they only had 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.

- The new password must differ from the old by at least three characters. For comparison purposes, uppercase and lowercase letters are equivalent.

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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 to change settings. There are four permission levels that increase a user's authorization. You can specify zero through four permission levels.

Permission Level	Description
a	Administrative. This user is authorized to change the state of ALOM configuration variables and reboot ALOM.
u	User administration. This user is authorized to add users and delete users, change user permissions, and change the authorization level of other users.
c	Console permission. This user is authorized to connect to the host server system console.
r	Reset/power permission. This user is authorized to reset the host server, and power the server on and off.

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.

How to Use the `userperm` Command

Note: You must have <u>u level user permission</u> 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 <u>usershow</u> command.

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

- <u>help</u>
- <u>password</u>
- <u>showdate</u>
- <u>shownetwork</u>
- <u>showenvironment</u>
- <u>showlogs</u>
- <u>consolehistory</u>
- <u>showsc</u>
- <u>logout</u>
- <u>showlocator</u>

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

`sc>` **usershow**

```
Username             Password
            Permissions
----------             ----------
            -----------


admin       cuar       Assigned
jeremy      ----       Assigned
```

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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.

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

How to Use the `usershow` Command

Note: You must have [u level user permission](#) to use this command.

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

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About 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 command shell or the scadm set command.

How to Use Configuration Variables in the ALOM Command Shell

Note: You must have a level user permission to set configuration variables from the ALOM command shell. You must log in to the host server as root to set an ALOM configuration variable using the scadm utility.

From the ALOM command shell:

- To specify a value (or values) for this variable, use the setupsc command.
- To show the configuration variables and their settings, use the showsc command.
- To set a value for a configuration variable, use the setsc command.
- To reset all variables to their factory defaults, use the setdefaults command.

Using the scadm utility:

- To view the current value, use the show command.
- To change the value, use the set command.

Types of Configuration Variables

ALOM provides the following types of configuration variables:

- Serial port variables
- Network interface variables
- Managed system interface variables
- Network management and notification variables
- System user variables

[About the `scadm` utility](#)

[ALOM shell commands](#)

Serial Management Port Variables

The host server sets the serial management port variables when it starts up, so these variables are read-only. You do not need to set or adjust them.

ALOM uses the serial management port variables to report on the serial management port (SERIAL MGT) settings on the host server. To view the settings for these variables, from the ALOM command shell, use the <u>showsc</u> command. To view the settings using the scadm utility, use the <u>scadm show</u> command.

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

- <u>ser_baudrate</u>
- <u>ser_data</u>
- <u>ser_parity</u>
- <u>ser_stopbits</u>

<u>About ALOM configuration variables</u>

<u>setsc</u>

<u>setupsc</u>

<u>showsc</u>

Network Interface Variables

The network interface variables specify the network settings that ALOM uses across its Ethernet connection at the network management (NET MGT) port on the host server.

ALOM uses the following network interface variables:

- <u>if_emailalerts</u>
- <u>if_network</u>
- <u>if_modem</u>
- <u>netsc_dhcp</u>
- <u>netsc_ipaddr</u>
- <u>netsc_ipnetmask</u>
- <u>netsc_ipgateway</u>
- <u>netsc_tpelinktest</u>
- <u>netsc_enetaddr</u>

From the ALOM command shell:

- To specify a value (or values) for this variable, use the <u>setupsc</u> command.
- To show the configuration variables and their settings, use the <u>showsc</u> command.
- To set a value for a configuration variable, use the <u>setsc</u> command.
- To reset all variables to their factory defaults, use the <u>setdefaults</u> command.

Using the scadm utility:

- To view the current value, use the <u>show</u> command.
- To change the value, use the <u>set</u> command.

<u>About ALOM configuration variables</u>

Managed System Interface Variables

The managed system interface variables 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)
- `sys_bootfailrecovery` (settable)
- `sys_bootrestart` (settable)
- `sys_boottimeout` (settable)
- `sys_eventlevel` (settable)
- `sys_hostname` (not settable)
- `sys_enetaddr` (not settable)
- `sys_maxbootfail` (settable)
- `sys_xirtimeout` (settable)
- `sys_wdttimeout` (settable)

From the ALOM command shell:

- To specify a value (or values) for a settable variable, use the `setupsc` command.
- To show the configuration variables and their settings, use the `showsc` command.
- To set a value for a settable variable, use the `setsc` command.
- To reset all settable variables to their factory defaults, use the `setdefaults` command.

Using the `scadm` utility:

- To view the current value, use the `show` command.
- To change the value, use the `set` command.

About ALOM configuration variables

Network Management and Notification Variables

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

ALOM supports the following network management and notification variables:

- mgt_mailhost
- mgt_mailalert

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

- To set up these variables, use the setupsc command.
- To view the current settings, use the showsc command.
- To change a value for a variable, use the setsc command.

How to use configuration variables

System User Variables

The system user variables allow 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.

ALOM supports the following system user variables:

- sc_backupuserdata
- sc_clieventlevel
- sc_clipasswdecho
- sc_cliprompt
- sc_clitimeout
- sc_customerinfo
- sc_escapechars
- sc_powerondelay
- sc_powerstatememory

From the ALOM command shell:

- To specify a value (or values) for this variable, use the setupsc command.
- To show the configuration variables and their settings, use the showsc command.
- To set a value for a configuration variable, use the setsc command.
- To reset all variables to their factory defaults, use the setdefaults command.

Using the `scadm` utility:

- To view the current value, use the show command.
- To change the value, use the set command.

About ALOM configuration variables

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](). The network management and notification variables, `mgt_mailhost` and `mgt_mailalert`, specify how to manage and enable email alerts.

Note: The `if_network` variable must be enabled before you can enable `if_emailalerts`.

From the ALOM command shell:

- To specify a value for this variable, use the `setupsc` command.
- To set or change the value, use the `setsc` command.
- To view the current value for this variable, use the `showsc` command.

How 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).

How 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](#).

From the ALOM command shell:

- To specify a value (or values) for this variable, use the `setupsc` command.
- To show the configuration variables and their settings, use the `showsc` command.
- To set a value for a configuration variable, use the `setsc` command.
- To reset all variables to their factory defaults, use the `setdefaults` command.

Using the `scadm` utility:

- To view the current value, use the `show` command.
- To change the value, use the `set` command.

How 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).

How 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 may want to configure ALOM for use on an Ethernet to allow local users to connect to ALOM via Telnet. See Configuring ALOM or Configuring Your Network Manually for further information.

How 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 will not be able to 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.

How to Return the Serial Management Port for 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 server, use the `scadm` utility, and type the following:
     ```
     scadm set if_modem false
     ```

Modem Configuration Troubleshooting

Issue	Solution
ALOM modem does not answer	Verify that cabling is set up correctly. See [Setting Up the Hardware](#) for additional information.
ALOM modem answers then immediately hangs up	Verify that the `if_modem` variable is set to `true`.
ALOM modem answers but connections appear dead	1. Type the ALOM escape character (**#.**) to see if you can return to the ALOM login or `sc>` 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 `AT&K0` modem command.

[Configuring an external modem](#)

`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.

From the ALOM command shell:

- To specify a value (or values) for this variable, use the <u>setupsc</u> command.
- To view the current value, use the <u>showsc</u> command.
- To change the value(s), use the <u>setsc</u> command.

Using the `scadm` utility:

- To view the current value for this variable, use the <u>show</u> command.
- To change the value, use the <u>set</u> command.

How 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:

   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 30 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 30 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.

How to Use the `setsc` Command to Change the `mgt_mailalert` Variable

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

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

where *email* is the email address to which you want the alert sent, and *level* is the 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`**

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mgt_mailhost

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

From the ALOM command shell:

- To specify a value for this variable, use the <u>setupsc</u> command.
- To view the current value, use the <u>showsc</u> command.
- To change the value, use the <u>setsc</u> command.

Using the `scadm` utility:

- To view the current value for this variable, use the <u>show</u> command.
- To change the value, use the <u>set</u> command.

How 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 host(s) 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
```

How 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

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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`.

From the ALOM command shell:

- To specify a value for this variable, use the <u>setupsc</u> command.
- To view the current value, use the <u>showsc</u> command.
- To change the value, use the <u>setsc</u> command.

Using the `scadm` utility:

- To view the current value for this variable, use the <u>show</u> command.
- To change the value, use the <u>set</u> command.

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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.

Using the scadm utility:

- To view the current value, use the show command.

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netsc_ipaddr

Use this variable to specify the ALOM IP (Internet Protocol) address.

From the ALOM command shell:

- To specify a value for this variable, use the <u>setupsc</u> command.
- To view the current value, use the <u>showsc</u> command.
- To change the value, use the <u>setsc</u> command.

Using the scadm utility:

- To view the current value for this variable, use the <u>show</u> command.
- To change the value, use the <u>set</u> command.

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 <u>netsc_dhcp</u> is set to true, then the <u>setupsc</u> script does not ask you to set netsc_ipaddr.

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 <u>netsc_ipgateway</u> and <u>netsc_ipnetmask</u>:

```
Error: Invalid IP address for gateway address <netsc_ipgateway> and IP
netmask <netsc_ipnetmask>.
```

Check that all the values you entered are correct. If you need help obtaining the correct IP address, ask your network administrator.

Note: netsc_ipaddr does not update results from an scadm shownetwork command until the ALOM is reset via scadm resetrsc.

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netsc_ipgateway

Use this variable to specify the IP (Internet Protocol) address for the default IP gateway (also called a router). This gateway allows ALOM to access different subnetworks, other than the one to which it is connected.

From the ALOM command shell:

- To specify a value for this variable, use the setupsc command.
- To view the current value, use the showsc command.
- To change the value, use the setsc command.

Using the scadm utility:

- To view the current value for this variable, use the show command.
- To change the value, use the set command.

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.

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. If you need help obtaining the correct IP address, ask your network administrator.

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netsc_ipnetmask

Use this variable to specify the ALOM IP (Internet Protocol) netmask.

From the ALOM command shell:

- To specify a value for this variable, use the <u>setupsc</u> command.
- To view the current value, use the <u>showsc</u> command.
- To change the value, use the <u>setsc</u> command.

Using the scadm utility:

- To view the current value for this variable, use the <u>show</u> command.
- To change the value, use the <u>set</u> command.

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 <u>netsc_dhcp</u> is set to true, then the <u>setupsc</u> script does not ask you to set netsc_ipnetmask.

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 <u>netsc_ipgateway</u> and <u>netsc_ipaddr</u>:

```
Error: Invalid IP netmask for IP address <netsc_ipaddr> and IP gateway
<netsc_ipgateway>.
```

Check that all the values you entered are correct. If you need help obtaining the correct IP address, ask your network administrator.

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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.

From the ALOM command shell:

- To specify a value for this variable, use the <u>setupsc</u> command.
- To view the current value, use the <u>showsc</u> command.
- To change the value, use the <u>setsc</u> command.

Using the `scadm` utility:

- To view the current value for this variable, use the <u>show</u> command.
- To change the value, use the <u>set</u> command.

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 `"tpe-link-test?"`, which is available on some Sun platforms.

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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).

If you are running the <u>setupsc</u> 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)

From the ALOM command shell:

- To view the current value for this variable, use the <u>showsc</u> command.
- To change the current value, use the <u>setsc</u> command.

Using the `scadm` utility:

- To view the current value for this variable, use the <u>show</u> command.
- To change the current value, use the <u>set</u> command.

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).

From the ALOM command shell:

- To specify a value for this variable, use the <u>setupsc</u> command.
- To view the current value, use the <u>showsc</u> command.
- To change the value, use the <u>setsc</u> command.

Using the scadm utility:

- To view the current value for this variable, use the <u>show</u> command.
- To change the value, use the <u>set</u> command.

[About ALOM configuration variables](#)

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[showsc](#)

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.

From the ALOM command shell:

- To specify a value (or values) for this variable, use the <u>setupsc</u> command.
- To view the current value, use the <u>showsc</u> command.
- To change the value(s), use the <u>setsc</u> command.

Using the `scadm` utility:

- To view the current value for this variable, use the <u>show</u> command.
- To change the value, use the <u>set</u> command.

How 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 <u>setupsc</u> command. The `setupsc` command script prompts you for the following:

```
Enter the SC cli prompt (maximum of 16 characters) [sc] ?
```

To use the default prompt of `sc>`, press Return.

How 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.

[About ALOM configuration variables](#)

[showsc](#)

[System user variables](#)

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.

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. The setupsc script prompts you to enter a value as follows:

```
Enter the SC CLI timeout in seconds (maximum of 10000s) [0]?
```

From the ALOM command shell:

- To specify a value (or values) for this variable, use the [setupsc](#) command.
- To view the current value, use the [showsc](#) command.
- To change the value(s), use the [setsc](#) command.

Using the scadm utility:

- To view the current value for this variable, use the [show](#) command.
- To change the value, use the [set](#) command.

[About ALOM configuration variables](#)

sc_clitimeout

System user variables

showsc

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 command prompt:

sc> **setsc sc_clipasswdecho n**

You can specify a value for this variable using the <u>setupsc</u> command. The setupsc script prompts you to enter a value as follows:

Should password entry echo '*'s [y] ?

From the ALOM command shell:

- To specify a value (or values) for this variable, use the <u>setupsc</u> command.
- To view the current value, use the <u>showsc</u> command.
- To change the value(s), use the <u>setsc</u> command.

Using the scadm utility:

- To view the current value for this variable, use the <u>show</u> command.
- To change the value, use the <u>set</u> command.

<u>About ALOM configuration variables</u>

<u>showsc</u>

<u>System user variables</u>

sc_clipasswdecho

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 <u>setupsc</u> script asks `Do you wish to configure the SC parameters [y]?`, then the `setupsc` script 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.
```

From the ALOM command shell:

- To specify a value (or values) for this variable, use the <u>setupsc</u> command.
- To view the current value, use the <u>showsc</u> command.
- To change the value(s), use the <u>setsc</u> command.

Using the `scadm` utility:

- To view the current value for this variable, use the <u>show</u> command.
- To change the value, use the <u>set</u> command.

<u>About ALOM configuration variables</u>

<u>showsc</u>

<u>System user variables</u>

sc_escapechars

Use this variable to change the escape character sequence. The default escape character sequence you use to switch from a system console session back to ALOM is **#.** (pound-period). You can specify the first of the two characters to customize the escape character sequence. The second character must always be a period (.).

You can specify a value for this variable using the <u>setupsc</u> 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 ".".
[#.]?
```

From the ALOM command shell:

- To specify a value (or values) for this variable, use the <u>setupsc</u> command.
- To view the current value, use the <u>showsc</u> command.
- To change the value(s), use the <u>setsc</u> command.

Using the `scadm` utility:

- To view the current value for this variable, use the <u>show</u> command.
- To change the value, use the <u>set</u> command.

<u>About ALOM configuration variables</u>

<u>showsc</u>

<u>System user variables</u>

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 <u>setupsc</u> 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]?
```

From the ALOM command shell and from the `scadm` utility, the values for this variable are `true` and `false`.

For example, from the `scadm` utility, type the following command to enable the delay:

set sc_powerondelay true

To disable the delay, type the following:

set sc_powerondelay false

From the ALOM command shell:

- To specify a value (or values) for this variable, use the <u>setupsc</u> command.
- To view the current value, use the <u>showsc</u> command.
- To change the value(s), use the <u>setsc</u> command.

Using the `scadm` utility:

- To view the current value for this variable, use the <u>show</u> command.
- To change the value, use the <u>set</u> command.

<u>About ALOM configuration variables</u>

[showsc](#)

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.

peractmemory

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 allows 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

From the ALOM command shell:

- To specify a value (or values) for this variable, use the [setupsc](#) command.
- To view the current value, use the [showsc](#) command.
- To change the value(s), use the [setsc](#) command.

Using the `scadm` utility:

- To view the current value for this variable, use the [show](#) command.
- To change the value, use the [set](#) command.

[About ALOM configuration variables](#)

[showsc](#)

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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 value for this variable, use the [showsc](#) command.

Using the `scadm` utility:

- To view the current value for this variable, use the [show](#) command.

[About ALOM configuration variables](#)

[Serial management port variables](#)

[showsc](#)

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.

Using the `scadm` utility:

- To view the current value for this variable, use the [show](#) command.

[About ALOM configuration variables](#)

[Serial management port variables](#)

[showsc](#)

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 value for this variable, use the <u>showsc</u> command.

Using the `scadm` utility:

- To view the current value for this variable, use the <u>show</u> command.

<u>About ALOM configuration variables</u>

<u>Serial management port variables</u>

<u>showsc</u>

`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 value for this variable, use the <u>showsc</u> command.

Using the `scadm` utility:

- To view the current value for this variable, use the <u>show</u> command.

[About ALOM configuration variables](#)

[Serial management port variables](#)

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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).
- reset -- Perform a server reset, booting to the Solaris operating environment.

The default value is xir.

Note: For the xir and reset options, an event is logged to the ALOM event log in addition to a log entry describing the action.

From the ALOM command shell:

- To specify a value (or values) for this variable, use the setupsc command.
- To view the current value, use the showsc command.
- To change the value(s), use the setsc command.

Using the scadm utility:

- To view the current value for this variable, use the show command.
- To change the value, use the set command.

About ALOM configuration variables

Managed system interface variables

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sys_bootfailrecovery

The `sys_bootfailrecovery` variable tells ALOM what recovery action to take if the system fails to boot after the value set in the [sys_maxbootfail](#) variable is met.

`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`.

From the ALOM command shell:

- To specify a value (or values) for this variable, use the [setupsc](#) command.
- To view the current value, use the [showsc](#) command.
- To change the value(s), use the [setsc](#) command.

Using the `scadm` utility:

- To view the current value for this variable, use the [show](#) command.
- To change the value, use the [set](#) command.

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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 <u>sys_boottimeout</u> variable.

`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 <u>sys_boottimeout</u> variable is reached.
- `reset` – Perform a server <u>reset</u>, booting to the Solaris operating environment.

The default value is `none`.

For the `xir` and `reset` options, an event is logged to the ALOM event log.

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.

From the ALOM command shell:

- To specify a value (or values) for this variable, use the <u>setupsc</u> command.
- To view the current value, use the <u>showsc</u> command.
- To change the value(s), use the <u>setsc</u> command.

Using the `scadm` utility:

- To view the current value for this variable, use the <u>show</u> command.
- To change the value, use the <u>set</u> command.

<u>About ALOM configuration variables</u>

[Managed system interface variables](#)

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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.

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 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.

From the ALOM command shell:

- To specify a value (or values) for this variable, use the setupsc command.
- To view the current value, use the showsc command.
- To change the value(s), use the setsc command.

Using the scadm utility:

- To view the current value for this variable, use the show command.
- To change the value, use the set command.

About ALOM configuration variables

Managed system interface variables

showsc

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 host server's MAC address (Ethernet address) and then stored as a variable in ALOM.

From the `sc>` prompt:

- To view the current value for this variable, use the <u>showsc</u> command.

Using the `scadm` utility:

- To view the current value for this variable, use the <u>show</u> command.

<u>About ALOM configuration variables</u>

<u>Managed system interface variables</u>

<u>showsc</u>

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).

From the ALOM command shell:

- To specify a value (or values) for this variable, use the setupsc command.
- To view the current value, use the showsc command.
- To change the value(s), use the setsc command.

Using the scadm utility:

- To view the current value for this variable, use the show command.
- To change the value, use the set command.

About ALOM configuration variables

Managed system interface variables

showsc

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 value for this variable, use the <u>showsc</u> command.

Using the `scadm` utility:

- To view the current value for this variable, use the <u>show</u> command.

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[Managed system interface variables](#)

<u>showsc</u>

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 peforming the recovery action continuously.

The default value for this variable is 3.

From the ALOM command shell:

- To specify a value (or values) for this variable, use the setupsc command.
- To view the current value, use the showsc command.
- To change the value(s), use the setsc command.

Using the scadm utility:

- To view the current value for this variable, use the show command.
- To change the value, use the set command.

About ALOM configuration variables

Managed system interface variables

showsc

sys_wdttimeout

Use the sys_wdttimeout variable to set the ALOM watchdog timeout.

The default value is 60 seconds.

From the ALOM command shell:

- To specify a value (or values) for this variable, use the setupsc command.
- To view the current value, use the showsc command.
- To change the value(s), use the setsc command.

Using the scadm utility:

- To view the current value for this variable, use the show command.
- To change the value, use the set command.

About ALOM configuration variables

Managed system interface variables

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Understanding the ALOM watchdog timer

sys_xirtimeout

Note: This variable works only when the <u>sys_autorestart</u> variable is set to xir.

This variable allows 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 <u>reset</u> instead. If you specify a timeout of zero seconds, the XIR never times out after a watchdog XIR event. If you specify a value that has more than five digits in it, the timeout will be set to 0.

If you want to specify a value other than zero seconds, choose a timeout value of 900 to10,800 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.

You can specify a value for this variable while running the <u>setupsc</u> 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]?
```

From the ALOM command shell:

- To specify a value (or values) for this variable, use the <u>setupsc</u> command.
- To view the current value, use the <u>showsc</u> command.
- To change the value(s), use the <u>setsc</u> command.

Using the scadm utility:

- To view the current value for this variable, use the <u>show</u> command.
- To change the value, use the <u>set</u> command.

<u>About ALOM configuration variables</u>

sys_xirtimeout

[Managed system interface variables](#)

[showsc](#)

About the `scadm` Utility

The System Controller Administration (`scadm`) utility, which is part of the Solaris operating environment, allows 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 [configuration variables](#).

You must be logged in to the host as root 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 customize ALOM from the host system.

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 environment.

[Getting started with the `scadm` utility](#)

[`scadm` commands](#)

[`scadm` error messages](#)

[Setting your path to the `scadm` utility](#)

Getting Started With the `scadm` Utility

To use the `scadm` utility, perform these steps:

1. [Set your path to the `scadm` utility.](#)
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.

Note: The `scadm` utility does not work when you are running SunVTS™ software on the server.

[`scadm` commands](#)

[`scadm` error messages](#)

Setting 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.
2. Set the path to scadm on your system.

Refer to your Solaris operating environment 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 environment, 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.

How to Find Out Your System's Platform Name

At the system prompt, type **uname -i**.

The system returns a result similar to the following:

```
% uname -i
SUNW,Sun-Fire-V440
```

The result in this example shows the platform name for the Sun Fire V440 server. The result you see depends on your server model. This example means that the default directory for the ALOM software on the Sun Fire V440 is:

/usr/platform/SUNW,Sun-Fire-V440/sbin

[Getting started with the scadm utility](#)

scadm Commands

The scadm commands provide equivalent functionality to that of the ALOM commands.

How 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-name*/sbin directory, where *platform-name* is the platform name for your host 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*

scadm Commands

The following list describes the commands for the scadm utility.

Command	Description
help	Displays a list of scadm commands and brief descriptions and syntax for each command.
date	Displays the date and time.
shownetwork	Displays the current network configuration information.
show	Displays the current value of the specified ALOM configuration variable.
loghistory	Displays the events logged in the ALOM event buffer.
resetrsc [-s]	Resets ALOM immediately. The -s option specifies a soft reset.
set	Sets the specified ALOM configuration variable to the assigned value.

download	Downloads main or bootmon firmware to the ALOM flash PROM.
modem_setup	Communicates with the modem on supported platforms.
send_event [-c]	Sends a custom message as an event. The -c option assigns a critical level to the event.
version [-v]	Displays ALOM version information. The -v option provides verbose output.
useradd	Adds an ALOM user account.
userdel	Deletes an ALOM user account.
usershow	Shows the information for an ALOM user account.
userpassword	Sets or changes a user's password.
userperm	Sets or changes a user's permissions.

Getting started with the scadm utility

scadm error messages

Setting your path to the scadm utility

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 UTC (Coordinated Universal Time). ALOM does not accept time zone conversions or daylight time changes.

How to Use the `scadm date` Command

Log in to the host server as root.

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 shows the date and time in the following format: `ddmmHHMMccyy.SS` as described below.

Value	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)

[scadm commands](#)

[scadm error messages](#)

scadm download

Use the `scadm download` command to program the ALOM firmware. This command works like the ALOM shell command [flashupdate](#).

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: The download process can take several minutes to complete. 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.

How to Use the `scadm download` Command

Log in to the host server as root.

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.

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 ALOM main firmware:

scadm download/usr/platform/*platform-name***/lib/**
images/alommainfw

where *platform-name* is the <u>platform name for your host server</u>.

To download the bootmon image:

scadm download boot /usr/platform/*platform-name***/lib/**
images/alombootfw

where *platform-name* is the <u>platform name for your host server</u>.

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.

<u>scadm commands</u>

<u>scadm error messages</u>

`scadm help`

Use the `scadm help` command to list the available commands for the `scadm` utility and to show their syntax.

How to Use the `scadm help` Command

Log in to the host server as root.

At the system's superuser prompt, type the following command:

scadm help

For example:

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, userperm, 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)


#
```

[scadm commands](#)

[scadm error messages](#)

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 <u>reset</u>, <u>poweroff</u>, and <u>poweron</u> in the ALOM command shell. This command is similar to the ALOM shell command <u>showlogs</u>.

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.

How to Use the scadm loghistory Command

Log in to the host server as root.

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: Time stamps recorded in console logs reflect server time. Time stamps shown in the ALOM event log reflect UTC (Coordinated Universal Time).

<u>scadm commands</u>

<u>scadm error messages</u>

scadm modem_setup

The scadm modem_setup command is not supported on the Netra 240, Netra 440, Sun Fire V210, Sun Fire V240, Sun Fire V250, or Sun Fire V440 servers. For information about how to set up an external modem to support incoming transactions, refer to the online help for the if_modem variable.

---

scadm commands

scadm error messages

scadm resetrsc

Use the scadm resetrsc command to reset ALOM. This command works like the ALOM shell command [resetsc](#).

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.

How to Use the scadm resetrsc Command

Log in to the host server as root.

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.

[scadm commands](#)

scadm resetrsc

[scadm error messages](#)

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 <u>mgt_mailalert</u> configuration variable.
- The server's syslog -- You set up this option using the <u>sys_eventlevel</u> configuration variable.
- All users currently logged in to ALOM -- You configure this option using the <u>sc_clieventlevel</u> configuration variable.

How to Use the `scadm send_event` Command

Log in to the host server as root.

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 level 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"

<u>scadm commands</u>

[scadm error messages](#)

[Sending and receiving alerts](#)

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](#).

How to Use the `scadm set` Command

Log in to the host server as root.

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

Note: The `set` command accepts only 2 parameters: a variable and one value string. If the value string that you wish to pass to `set` contains more than one word, enclose the entire value string in quotation marks. For example:

scadm set mgt_mailalert "dgd@central 3"

[scadm commands](#)

[scadm error messages](#)

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 <u>showsc</u>.

How to Use the `scadm show` Command

Log in to the host server as root.

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

123.123.123.123

Typing **scadm show** with no variables specified displays the values for all variables. For example:

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"
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"
```

[scadm commands](#)

[scadm error messages](#)

scadm shownetwork

Use the `scadm shownetwork` command to display the current network configuration. This commandworks like the ALOM shell command [shownetwork](#).

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.

How 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.

Log in to the host server as root.

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
```

[scadm commands](#)

[scadm error messages](#)

scadm useradd

Use the `scadm useradd` command to add a user account to ALOM. This command works like the ALOM shell command <u>useradd</u>.

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

How to Use the `scadm useradd` Command

Log in to the host server as root.

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 <u>scadm userpassword</u> command.

To set permission levels for a user name, use the <u>scadm userperm</u> command.

<u>scadm commands</u>

<u>scadm error messages</u>

scadm userdel

Use the `scadm userdel` command to delete a user account from ALOM. This command works like the ALOM shell command [userdel](#).

Note: You cannot delete the default `admin` account from ALOM.

How to Use the `scadm userdel` Command

Log in to the host server as root.

At the superuser prompt, type the following command:

scadm userdel *username*

where *username* is the name of the user you want to delete.

[scadm commands](#)

[scadm error messages](#)

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. To see this information for a particular user, type the desired user name after the `scadm usershow` command. This command works like the ALOM shell command usershow.

How to Use the `scadm usershow` Command

Log in to the host server as root.

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 enter 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

scadm usershow wwilson

Username	Permissions	Password?
wwilson	cuar	Assigned

[scadm commands](#)

[scadm error messages](#)

scadm userpassword

Use the `scadm userpassword` command to set or change the password for the specified user account. This command works like the ALOM shell command <u>userpassword</u>.

How to Use the `scadm userpassword` Command

Log in to the host server as root.

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 must contain at least six characters. Only the first eight are significant, so passwords longer than eight characters are treated as though they only had eight characters.
- They must contain at least two alphabetic characters (uppercase or lowercase letters) and at least one numeric or special character. Alphabetic characters can be both uppercase and lowercase.
- They must differ from the user's login name and any reverse or circular shift of that 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.

[scadm commands](#)

[scadm error messages](#)

scadm userperm

Use the `scadm userperm` command to set or change permission levels for a specified user account. This command works like the ALOM shell command <u>userperm</u>.

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 to change settings. There are four permission levels that increase a user's authorization. You can specify zero through four permission levels.

Permission Level	Description
a	Administrative. This user is authorized to change the state of <u>ALOM configuration variables</u>.
u	User administration. This user is authorized to <u>add users</u> and <u>delete users</u>, change user permissions, and change the authorization level of other users.
c	<u>Console</u> permission. This user is authorized to connect to the host server system console.
r	Reset/power permission. This user is authorized to <u>reset</u> the host server, power the server <u>on</u> and <u>off</u>, and <u>reboot ALOM</u>.

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 <u>scadm usershow</u> command.

How to Use the `scadm userperm` Command

Log in to the host server as root.

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 command:

`scadm userperm msmith cr`

[scadm commands](#)

[scadm error messages](#)

scadm version

Use the `scadm version` command to display ALOM version information.

How to Use the `scadm version` Command

Log in to the host server as root.

At the superuser prompt, type the following command:

scadm version *option*

where *option* is –v, if desired.

For example:

scadm version

```
Advanced Lights Out Manager v1.4
SC Firmware version: 1.4.0
SC Bootmon version: 1.4.0
```

For example (in verbose mode):

scadm version -v

```
Advanced Lights Out Manager v1.4
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 Option

This command uses one option: -v.

The -v option provides additional (verbose) information about your ALOM version.

---

scadm commands

scadm error messages

Using OpenBoot PROM Features

Some features in the OpenBoot™ PROM support ALOM. To use these features, type the command at the `ok` prompt.

The supported commands are:

- [.sc](#)
- [reset-sc](#)

How to Switch Between the ALOM Command Shell and the OpenBoot PROM Prompt

If the Solaris operating environment 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 <u>sc_escapechars</u> variable.

To return to the Solaris operating environment from the ok prompt, type the following command:

ok **go**

---

reset-sc

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**

[Using OpenBoot PROM features](#)

.SC

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:

```
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
```

Using OpenBoot PROM features

Understanding the ALOM Watchdog Timer

ALOM features a watchdog mechanism to detect and respond to a system hang, should one ever occur.

Note: The ALOM watchdog feature is not supported on all platforms. For more information about whether your host system is supported, refer to the Release Notes for your version of the ALOM software.

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 that has been 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 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 that you specify in the sys_autorestart variable. You can change the timeout period through the sys_wdttimeout variable.

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.

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 that you have specified. You use the sys_boottimeout variable to specify the amount of time that the ALOM watchdog will wait for the host to boot. You specify the action it will take if it doesn't boot in that time through the sys_bootrestart variable. 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. If the system goes through the number of reboots set through the sys_maxbootfail variable, then ALOM will perform an action that you specify through the

`sys_bootfailrecovery` variable.

[Managed system interface variables](#)

[Sample ALOM watchdog program](#)

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](#)
- [ntwdt-boottimeout](#)
- [ntwdt-bootrestart](#)
- [ntwdt-xirtimeout](#)
- [ntwdt-maxbootfail](#)
- [ntwdt-bootfailrecovery](#)

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[Sample program](#)

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 automatically defaults to `xir`.

---

ntwdt-boottimeout

When the host system begins to boot up the Solaris operating system, the `ntwdt-boottimeout` 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.

[User APIs](#)

[Data structures](#)

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.

Iif you enter any value other than those listed above, the software automatically defaults to `xir`.

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 peforming 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 host 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 powercycle.

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
- LOMIOCDOGCTL
- LOMIOCDOGPAT
- LOMIOCDOGSTATE

Understanding the ALOM watchdog timer

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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.

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 following line from the `ntwdt.conf` file or change the value on that line from 1 to 10:

```
ntwdt-time-unit=10;
```

[Data structures](#)

[Sample program](#)

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. 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.

Data structures

Sample program

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, the values of which must be less than the value of the watchdog timeout.

[Data structures](#)

[Sample program](#)

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. 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](#)

[Sample program](#)

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.

```
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.

```
typedef struct {

    int reset_enable; /* reset enabled iff non-zero */

    int dog_enable; /* watchdog enabled iff non-zero */

} lom_dogctl_t;
```

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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 nonexistent control command was requested, or if invalid parametes 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.

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Sample ALOM Watchdog Program

Following is a sample program for the ALOM watchdog program.

```
#include "lom_io.h"
main()
{ uint_t timeout = 30; /* 30 seconds */
lom_dogctl_t dogctl;
int fd = open("/dev/ntwdt", 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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Troubleshooting

Go to these sections for troubleshooting information:

- [Troubleshooting ALOM Problems](#) -- Listing of the most common issues you might experience when using ALOM
- [Using ALOM to Troubleshoot Server Problems](#) -- Suggestions for using ALOM to troubleshoot common server issues
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Troubleshooting ALOM Problems

Problem	Description
Can't log in to ALOM	Perform the following actions to troubleshoot ALOM login problems: • Check the ALOM device name you are connecting to (for example, `bert-sc`). Make sure that you have the correct ALOM name for the corresponding host server. • Check that you are using your correct ALOM user name. 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 `telnet` command	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 `telnet` command will receive a `connection closed` error. The following example shows system messages for the UNIX operating environment:
	
	`% `**`telnet bert-sc`**
	`Trying 129.148.49.120...`
	`Connected to bert-sc.`
	`Escape character is '^]'.`
	`Connection closed by foreign host.`

Can't connect to ALOM through the Ethernet connection	First, log in to the server as root and check whether the [scadm version](#) command succeeds. If it does, ALOM is working and there is an Ethernet configuration problem. Use the [scadm show](#) command to check whether Ethernet configuration variables are set correctly. You can also perform the following actions to troubleshoot Ethernet problems: • Log in to ALOM through the serial management port (SERIAL MGT) and use the [shownetwork](#) command to see the current settings. • Log in to another machine on the network and use the `ping` command to see whether ALOM is operating. Be sure to use the ALOM device's name (for instance, `servername-sc`), not the host server's name, as the argument to the `ping` 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 `scadm version` to check ALOM status.
No alerts received from ALOM	Check the setting of the `sys_eventlevel` variable for syslog, the `sc_clieventlevel` variable for the ALOM command shell, and the `mgt_mailalert` variable for email alerts to make sure that you are receiving the proper levels of events in the specified places. Make sure that `if_emailalerts` is set to `true`, and that `mgt_mailhost` is set correctly for email alerts.
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 `scadm userpassword` command to assign new passwords. Inform ALOM users of the new passwords.
You can perform some ALOM functions, but not others	Specific user permissions are required to perform certain functions. Check your permission level. In addition, the following problems might exist: • Cannot see system console logs or access the system console using ALOM. • Cannot put the server in to debug mode or use the ALOM `break` command. The server keyswitch is in the Locked position. • The `poweroff` command has no effect. The server is already powered off. • The `poweron` command has no effect. The server is already powered on, or the keyswitch 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.
- Check console logs for recent error messages.
- Try connecting to the system console to reboot the system.

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 system 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.

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.

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](#)
- [General errors](#)
- [FRU errors](#)

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.

Error Message	Command/Description
`Error: Invalid command option. Type help to list commands.`	[Help](#)
`Error: Invalid command options` `Usage:` *usage string*	You typed the shell command correctly, but used an incorrect option for that command. *usage string* 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 [setsc](#) or [showsc](#) command. Check the configuration variables and their values in your [configuration table](#) and retype the command.

`Error: Invalid image. Please check file integrity and specified path.`	An error occurred when you tried to execute the [flashupdate](#) 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.
`Error: Invalid setting for parameter` *param*`.`	You specified an incorrect value for the configuration variable specified in *param*. Check the [configuration variable](#) you want to use and retype the command.
`Error: Unable to program flash device when system is locked.`	Your host server's keyswitch is in the Locked position. Refer to the server's documentation and set the keyswitch to the Normal (unlocked) position, then execute the [flashupdate](#) command again.
`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.

Error Message	Command/Description
`Error adding user <username>`	An error occurred during execution of the <u>useradd</u> command. This message is followed by a more detailed message that explains the nature of the error.
`Error: Cannot delete admin user`	You tried to delete the `admin` user account from ALOM. ALOM does not allow you to delete this account.
`Error changing password for <username>`	An error occurred during execution of the <u>userpassword</u> command. This message is followed by a more detailed message that explains the nature of the error.
`Error: Inconsistent passwords entered.`	During execution of the <u>userpassword</u> command, you typed the password differently the second time than you did the first time you were prompted. Execute the command again.
`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 <u>password restrictions</u> and then enter the password again.
`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 <u>usershow</u> command.
`Error displaying user <username>`	An error occurred during execution of the <u>usershow</u> command. This message is followed by a more detailed message that explains the nature of the error.
`Error: Invalid IP address for gateway address <netsc_ipgateway> and IP netmask <netsc_ipnetmask>.`	You entered a value for the <u>netsc_ipaddr</u> variable that does not work with the values you specified for the <u>netsc_ipgateway</u> and <u>netsc_ipnetmask</u> variables. Check that the addresses are correct, and then run <u>setupsc</u> or <u>setsc</u> again.

`Error: Invalid IP netmask for IP address <netsc_ipaddr> and IP gateway <netsc_ipgateway>.`	You entered a value for the `netsc_ipnetmask` variable that does not work with the values you specified for the `netsc_ipgateway` and `netsc_ipaddr` variables. Check that the addresses are correct, and then run `setupsc` or `setsc` again.
`Error: Invalid IP gateway for IP address <netsc_ipaddr> and IP netmask <netsc_ipnetmask>.`	You entered a value for the `netsc_ipgateway` variable that does not work with the values you specified for the `netsc_ipnetmask` and `netsc_ipaddr` variables. Check that the addresses are correct, and then run `setupsc` or `setsc` again.
`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.
`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 user name. Review the proper syntax for user names and try again.
`Error: Unable to execute break as system is locked.`	The front panel keyswitch on the host server is in the Locked position. Change the position of the keyswitch and retype the `break` command.
`Failed to allocate buffer for console mode`	During execution of the `console` command, ALOM could not allocate enough memory to connect to the system console.
`Failed to get password for <username>`	During execution of the `userpassword` command, a SEEPROM error occurred. Try executing the command again.

`Failed to set <variable> to <value>`	During execution of the setsc command, ALOM encountered a SEEPROM error. Try executing the command again.
`Invalid login`	Login attempt failed. This message appears at the login prompt. Make sure that you have the correct login name and password, and try logging in again.
`Invalid password`	You entered an invalid password with the userpassword command. Make sure that you have the correct password and try entering the password again.
`Invalid permission: <permission>`	You entered an invalid user permission. Make sure that you have the correct user permission information and try entering the permission again.
`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.
`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.
`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).

Error Message	Command/Description
`Error: xxx is currently powered off.`	*xxx* 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: xxx is currently powered on.`	*xxx* is the name of the FRU to which you tried to send a poweron command. The FRU is already powered on.

`Error: xxx is currently prepared for removal.`	*xxx* is the name of the FRU to which you tried to send a [removefru] command. The FRU is already powered off and ready for removal.
`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.

[ALOM shell commands]

scadm Error Messages

The following table lists common scadm error messages and their causes. These messages appear in alphabetical order.

Error Message	Description
Passwords didn't match, try again	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 userpassword command again.
scadm: all user slots are full	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.
scadm: command line too long	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.
scadm: command unknown	The command you used is invalid for scadm. If the command is a valid ALOM command but does not exist as an scadm command, you must execute the command from ALOM.
scadm: could not read date from SC	An undefined error in the ALOM firmware occurred while scadm tried to obtain the current date and time from ALOM. Execute the command again, or run the command from ALOM.
scadm: could not send alert	While executing the send_event command, ALOM firmware could not log an event or send an alert message.

`scadm: could not set date on SC`	An undefined error in the ALOM firmware occurred while `scadm` tried to set the current date and time in ALOM. Execute the command again, or run the command from ALOM.
`scadm: couldn't add user`	`scadm` encountered an internal error while trying to add a user account. This may be due to a faulty SEEPROM.
`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.
`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.
`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.
`scadm: download failed, SC reported erase error`	ALOM reported a hardware problem while executing the `download` command. There may be a problem with the SEEPROM.
`scadm: download failed, SC reported int_wp error`	ALOM reported a hardware problem while executing the `download` command. There may be a problem with the SEEPROM.
`scadm: download failed, SC reported range error`	ALOM reported a hardware problem while executing the `download` command. There may be a problem with the SEEPROM.
`scadm: download failed, SC reported verify error`	ALOM reported a hardware problem while executing the `download` command. There may be a problem with the SEEPROM.
`scadm: download failed, SC reported vpp error`	ALOM reported a hardware problem while executing the `download` command. There may be a problem with the SEEPROM.

`scadm: download failed, SC reported wp error`	ALOM reported a hardware problem while executing the <u>download</u> command. There may be a problem with the SEEPROM.
`scadm: download rejected, keyswitch in secure mode?`	You cannot execute the <u>download</u> command while the server keyswitch is in the Locked position. Check the keyswitch position and execute the command again.
`scadm: Error downloading file`	An internal error occurred during execution of the <u>download</u> command. Run the command again.
`scadm: ERROR, callback init failed`	An internal error occurred during execution of the <u>download</u> command. Run the command again.
`scadm: Error, Invalid setting for parameter param.`	You specified an incorrect value for the configuration variable specified in *param*. Check the <u>configuration variable</u> you want to use and retype the command.
`scadm: Error, invalid configuration parameter.`	You specified a nonexistent configuration variable when using the <u>setsc</u> or <u>showsc</u> command. Check the configuration variables and their values in your <u>configuration table</u> and retype the command.
`scadm: ERROR, passwords didn't match`	When you execute the <u>userpassword</u> command, you need to enter the password twice. If the two passwords you enter do not match, this error appears. Execute the command again.
`scadm: ERROR, unable to set up message queue`	An internal error occurred during execution of the <u>download</u> command. Run the command again.
`scadm: event message can't exceed 80 characters`	The message you enter for the <u>send_event</u> command must contain fewer than 80 characters.

`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.
`scadm: file not a valid s-record`	An error occurred during execution of the [download] command; the file you specified for downloading is not a valid `s-`record file. Check the file name and run the command again.
`scadm: INTERNAL ERROR in set date`	An internal error occurred during execution of the [date] command. Run the command again.
`scadm: INTERNAL ERROR, overflow in callback`	An internal error occurred during execution of the [download] command. Run the command again.
`scadm: invalid variable`	You entered an invalid variable while executing the [set] command. Check the list of configuration variables and execute the command again.
`scadm: invalid variable or value`	You entered an invalid variable or value while executing the [set] command. Check the list of configuration variables and execute the command again.
`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 [download] command. Run the command again.

scadm: SC failed to respond during download	During execution of the [download](#) command, ALOM did not enter boot mode correctly.
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 [download](#) command, ALOM returned an undocumented error. Run the command again.
scadm: ALOM returned garbage	This error can occur in various situations. Run the command again.
scadm: ALOM returned unknown error	During execution of the [download](#) command, ALOM returned undocumented status (neither success nor failure). Run the command again.
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.
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 [resetrsc](#) command, an attempt to hard reset ALOM failed.
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 <u>useradd</u> command and try running it again.
`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]	[[mmdd]HHMM	mmddHHMM[yyyy]][.SS]`	You entered an incorrect value for `scadm date`. Refer to the <u>date</u> command for proper syntax and run the `scadm date` command again.
`USAGE: scadm download [boot] <file>`	You entered an incorrect value for `scadm download`. Refer to the <u>download</u> command for proper syntax and run the `scadm download` command again.
`USAGE: scadm loghistory`	You entered an incorrect value for `scadm loghistory`. Refer to the <u>loghistory</u> command for proper syntax and run the `scadm loghistory` command again.
`USAGE: scadm resetrsc [-s]`	You entered an incorrect value for `scadm resetrsc`. Refer to the <u>resetrsc</u> command for proper syntax and run the `scadm resetrsc` command again.
`USAGE: scadm set<variable> <value>`	You entered an incorrect value for `scadm set`. Refer to the <u>set</u> command for proper syntax and run the `scadm set` command again.
`USAGE: scadm show [variable]`	You entered an incorrect value for `scadm show`. Refer to the <u>show</u> command for proper syntax and run the `scadm show` command again.

scadm Error Messages

USAGE: scadm shownetwork	You entered an incorrect value for scadm shownetwork. Refer to the shownetwork command 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.
USAGE: scadm userdel <username>	You entered an incorrect value for scadm userdel. Refer to the userdel command for proper syntax and run the scadm userdel command again.
USAGE: scadm userpassword <username>	You entered an incorrect value for scadm userpassword. Refer to the userpassword command 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 the userperm command for proper syntax and run the scadm userperm command again.
USAGE: scadm usershow [username]	You entered an incorrect value for scadm usershow. Refer to the usershow command for proper syntax and run the scadm usershow command again.