Sun™ Control Station 2.2 Administrator Manual

Sun Microsystems, Inc.
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CHAPTER 1

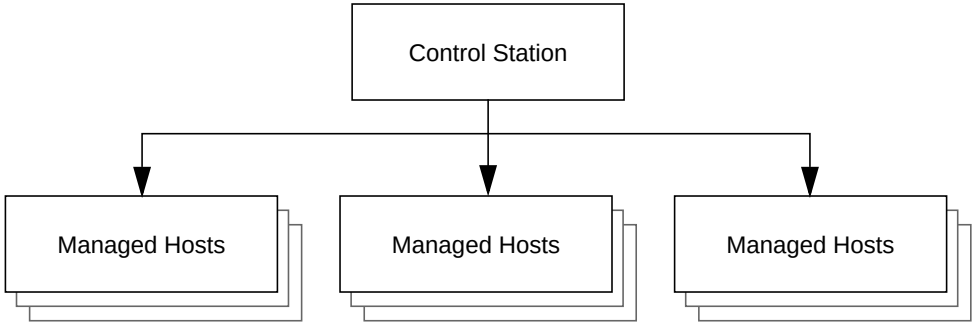
Introduction

This chapter introduces you to the main features of the Sun Control Station product, and discusses its capabilities. This chapter also describes hardware and software requirements, and highlights changes specific to the 2.2 version. Finally, this chapter explains basic features including the Task Progress Dialog, the Scheduler, the Administrator password, and online documentation.

About Sun Control Station Software

Sun Control Station is a modular software product that enables you to provision, monitor, and maintain dozens of server systems.

You first install Sun Control Station base software on a dedicated server, called the *Control Station*. Then, using the easily intuitable graphical interface, you add server systems, called *managed hosts*, into the management sphere of the Sun Control Station software.



Various modules included with Sun Control Station software provide different functions, and it is even possible for you to create your own modules. The default installation of Sun Control Station 2.2 comes preconfigured with the modules listed in the next table. Separate documents for each module provide in-depth information.

Module Name	Description
AllStart	Initializes systems with an OS and associated files
Health Monitor	Provides email notification and at-a-glance synopses of the status of managed hosts
Inventory	Lists detailed information about the hardware and software systems being managed
Lights Out Management	Provides environmental status information, and lets you remotely turn power on and off
Software Installer	Centralizes deployment of patches, packages, and programs

For each managed host, monitoring functions provided by the Lights Out Management (LOM) and Health Monitor modules enable you to inspect the latest sensor and other environmental data, to remotely turn system power on and off, to see at a glance whether systems and subsystems are functioning properly, and to drill down and inspect system event logs and other data.

Perhaps most importantly, you can set threshold criteria for CPU, disk, and memory usage, and have Sun Control Station notify you by email if any of the thresholds are exceeded.

Beyond its monitoring functions, Sun Control Station software provides for *initial software provisioning* of a system. That is, you can use Sun Control Station to automate the initial installation of a supported operating system, along with its associated software packages. The AllStart module provides the initial provisioning function, which utilizes the Red Hat Kickstart and the Solaris JumpStart™ features, as well as the SuSE AutoYaST feature. This enables you to perform unattended software installations.

You can use Sun Control Station software to initially provision a system even if you do not intend to add it as a managed host and track it using Sun Control Station afterwards.

Finally, the Sun Control Station Software Installer module makes it possible for you to organize patches, packages, and programs for a wide range of supported operating systems, and to deploy these incremental software updates to any or all of your managed hosts.

Sun Control Station software is intended for medium-sized installations consisting of dozens of managed hosts. It is not intended to support hundreds of managed hosts. However, since you can monitor and manage a single host from multiple dedicated Control Stations, it is possible to deploy Sun Control Station in networks of considerable size.

Services on the Sun Control Station

Here is a sample of what you can do with the Sun Control Station:

- **Inventory management.** You can obtain detailed information on the hardware components installed in a managed host.
- **Software updates.** You can keep systems current using the Software Installation module, which enables you to deploy software patches, updates, custom software, or data.
- **OS installation.** The AllStart control module integrates both Kickstart (a Red Hat feature) and AutoYaST (a SuSE feature) technologies to provide a quick and unified method of installing and customizing Linux-based systems. The control module provides a common user interface for creating software payloads, defining client profiles, and monitoring and validating system installations and updates.
- **Health monitoring.** This module provides system alerts and basic operation metrics, allowing you to pinpoint potential causes of failure.
- **Lights out management (LOM).** The LOM control module allows you to perform certain management functions remotely on hosts that are compliant with the Intelligent Platform Management Interface (IPMI) version 1.5, such as powering on or off a host, and viewing current system event log (SEL) information from a a host.

These services can be used within an extranet or an intranet environment, or across the Internet.

Software Requirements

The core Sun Control Station software and its different modules can be run on different platforms and support different operating environments. This section details the support provided by the various parts of Sun Control Station software.

Control Station Server	
Redhat	EL 2.1 ES/AS on x86 EL 3 AS on x86 and x86_64 EL 3 ES on x86 8.0 on x86
Fedora	Fedora Core 1 on x86
SuSE	SuSE linux 9.0 on x86 and x86_64
Client Core, including the Health Monitoring and Inventory modules	
Solaris	Solaris 9 on sparc and x86
Redhat	7.3, 8.0, 9 on x86 EL 2.1 WS/AS/ES on x86 EL 3 WS/AS on x86 and x86_64 EL 3 ES on x86
Fedora	Fedora Core 1 on x86 and x86_64
SuSE	SuSE linux 9.0 on x86 and x86_64
JDS	Java Desktop System Release 1/2 on x86
Software Installer module	
Redhat	7.3, 8.0, 9 on x86 EL 2.1 WS/AS/ES on x86 EL 3 WS/AS on x86 and x86_64 EL 3 ES on x86
Fedora	Fedora Core 1 on x86 and x86_64
SuSE	SuSE linux 9.0 on x86 and x86_64
JDS	Java Desktop System Release 1/2 on x86

AllStart module	
Solaris	Solaris 9 on x86
Redhat	7.3, 8.0, 9 on x86 EL 2.1 WS/AS/ES on x86 EL 3 WS/AS on x86 and x86_64 EL 3 ES on x86
Fedora	Fedora Core 1/2 on x86 and x86_64
SuSE	SuSE linux professional 8.2 on x86 SuSE linux professional 9.0, 9.1 on x86 and x86_64
JDS	Java Desktop System Release 2 on x86
LOM module	
Redhat	7.3, 8.0, 9 on x86 EL 2.1 WS/AS/ES on x86 EL 3 WS/AS on x86 and x86_64 EL 3 ES on x86
SuSE	SuSE linux 9.0 on x86 and x86_64
Fedora	Fedora Core 1 on x86 and x86_64

Other Requirements

To ensure proper functioning of the core Sun Control Station 2.2 software, you must install the following software components on the dedicated control server.

- Apache `httpd` 1.3.x or 2.0.x
- perl 5.6 or later including CGI, DBD-Pg, DBI, and Digest components
- PostgreSQL 7.2.x or later including `postgresql`, `postgresql-libs`, and `postgresql-server` components

The following additional requirements are imposed on the dedicated control server to ensure proper functioning of the AllStart module.

- `dhcpd` must be enabled
- `tftpd` must be enabled
- `nfsd` must be enabled
- 200 MB of free space must exist in `/usr`
- 100 MB of free space must exist in `/var`

Hardware Requirements

Recommended Server Configuration

Sun recommends the following server configuration for running the Sun Control Station 2.2 software.

- a 1 GHz or higher x86 processor
- 1 GB of RAM
- two 80GB hard disk drives in a RAID-1 (mirroring) setup
- at least 1 GB of free disk space in the root directory (`/`)
- at least 1 GB of free disk space in the directory `/var`

If you want to create custom partitions on your hard disk drive, create the directories `/scs` and `/var/tomcat`, and allocate as much space as possible to these two directories.

Minimum Server Configuration

The server running the Sun Control Station 2.2 software should meet the following minimum configuration.

- a 600MHz x86 processor
- 512 MB of RAM
- one 40GB hard disk drive
- at least 1 GB of free disk space in the root directory (`/`)
- at least 250 MB of free disk space in the directory `/var`

Port Usage

A number of ports on the Control Station and on the managed hosts must be free for the Sun Control Station 2.2 software to use. The following table gives the details.

Port	Protocol	Used By	Notes
22	TCP	SSH	• Port must be open on the Control Station for *outgoing* connections. • Port must be open on the managed host for *incoming* connections.
68	UDP	DHCP	• Port must be open on the Control Station for *incoming* connections.
69	UDP	TFTP	• Port must be open on the Control Station for *incoming* connections.
80	TCP	HTTP (Apache)	• Port must be open on the Control Station for *incoming* connections. • Port must be open on the managed host for *outgoing* connections.
623	UDP	IPMI	• Port must be open on the Control Station for *outgoing* connections. • Port must be open on the managed host for *incoming* connections.
5434	TCP	PostgreSQL	• Port must be available on the Control Station.
8027	TCP	tomcat4	• Port must be available on the Control Station. Used for shutting down the browser-based user interface.
8080	TCP	tomcat4	• Port must be open on the Control Station for *incoming* connections. Used for the browser-based user interface.
8443	TCP	HTTPS (tomcat4)	• Port must be open on the Control Station for *incoming* connections. Used for an SSL connection to the user interface.

Web Browsers

To manage the Sun Control Station from the browser-based UI, you must enable cookies, cascading style sheets and JavaScript™ on your browser (these features are normally enabled by default).

Tested Browsers

The Sun Control Station 2.2 software has been tested on the following combinations of Web browsers and platforms.

Linux (Red Hat 7.3, Red Hat Enterprise Linux 2.1 ES)

- Browser: Mozilla™ 1.2.1

Microsoft Windows (NT 4.0)

- Browser: Internet Explorer 6.0

Solaris™ Operating System (8.0 and 9.0)

- Browser: Netscape™ 7.0

Compatible Browsers

The Sun Control Station 2.2 software should function properly on the following browsers:

- All platforms: Netscape 7.0; Mozilla 1.0.1 and higher
- Microsoft Windows 98/NT/2000: Internet Explorer 5.2
- Mac OS X: Internet Explorer 6.0; Safari 1.0 (v85); Camino 0.7; Mozilla 1.3.1

Released product versions of the browsers are usually more reliable than beta versions, and later versions typically work the most reliably. A browser program failure, although annoying, does not adversely affect your data on a sun control station server.

Note – Netscape 4.7x is not supported.

New Features in Version 2.2

This section summarizes the features that are new to version 2.2. It is intended mostly for those familiar with previous versions of the product.

Host Communication

The managed host agent used in Sun Control Station 2.0 and Sun Control Station 2.1 has been replaced with the standard SSH suite. Authentication for allowing the Control Station access to managed hosts is handled by public-key cryptography instead of using a superuser login and password scheme. This provides enhanced stability and security to Control Station installations.

Inventory Module

Version 2.2 of Sun Control Station includes an inventory module that provides detailed information about the software and hardware of the hosts being managed. For more information, see *Sun Control Station 2.2 Inventory Module*.

LOM Module

Version 2.2 of Sun Control Station includes a LOM module that enables you to monitor the status of managed hosts, and to perform some maintenance functions. See *Sun Control Station 2.2 LOM Module* for details.

Software Installer Module

The Software Installer module allows you to install packages, patches, and applications on machines that are already up and running. It does not load operating system software or permit initialization of new managed hosts. For these latter functions, use the AllStart module.

For more information about the Software Installer module, see *Sun Control Station 2.2 Software Installer*.

New AllStart Module Functionality

AllStart is not a new module for 2.2, but this release provides much new functionality, including:

- Support for SuSE and Solaris x86
- Support for RAID
- New 'Client Always Netbooting' feature
- Changes to the GUI

For more information, see *Sun Control Station 2.2 AllStart Module*.

N1 Grid Engine Support

Sun Control Station 2.2 can be used to automate the installation and maintenance of an N1 Grid Engine 6 grid. This functionality is available as as add-on module to Sun Control Station 2.2, available with the purchase of the N1 Grid Engine 6

software. This module, known as GEMM (Grid Engine Management Module), enables automatic installation and uninstallation of N1 Grid Engine software on any managed host, as well as detailed monitoring of N1 Grid Engine status.

Task Progress Dialog

When you launch a task (for example, when creating a backup file for the Sun Control Station or adding a control module), a Task Progress Dialog appears in the UI. This dialog has a Status field indicating the current status of the task and a progress bar. When the progress bar displays 100%, the task has completed (see FIGURE 1-1).

FIGURE 1-1 The Task Progress Dialog

If you want to perform another task in the UI while the current task is underway, you can put the Task Progress Dialog in the background. Simply click the button labelled Run Task In Background below the progress bar.

To return to the Task Progress Dialog, select Administration → Tasks from the left column. The Task table appears. If the task is still underway, a status message is displayed in the Duration column. Click on the *progress bar* icon in this column to redisplay the Task Progress Dialog for this task.

Once the task is complete and the progress bar displays 100%, two buttons appear below the Task Progress Dialog: Done and View Events.

- To view the list of events associated with the task just completed, click View Events. The Events For <Task> table appears. If you then click the *up-arrow* icon in the top right corner, the Tasks table appears.
- To return to the previous screen, click Done.

Selector Window

A number of functions in the Sun Control Station use a selector window. This section describes the selector window.

In the selector window, depending on the control module that you are using, you select the managed hosts upon which to perform various tasks, for example:

- Remove or modify one or more hosts
- Add one or more hosts to a group
- Remove one or more hosts from a group
- View software package information
- Publish, install or download software packages
- Update performance or inventory information for a host

There are two options in the top frame of the selector window:

- **Select All.** This option allows you to select all of the managed hosts in the list for that task.
- **Deselect All.** This option allows you to deselect all of the selected hosts.

To select a host or hosts on which to perform a task, click the checkbox for the items in the list or click Select All at the top. You can also select all hosts within a group by clicking on the checkbox for the group name.

A single selected item is highlighted in blue; if a single host within a group is selected, the group name is highlighted in grey. If all hosts within a group are selected, the group name is highlighted in dark blue.

To deselect a host, uncheck its box or click Deselect All at the top. You can also deselect all the hosts within a group by unchecking the group name box.

Once you have selected the desired hosts, click the button at the bottom for the task that you want to perform.

Using the Scheduler

The Scheduler enables you to schedule a task or tasks to be performed at a later time.

Many Sun Control Station tasks can be scheduled, in which case, a button labelled Schedule appears in the table or selector window of the final step.

The Scheduler works in the same way for any task:

1. **Fill in the necessary fields for the task.**
2. **Click Schedule.**

   The Schedule Settings For *Task* appears; see FIGURE 1-2.

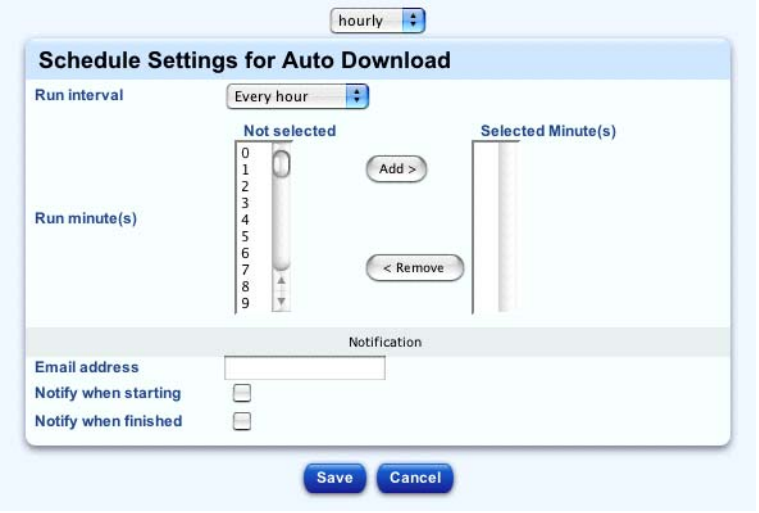


FIGURE 1-2 Scheduler Table

3. **Configure the schedule settings.**

   The following settings are available for any scheduled task:

   - Run Date And Time: Enter the date on which you want the task to run, in the format: `MM/DD/YYYY hh:mm`.

     You can also click the *calendar* icon next to this field. A separate browser window opens. Choose the date and time for the scheduled task. Press Enter (or Return) on your keyboard. The date and time now appear in the field.
   - Email Address (Optional): Enter an email address of the person who will be notified when the task runs.
   - Notify When Starting: Enable the check box to notify the person when the task is starting.
   - Notify When Finished: Enable the check box to notify the person when the task has completed.

4. **For some functions, you can set the frequency of the task by using a pull-down menu above the table (for example, hourly or daily).**

5. **Click Cancel or Save.**

   If you click Cancel, the scheduled task is not saved. The Scheduled Tasks table appears, but without the task you just cancelled.

   If you click Save, the scheduled task is added to the list of scheduled tasks. The Scheduled Tasks table appears with the new task.

6. **In this table, you can view details of, modify or delete a scheduled task.**
   - To view the details of a scheduled task, click the *magnifying glass* icon.
   - To modify a scheduled task, click the *pencil* icon.
   - To delete a scheduled task, click the *delete* icon.

Resetting the Administrator Password

To manually reset the Administrator password for logging into the Sun Control Station UI, perform the following steps.

1. **Use `ssh` to log in to the control station.**

2. **Become the `root` user.**

   ```
   su -
   ```

3. **Generate an encrypted password for the user name `admin` and password `admin`.**

   ```
   /usr/bin/htpasswd -n -s -b admin  admin
   admin:{SHA}0DPiKuNIrrVmD8IUCuw1hQxNqZc=
   ```

4. **Copy the entire string following `admin:{SHA}`.**

   ```
   0DPiKuNIrrVmD8IUCuw1hQxNqZc=
   ```

5. **Paste this string into the password attribute for the user tag in the following file.**

   ```
   /var/tomcat4/webapps/sdui/WEB-INF/database.xml
   ```

6. **Stop and then restart `tomcat`.**

   ```
   dtomcat4 stop
   dtomcat4 start
   ```

   You can now log in to the Control Station UI as the user name `admin` with the password `admin`.

   To change the Administrator password through the UI, see "Passwords" on page 26.

Accessing Online Documentation

To access the PDF file for a user manual:

1. **Click on the *Online Documentation* icon.**

   This icon is located in the top right corner of the UI.

   A separate browser window opens displaying a list of the PDF files that are available.

2. **Click the link for a PDF file.**

   You can open the PDF file in the browser window or save it to your personal computer.

   If you have installed third-party software on the Sun Control Station, the relevant documentation is also available here.

CHAPTER 2

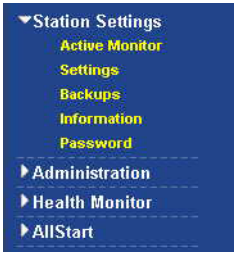
Station Settings

This chapter describes the station settings on the server running the Sun Control Station software. This server is referred to as the Control Station.

The Administrator, with the user name `admin`, has full control of the Control Station. The Administrator can:

- View Active Monitor information
- Perform maintenance functions (backup and restore)
- View the System Information page
- Register the Sun Control Station software
- Change the Administrator password

These functions are accessible through the Station Settings menu, located on the left-hand side of the graphical interface.



For more information, see:

- "Active Monitor" on page 15
- "Settings" on page 19
- "Back Up and Restore" on page 20
- "Information About the Sun Control Station" on page 25
- "Passwords" on page 26

Active Monitor

Active Monitor is a `cron` job that runs on the system every 10 minutes to update the status of the services and system components.

Status Alerts

If one of the services or system components monitored by Active Monitor changes to a yellow or red status, a Status message (“Check Alerts”) appears in the left menu bar with an icon below it.

When you click the icon, the Active Monitor status tables appear.

If an email address for receiving Active Monitor alerts has been entered under Settings, an email is sent to that address; see “Settings” on page 19.

Status Icon Colors

The status of each service or hardware component is indicated by a colored circle and icon—grey with dotted line, green with checkmark, yellow with exclamation mark or red with X mark—beside each item. The colors have the following significance:

Grey with dotted line. No information is available, or the service or the monitoring feature is not enabled on the host.

Green with checkmark. The service or component is functioning normally.

Yellow with exclamation mark. There is moderate use on the host or a component is recovering.

Red with X. There is heavy use on the host or a failure.

Thresholds

The thresholds for the Active Monitoring alarms are as follows:

- **CPU Yellow Alarm.** Enter the threshold at which a yellow alarm is generated. This value represents the average load of the CPU. The default value is 3.
- **CPU Red Alarm.** Enter the threshold at which a red alarm is generated. This value represents the average load of the CPU. The default value is 6.
- **Disk Yellow Alarm.** Enter the threshold at which a yellow alarm is generated. This value represents a percentage of hard-disk-drive usage. The default value is 80.

  For example, a value of 80 means that a yellow alarm is generated when 80% of the capacity of the hard disk drive is used.
- **Disk Red Alarm.** Enter the threshold at which a red alarm is generated. This value represents a percentage of hard disk drive usage. The default value is 90.

  For example, a value of 90 means that a red alarm is generated when 90% of the capacity of the hard disk drive is used.
- **Memory Yellow Alarm.** Enter the threshold at which a yellow alarm is generated. This value represents a percentage of memory usage. The default value is 50.

  For example, a value of 50 means that a yellow alarm is generated when 50% of the memory is in use.
- **Memory Red Alarm.** Enter the threshold at which a red alarm is generated. This value represents a percentage of memory usage. The default value is 75.

  For example, a value of 75 means that a red alarm is generated when 75% of the memory is in use.

Verifying Disk Usage and Removing Alarm Condition

You can log in to the Control Station and verify the disk usage. The Active Monitor `cron` job verifies only the `root`, `/var` and `/home` directories.

To remove the alarm condition from the UI, clean up the files in your partition(s) and then update the Active Monitor information.

1. **Use `ssh` to log in to the Sun Control Station server.**

2. **Become the `root` user.**

   ```
   su root
   ```

3. **Run the following command to check the `root`, `/var` and `/home` partitions.**

   ```
   df / /var /home
   ```

   The information for each partition is displayed:

   - Filesystem
   - 1k-blocks
   - Used
   - Available
   - Use %
   - Mounted on

   If the value for "Use %" is higher than the threshold value, an alarm is generated.

4. **Clean up the files in your partitions.**

5. **In the Control Station UI, select Station Settings → Active Monitor.**

   The Active Monitor status tables appear.

6. **Click Update Now above the tables to begin updating the system and service status information immediately.**

   The status should return to normal (green circle with checkmark).

Viewing Active Monitor Information

To view the Active Monitor information for the server on which the Sun Control Station software is running:

1. **Select Station Settings → Active Monitor.**

   The Active Monitor status tables appear; see FIGURE 2-1.

   - The Base System Components table displays information about the CPU, Disk and Memory.
   - The Base Services table displays information on the various services that are running on that particular server, for example, FTP Server, Telnet Server, Email Server or DNS Server. These items can vary depending on the type of server you are viewing.
   - The Other System Services table displays information about third-party or customized services that the administrator has added to a server.

2. **You can click Update Now above the tables to begin updating system and service status information immediately.**

   This may take as long as several minutes and proceeds in the background.

FIGURE 2-1 Active Monitor Status Tables

Settings

You can configure the settings for an HTTP or FTP proxy server, and the number of days to retain tasks and events. You can also enter an email address that will receive Active Monitor alerts.

Each of these settings is optional.

Configuring the Proxy Server Settings

To configure the proxy server settings:

1. **Select Station Settings → Settings.**

   The Settings table appears; see FIGURE 2-2.

2. **Configure the following settings.**
   - HTTP proxy server: Enter an IP address or fully qualified domain name.
   - FTP proxy server: Enter an IP address or fully qualified domain name.
   - Days to keep tasks and events: The default value is five (5) days.
   - Active Monitor notification email: Enter an email address in the format `xxxx@yyyy.zzz`. The default value is `root@localhost`.

3. **Click Save.**

FIGURE 2-2 Settings Table

Back Up and Restore

The Backup Administration table allows you to back up and restore a Sun Control Station.

Back Up Process

You can perform both scheduled backups and manual backups on the Sun Control Station.

You can back up your Control Station using either Windows File Sharing (SMB) or Network File Sharing (NFS). You can also save the backup file to the local server but this is not recommended. If the hard disk drive fails, you will lose the backup files along with the rest of the server data.

The backup file name uses the following format:

`bk_YYYYMMDD_hhmm.scs`

Where `YYYYMMDD_hhmm` represents the Year Month Day Hour Minute.

For example, the file name `bk_20030426_1745.scs` indicates that the backup was created at 17:45 on April 26, 2003.

Note – For a Scheduled Backup, ensure that the target location is available and has enough disk space to hold the backup archive. Failure to do this may result in zero-length or truncated archives.

Creating a Backup

To create a backup of the data on the Sun Control Station:

1. **Select Station Settings → Backups.**

   The Backup Administration table appears; see FIGURE 2-3.

FIGURE 2-3 Backup Administration Table

2. **Enter a path in the Backup File Path field.**

   The default path is `/scs/backups` on the the local server.

   For best practice, do not back up to the local server; you should back up to a different server.

   You can mount an external file system to which to write the backup file (either a Windows File Sharing [SMB] server or Network File Sharing [NFS] server).

Note – You must have write permissions for this path.

3. **Click Create Backup Now.**

   The Task Progress Dialog appears.

Note – You can also schedule the creation of a backup file. For more information, see "Using the Scheduler" on page 11.

Modifying a Scheduled Backup

To modify the settings for a scheduled backup task:

1. **Select Administration → Schedule.**

   The Schedule Administration table appears.

2. **Click the *pencil* icon next to the backup task that you want to modify.**

   The Scheduled Settings For Create Backup table appears, showing the details about the backup job.

3. **Modify the settings.**

4. **Click Cancel to return without saving the changes or click Save to save the changes.**

   The Scheduled Settings For Create Backup table appears.

Deleting a Scheduled Backup

To delete a scheduled backup task:

1. **Select Administration → Schedule.**

   The Schedule Administration table appears.

2. **Click the *delete* icon next to the backup task that you want to delete.**

   A confirmation dialog verifies the deletion.

3. **Click Remove Schedule.**

   The Schedule Administration table appears, with the scheduled backup task removed.

Restore Process

Note – Ensure that you maintain up-to-date backup files. Any modifications made to the server since creating the backup file from which you are restoring the server will be lost.

When a backup task runs, it creates a new file in the location specified in the Backup File Path field in the Backup Administration table; see "Creating a Backup" on page 21. The file name is the time and date at which the backup was started and has the form: Year Month Day Hour Minute. For example, the file name `bk_20030426_1745.scs` indicates that the backup was run at 17:45 on April 26, 2003.

Restoring the Sun Control Station

To restore your Sun Control Station, you first prepare the backup file for the restore operation. You then log out of the Control Station UI and run a command-line script to restore the data to your server.

Note – You can perform the Prepare Restore step at anytime in advance of running the script.

1. **Select Station Settings → Backups.**

   The Backup Administration table appears.

2. **Click Restore From Backup above the table.**

   The Restore Administration table appears; see FIGURE 2-4.

3. **Click the radio button for the method by which to specify the location of the backup file:**

   - Upload: Click the Browse button to locate the backup file.
   - `/scs/backups`: If you have a backup file in this directory on the Sun Control Station, you can use the pull-down menu to choose the backup file.

4. **To cancel this restore, click Cancel below the table.**

5. **To restore this backup file, click Prepare Restore below the table.**

   The Task Progress Dialog appears. Once completed, a dialog box confirms that the restore script is ready to be run.

Note – At this point, you have not yet begun to restore the data. This occurs when you run the restore script.

6. **Log out of the Control Station UI.**
7. **Use `ssh` to log in to the server.**
8. **Become the `root` user.**

   ```
   su root
   ```

9. **From the directory `/tmp`, run the `restore.sh` script.**

   ```
   /tmp/restore.sh
   ```

   A number of messages display in the terminal window. The final message is "All Done".

10. **Log back in to the Control Station UI and verify that the restore operation was successful.**

FIGURE 2-4 Restore Administration Table

Restoring the Sun Control Station After a Disaster

To restore your Sun Control Station to a known state after a disaster:

1. **Restore the server to a factory-fresh state using the operating system CDs.**
2. **Reinstall the Sun Control Station software on the server.**

   You can now use a backup file to restore the Control Station information to the server.

3. **In the Sun Control Station UI, select Station Settings → Backups.**

   The Backup Administration table appears.

4. **Follow the restore process as described in "Restore Process" on page 23.**

Information About the Sun Control Station

To view information about the Sun Control Station, select Station Settings → Information. The System Information table appears and contains the following information:

- Product name
- Product build number
- Product serial number

Below the System Information table are two buttons: Register Now and Sun Microsystems, Inc. Web Site.

- Click Register Now to register your Sun Control Station software.
- Click Sun Microsystems, Inc. Web Site to go to

  `http://www.sun.com/`

Registering the Sun Control Station Software

To register the Sun Control Station software:

1. **Select Station Settings → Information.**

   The System Information table appears.

2. **Click Register Now below the table.**

   The Registration Information table appears; see FIGURE 2-5.

FIGURE 2-5 Registration Information Table

3. **Fill in the following information.**
   - First name
   - Last name
   - Organization
   - Country
   - Job function
   - Telephone number
   - Email address
4. **Click Send.**

   The System Information table reappears.

Passwords

This section gives guidelines and instructions for changing the Administrator password.

Password Guidelines

Use the following guidelines when choosing a password:

1. Use between 3 and 16 alphanumeric characters. The valid characters include: a-z A-Z 0-9 % ! @ $ ^ & * - _ = \ | . , / ? ; : +
2. Use both uppercase and lowercase letters.

Note – A password is case sensitive.

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3. Do not use a proper name.
4. Do not use a word found in a dictionary.
5. Do not use a date.
6. Do not use a UNIX® command word.
7. Do not use a string of consecutive keys on a keyboard (for example, “qwerty”).

Changing the Administrator Password

To change the password for the Administrator:

1. **Select Station Settings → Password.**

   The Administrator Password table appears; see FIGURE 2-6.

2. **Modify the password.**

   Enter the password twice for confirmation.

   For more information on choosing a password, see “Password Guidelines” on page 26.

3. **Click Change Password.**

   The system saves the configuration, refreshes the screen, and displays the message “Password changed successfully”.

FIGURE 2-6 Administrator Password Table

CHAPTER 3

Administration Functions

This chapter describes Sun Control Station Administration functions, which include:

- Adding or removing managed hosts
- Creating groups of managed hosts
- Viewing tasks and events
- Installing and administering the control modules
- Scheduling a task or tasks to be performed at a certain time

Administration Menu

The functions and services that are available to the Administrator for managing the hosts, modules, and tasks are grouped together under the menu item labeled Administration. These functions are accessible through the Administration menu, located on the left-hand column of the graphical interface.

For more information, see:

- "Hosts" on page 31
- "Modules" on page 42
- "Groups" on page 49
- "Tasks and Events" on page 54
- "Schedule" on page 57

The Sun Control Station ships with preinstalled modules. Functions for these modules also appear in the graphical interface. Each module is explained in detail in its own PDF document, available online through the UI or on the software CD. For more information, see "Accessing Online Documentation" on page 14.

Tasks and Events

Operations performed on the Sun Control Station are called tasks and events.

A *task* is an executed operation that has a determined start and end point, such as adding a host or uploading a control module. A task is invoked by the Administrator.

Invoking a task generates one or more events. An *event* is a notification message providing information on one part of a task. A task can comprise several events. An event is generated by the Control Station or by an agent on a managed host.

You will find that, as a matter of convenience, you can perform a given task from different locations in the Sun Control Station UI. For example, you can create a group of hosts from the Managed Hosts table, as well as from the Administration → Groups menu item on the left. The Schedule option appears on a number of different screens or you can launch it from the Administration → Schedule menu item. As well, you can launch control module tasks from the Managed Hosts table, rather than selecting that particular module from the menu.

Running a Task in the Background

When there is a Task Progress Dialog on the screen (for example, when adding a host or updating the Inventory information), you can put this dialog in the background.

- **Click Run Task In Background below the dialog.**

  You can then move to another task in the UI while this task continues to run.

  To return to the Task Progress Dialog:

- **Select Administration → Tasks.**

  The Task table appears. If the task is still underway, a status message is displayed in the Duration column. Click on the *progress bar* icon in this column to redisplay the Task Progress Dialog for this task.

Schedule Feature

The Schedule feature (also referred to as the Scheduler) allows you to schedule a task or tasks to be performed at a later time.

If a task can be scheduled by the Sun Control Station, a button labelled Schedule appears in the table or selector window.

Some of the tasks that you can schedule include: update information in the Inventory module; install a new control module; and add one or more new hosts, either individually or from a file.

For more information on the Schedule feature, see "Using the Scheduler" on page 11.

Hosts

The Hosts menu item allows you, as the Administrator, to add, remove, or modify information about hosts to be managed by the Sun Control Station.

Viewing the Managed Hosts

To view the hosts that are currently managed by the Control Station:

- **Select Administration → Hosts.**

  The Managed Hosts table appears in the selector window (see FIGURE 3-1).

Adding Hosts

After you install the operating system on a managed host, there are things you have to do before you can use Sun Control Station to manage it. For information, see *Sun Control Station 2.2 Software Installation*.

You can add one or more hosts to the Sun Control Station in three ways:

- Automatically scan a range of IP addresses ("Adding Managed Hosts by Automated Scanning" on page 32)
- Manually add a single host ("Manually Adding a Single Host" on page 34)
- Import a file containing a list of hosts ("Importing a List of Hosts" on page 36)

As a security measure, Sun Control Station 2.2 requires you to confirm the identity of managed hosts before the hosts can be added for management. This prevents potentially private information from being inadvertently revealed due to man-in-the-middle attacks or DNS spoofing. Sun Control Station 2.2 identifies hosts using the hosts' SSH host keys and key fingerprints.

If you use the automated scanning method to add managed hosts, Sun Control Station retrieves the SSH key fingerprints for those hosts automatically. However, if you choose to add hosts manually, you must use the manual method of determining the hosts' fingerprints (see "Determining a Host's SSH Key Fingerprint" on page 34).

Adding Managed Hosts by Automated Scanning

To ease the process of verifying the SSH host keys of hosts to be managed, Sun Control Station can automatically retrieve the published host keys from machines on the network.

1. **Select Administration → Hosts.**

   The Managed Hosts table appears in the selector window.

2. **Click the Add button.**

   The Scanned Hosts table will appear. (If no hosts have been scanned previously, the table will be empty.)

3. **Click the Scan For Hosts button.**

4. **Do one or both of the following.**

   - **Manually enter a list of IP addresses or IP ranges.**

     Separate the addresses and ranges by spaces.

   - **If a text file of IP addresses or IP ranges exists, click the Browse... button, and select the text file.**

     See "About Creating a List of IP Ranges" on page 33 for information about constructing a text file.

5. **Click the Scan For Hosts button.**

   A progress dialog will appear, showing hostnames as hosts are scanned and their SSH host keys retrieved.

6. **When the process is complete, click the Done button.**

   The Scanned Hosts table is redisplayed, showing all hosts scanned, with their IP addresses, hostnames (if available), and the fingerprint for the hosts' SSH host keys. The Status for these hosts will be scanned. If other hosts or ranges have been previously scanned, they will also be displayed. This allows the Scan For Hosts process to be repeated with revised or additional IP ranges, building the list of scanned hosts before proceeding to the next step.

7. **Confirm each displayed SSH host's key fingerprint against a secure source.**

   The key fingerprint can also be obtained directly from the host's console by executing the `ssh-keygen` command:

   ```
   /usr/bin/ssh-keygen -l -f /etc/ssh/ssh_host_rsa_key
   ```

8. **Click the checkbox for each host and click the Manage button.**

   A progress dialog appears and tells you when each host is contacted, when information about the host is retrieved, and when applicable Sun Control Station modules are installed on the host.

9. **When the management process is complete, click the Done button.**

   The Managed Hosts will be displayed, showing all hosts that were successfully imported for management.

About Creating a List of IP Ranges

You can create a file containing a list of IP ranges, and then have Sun Control Station use this list to scan automatically for host fingerprints.

The file you create consists of one or more lines each consisting of a single IP address or a range of IP addresses.

Lines beginning with a pound sign (#) are treated as comments and ignored.

Example File

A sample IP range file might look like this.

```
# a single IP address
10.6.1.1
# 3 IP addresses
10.6.1.1-10.6.1.3
# same as above
10.6.1.1-3
# 100 IP addresses, between 192.168.1.100 and 192.168.1.199
192.168.1.100-199
# 510 IP addresses, between 10.6.1.1 and 10.6.2.255
10.6.1.1-2.255
```

Determining a Host's SSH Key Fingerprint

As a security measure, Sun Control Station 2.2 requires you to provide a host's SSH key fingerprint before adding that host for management. To determine the key fingerprint, follow these steps.

1. **Use `ssh` to log in to the managed host's console.**
2. **Become the `root` user.**

   ```
   su -
   ```

3. **Type the following command.**

   ```
   /usr/bin/ssh-keygen -l -f /etc/ssh/ssh_host_rsa_key
   ```

   This command returns a numerical value composed of 16 pairs of hexadecimal digits, each pair separated by colons (:), as follows:

   ```
   00:11:22:33:44:55:66:77:88:99:aa:bb:cc:dd:ee:ff
   ```

Manually Adding a Single Host

1. **Select Administration → Hosts.**

   The Managed Hosts table appears in the selector window (see FIGURE 3-1).

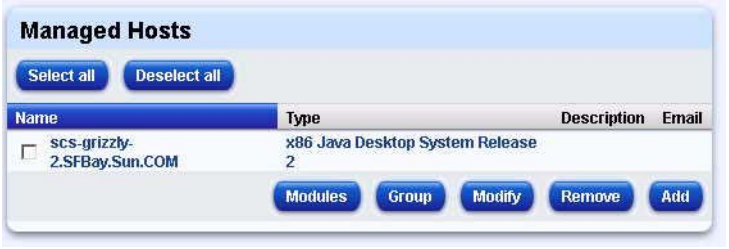

FIGURE 3-1 Managed Hosts Table

2. **Click Add in the bottom right corner of the Managed Hosts table.**

The Add Host table appears; see FIGURE 3-2.

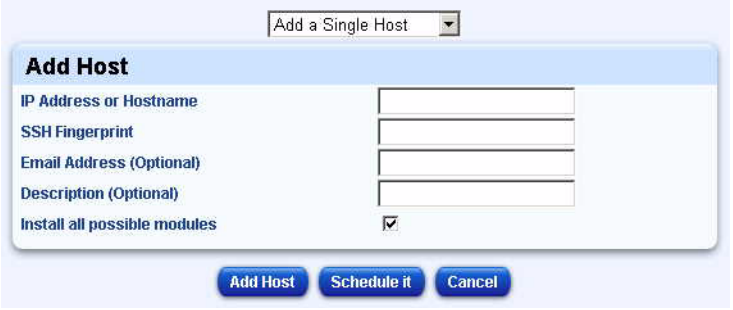

FIGURE 3-2 Add Host Table

3. **Click the Add Direct button.**
4. **Configure the following settings:**
   - IP Address or Host Name: Enter the IP address or the fully qualified domain name of the host.

Note – The host name of the host that you enter must be resolvable by a Domain Name System (DNS) server that your Sun Control Station accesses.

   - SSH Fingerprint: See "Determining a Host's SSH Key Fingerprint" on page 34
   - Email Address (Optional): Enter the email address of the contact person for the host.
   - Description (Optional): Enter a description of the host, for example, "Server in Joe's office".
   - Install All Possible Modules: Enable this check box to have the Control Station install all control modules that this host is eligible to receive.
5. **Click Add Host.**

   The Task Progress Dialog appears.

Note – You can also schedule the addition of the hosts for a later time. For more information, see "Using the Scheduler" on page 11.

Importing a List of Hosts

For more information about creating the list of hosts, see "About Creating a List of Hosts" on page 37.

To add a list of hosts from a file:

1. **Select Administration → Hosts.**

   The Managed Hosts table appears in the selector window.

2. **Click Add in the bottom right corner of the Managed Hosts table.**

   The Add Host table appears; see FIGURE 3-2.

3. **Click the Add Direct button.**

4. **From the pull-down menu above the table, select Add Hosts From A File.**

   The Add Hosts From A File table appears; see FIGURE 3-3.

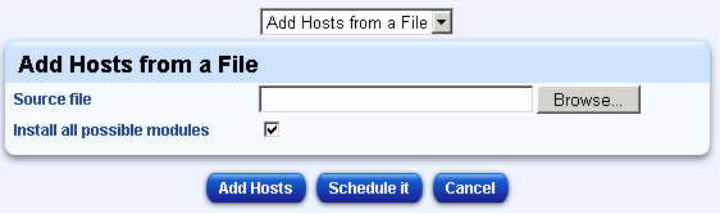

FIGURE 3-3 Add Hosts From A File Table

5. **Click Choose File or Browse to locate the file.**

6. **Enable the check box Install All Possible Modules if you want the Control Station to install all control modules that these hosts are eligible to receive.**

7. **Click Add Hosts.**

   The Task Progress Dialog appears.

Note – You can also schedule the addition of a list of hosts for a later time. For more information, see "Using the Scheduler" on page 11.

About Creating a List of Hosts

You can create a file containing a list of hosts, and then import this file into the Sun Control Station.

The first step in importing a list of hosts is to generate a text file in the required format. The order of the data fields is the following (enter the data on one continuous line):

```
<hostname_or_IP_address>|<ssh_fingerprint>|<email_address>|
<description>
```

The following criteria explain the structure of the file.

1. Include the following data for each host:
   a. Host name or IP address of the host

Note – The host name of the host that you enter must be resolvable by a Domain Name System (DNS) server that your Sun Control Station accesses.
If you have not specified a DNS server, you must import the host by IP address.

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   b. The host's SSH key fingerprint. See "Determining a Host's SSH Key Fingerprint" on page 34.
   c. An email address for notifications (optional)
   d. A description of the host (optional)
2. Use one line for each host in the file.
3. Separate the data fields with the "|" character. Do not insert a space before or after the "|" character. You can use commas or tabs in the data string.
4. Terminate each field with a "|" character, even if you leave the field blank. This does not apply to the final field.
5. Lines beginning with a pound sign (#) are treated as comments and ignored.
6. The Control Station does not verify that an email address is valid.
7. Save the file in plain-text format.

Example File

An example file with five hosts might look like this:

```
10.9.32.100|00:11:22:33:44:55:66:77:88:99:aa:bb:cc:dd:ee:ff||
10.9.32.111|11:22:33:44:55:66:77:88:99:aa:bb:cc:dd:ee:ff:00|joe@asdfg.com
10.9.32.115|22:33:44:55:66:77:88:99:aa:bb:cc:dd:ee:ff:00:11||x86 RH7.3 server
on top shelf
10.9.32.116|33:44:55:66:77:88:99:aa:bb:cc:dd:ee:ff:00:11:22||Sun Fire V60x in
my office
10.9.32.117|44:55:66:77:88:99:aa:bb:cc:dd:ee:ff:00:11:22:33|joe@asdfg.com|Ultr
a 80 in hardware lab
```

Host Approval

After verifying that a host's fingerprint is valid, it may be desirable to mark that host as valid without actually initiating management of the host. Sun Control Station 2.2 provides the "Approve" function for this purpose. Marking a host as "Approved" is purely an organizational aid to the system administrator, and has no effect on Control Station function. For instructions, see "Marking a Host as Approved" on page 38.

Marking a Host as Approved

1. **Navigate to the Scanned Hosts screen (Administration → Hosts → Add).**
2. **Check the box for each host to be marked as Approved and click the Approve button.**

   A progress dialog appears as each host is marked.
3. **When the process is complete, click the Done button.**

   The Scanned Hosts table is re-displayed, and the status of selected hosts appears as "Approved."

Modifying Hosts

You can modify the email address for notifications or the description of a host.

1. **Select Administration → Hosts.**

   The Managed Hosts table appears in the selector window.

2. **In the selector window, select the hosts you want to modify.**

   You can also click Select All to choose all hosts in the list.

3. **Click Modify in the bottom right corner.**

   The Modify Host table appears.

4. **You can modify the following settings:**

   - Email Address (Optional): Enter the email address of the contact person for this host.
   - Description (Optional): Enter a description of this host; for example, "Sun LX50 server in Room 2321".

5. **To cancel the task and return to the previous list, click Cancel.**

6. **To proceed with the task, click Save.**

   The Managed Hosts table appears displaying the modified information.

Creating a Group of Hosts

1. **Select Administration → Hosts.**

   The Managed Hosts table appears in the selector window.

2. **In the selector window, select the hosts you want to include in the new group.**

   You can also click Select All to choose all hosts in the list.

3. **Click Group in the bottom right corner.**

   The Create a New Group table appears; see FIGURE 3-4.

FIGURE 3-4 Create A New Group Table

4. **Configure the follow settings:**
   - Group Name: Enter the name of the group.
   - Description (Optional): Enter the description for the group (up to 255 characters).
5. **To cancel the task and return to the Managed Hosts table, click Cancel.**
6. **To proceed with the task, click Save.**

   The Groups table appears with the new group.

   In the Groups table, you can view details for, modify, or delete the group. You can also add or remove hosts to or from the group. For more information, see "Groups" on page 49.

Viewing an Installed Control Modules Report

You can view a report about the installed control modules for one or more hosts selected in the Managed Hosts table.

In the resulting table, you can launch control module tasks for a given host without having to select that control module from the main menu.

1. **Select Administration → Hosts.**

   The Managed Hosts table appears in the selector window.
2. **In the selector window, select the hosts for which you want to run a control module task.**

   You can also click Select All to choose all hosts in the list.
3. **Click the Modules button.**

   The Control Module Installation Report For Hosts table appears (see FIGURE 3-5).

FIGURE 3-5 Control Module Installation Report

This table displays the hosts that you selected and the following information:

- Host Name: The host name or IP address of the host
- Class: The class of the host (if available)
- Eligible: The number of control modules for which this host is eligible (some control modules apply only to a certain class of host)
- Installed: The number of control modules installed on the host
- Failed: The number of control modules that failed to install on the host
- Action: Click on an icon in this column to perform an action, including:
  - *Magnifying glass* icon: This action displays another table showing the control modules for which the host is eligible, the version and vendor of the module, the status of that module (installed or not installed), and another Action column (see FIGURE 3-6).

FIGURE 3-6 Eligible Control Modules For *Host* Table

If the client-side components of a module are installed on the host, you can remove these components by clicking on the *minus* icon in the Action column. If the client-side components are not installed, you can install these components by clicking on the *plus* icon.

For more information, see "Installing Client-Side Components to Selected Hosts" on page 46 and "Removing Client-Side Components From Selected Hosts" on page 47.

- *Inventory* icon: This action displays the inventory information for the host, including IP address and host name, system memory, CPU, network interface cards (NICs), and more.

- *Health Monitoring* icon: This action displays health information for host system components and services.

4. **Click the *up arrow* icon in the top right corner to return to the Managed Hosts table.**

Removing a Host

1. **Select Administration → Hosts.**

   The Managed Hosts table appears in the selector window.

2. **In the selector window, select the hosts you want to remove.**

   You can also click Select All to choose all the managed hosts in the list.

3. **Click the Remove button.**

   A confirmation table appears, asking you to confirm the removal of the selected hosts.

4. **To cancel the task and return to the selector window, click Cancel.**

5. **To proceed with the task, click Remove Host.**

   The Task Progress Dialog appears.

Modules

You can view the control modules installed on the Sun Control Station in the Control Modules table.

Control Modules Table

The Control Modules table has seven columns:

- Name: The name of the control module
- Version: The version number of the control module
- Vendor: The vendor of the control module
- Eligible: The number of hosts that are eligible for this control module
- Installed: The number of hosts on which this control module is installed
- Failed: The number of hosts on which this control module failed to install

- Actions: To add the client-side components of the control module to a host, to remove the client-side components from a host, to view the details for a module, or to delete a module from the Control Station

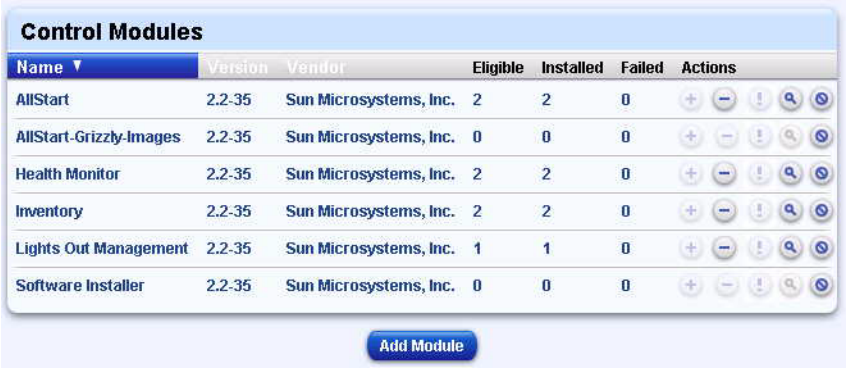

FIGURE 3-7 Control Modules Table

You can sort the list of control modules according to the name of the module, the version number, the vendor, the number of hosts that are eligible for the module, or the number of hosts on which the module successfully installed or failed to install, in ascending or descending order.

Ascending order means from lowest value to the highest value (a–z or 1–9). Descending order means from highest value to the lowest value (z–a or 9–1). By default, the Control Modules table is sorted by module name in ascending order.

In the heading of the column which has been sorted, a *triangle* icon points down (ascending order) or up (descending order).

Viewing the Control Modules Table

To view the Control Modules table:

- **Select Administration → Modules.**

  The Control Modules table appears. See FIGURE 3-7.

  In this table, you can add the client-side components of the control module to a host or remove them from a host, view the details about a particular control module, or remove the control module from the Sun Control Station (along with the client-side components from all hosts).

Adding a Control Module

When you add a control module to the Control Station, a menu item for this new module appears in the menu on the left side of the UI.

To add a control module:

1. **Select Administration → Modules.**

   The Control Modules table appears.

2. **Click Add Module at the bottom of the table.**

   The Add Module table appears; see FIGURE 3-8.

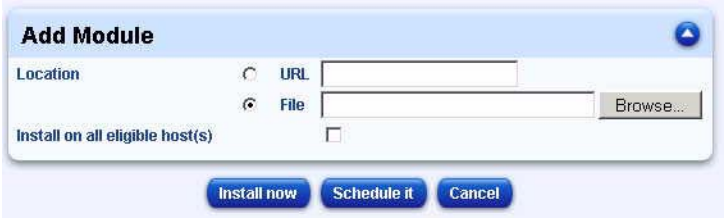

FIGURE 3-8 Add Module Table

3. **Click one of the radio buttons and enter the location from which the control module package is obtained.**

   - Enter a URL beginning with `http://` or `ftp://` to download the control module from a location on the Internet.
   - Click Choose File to locate the control module.

4. **Enable the check box Install On All Eligible Hosts if you want to install, in this same procedure, the client-side components on all eligible hosts.**

   If you do not want to do this, you can select at a later time the hosts on which to install the module components.

5. **Click Install Now.**

   The Task Progress Dialog appears.

Note – You can also schedule the installation of a new control module for a later time. For more information, see "Using the Scheduler" on page 11.

Note – If the newly added control module does not appear in the menu on the left, refresh your browser window.

If there is documentation available for this module, it is added to the list of online documentation. For more information, see "Accessing Online Documentation" on page 14.

Viewing Control Module Details

To view the details about a control module:

1. **Select Administration → Modules.**

   The Control Modules table appears.

2. **Locate in the list the module for which you want to view the details.**

3. **Click the *magnifying glass* icon in the Actions column.**

   The Eligible Hosts For *Control Module* table appears (see FIGURE 3-9).

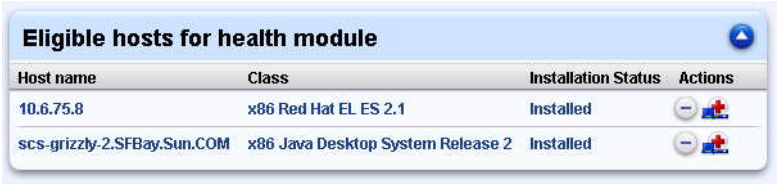

FIGURE 3-9 Eligible Hosts For *Control Module* Table

The table shows the IP address or host name of the hosts on which the module has been installed, the class of host and the installation status of the module for each host.

If the client-side components of a module are installed on the host, you can remove these components by clicking on the *minus* icon in the Actions column. If the client-side components are not installed, you can install these components by clicking on the *plus* icon.

For more information, see "Installing Client-Side Components to Selected Hosts" on page 46 and "Removing Client-Side Components From Selected Hosts" on page 47.

4. **Click the *up arrow* icon in the top right corner to return to the Control Modules table.**

Installing Client-Side Components to Selected Hosts

If you have added a control module but not installed the client-side components on the eligible hosts, you can install the client-side components to selected hosts.

To install the client-side components to a single host or a number of hosts:

1. **Select Administration → Modules.**

   The Control Modules table appears.

2. **Locate in the list the module for which you want to install the client-side components.**

   If there are eligible hosts that do not have the module, the *plus* icon is active in the Actions column.

3. **Install the client-side components.**

   - To install the client-side components on more than one host:

   a. **Click the *plus* icon.**

      The eligible hosts appear in the selector window; see FIGURE 3-9.

   b. **In the selector window, select the hosts on which you want to install the client-side components.**

      You can also click Select All to choose all hosts in the list.

   c. **Click Install Now at the bottom.**

      The Task Progress Dialog appears.

Note – You can also schedule the installation of the client-side components for a later time. For more information, see "Using the Scheduler" on page 11.

   - To install the client-side components on a single host*:*

   a. **If you click the *magnifying glass* icon, the Eligible Hosts for *Control Module* table appears.**

   b. **Click the *plus* icon next to the host on which you want to install the client-side components for the module.**

      The Task Progress Dialog appears.

Removing Client-Side Components From Selected Hosts

You can remove the client-side components from a single host or from a number of hosts.

1. **Select Administration → Modules.**

   The Control Modules table appears.

2. **Locate in the list the module for which you want to remove client-side components.**

   If there are eligible hosts that have the module, the *minus* icon is active in the Actions column.

3. **Remove the client-side components.**

   - To remove the client-side components on more than one host:

   a. Click the *minus* icon.

   The eligible hosts appear in the selector window; see FIGURE 3-9.

   b. In the selector window, select the hosts from which you want to remove client-side components.

   You can also click Select All to choose all hosts in the list.

   c. Click Uninstall Now at the bottom.

   The Task Progress Dialog appears.

Note – You can also schedule the removal of the client-side components for a later time. For more information, see "Using the Scheduler" on page 11.

   - To remove the client-side components from a single host:

   a. If you click the *magnifying glass* icon, the Eligible Hosts for *Control Module* table appears.

   b. Click the *minus* icon next to the host from which you want to remove client-side components.

   The Task Progress Dialog appears.

Retrying a Failed Installation

The client-side components of a control module may not always install successfully on a host, and this is indicated in the Control Modules table. The number of hosts on which the install task failed appears in the Failed column. You can view a list of these hosts and try to install the components again.

To install the client-side components again:

1. **Select Administration → Modules.**

   The Control Modules table appears.

2. **Locate in the list the module for which you want to view the failed installation report.**

3. **Click the *exclamation mark* icon in the Actions column.**

   The hosts on which the client-side components failed to install appear in the selector window.

4. **In the selector window, select the hosts on which you want to try to install again the client-side components.**

   You can also click Select All to choose all hosts in the list.

5. **Click the Retry Now button.**

   The Task Progress Dialog appears.

Note – You can also schedule the reinstallation of client-side components for a later time. For more information, see "Using the Scheduler" on page 11.

Removing a Control Module

If you remove one of the five preinstalled control modules (for example, Health Monitoring), you cannot reinstall it later from the Sun Control Station (the modules are not stored on the Control Station).

See "Administration Functions" on page 29 for the list of preinstalled control modules. To add the module to the Control Station; see "Adding a Control Module" on page 44.

1. **Select Administration → Modules.**

   The Control Modules table appears.

2. **Locate in the list the control module that you want to remove.**

3. **Click the *delete* icon in the Actions column.**

   The Confirm Removal of Control Module table appears, asking you to confirm the removal.

4. **Click Remove Module.**

   The Control Modules table appears with the updated information.

   This removal task removes all server-side components from the Sun Control Station and, if the managed host is accessible, all client-side components from the hosts on which the module was installed.

Groups

You can group together a number of hosts under a single group name. Groups can help you manage your hosts according to, for example, geographic location or class of host.

Groups Table

The Groups table has four columns; FIGURE 3-10 shows an example of the table.

- Name
- Description
- Hosts
- Actions

FIGURE 3-10 Groups Table

You can sort the list of groups according to the name of the group, the description of the group, or the number of hosts in a group, in ascending or descending order.

Ascending order means from lowest value to the highest value (a–z or 1–9). Descending order means from highest value to the lowest value (z–a or 9–1). By default, the Groups table is sorted by group name in ascending order.

In the heading of the column which has been sorted, a *triangle* icon points down (ascending order) or up (descending order).

Viewing the Groups Table

To view the Groups table:

1. **Select Administration → Groups.**

   The Groups table appears.

   The next section explains how to create a group. See "Creating a Group of Managed Hosts" on page 50.

   Once a group is created, you can perform various operations on that group. These operations are found in the Actions column of the Groups table, and are explained in the indicated pages of this document.

   - Modify a group ("Modifying a Group" on page 51)
   - View details of a group ("Viewing Group Details" on page 52)
   - Add one or more hosts to a group ("Adding a Host to a Group" on page 52)
   - Remove one or more hosts from a group ("Removing a Host From a Group" on page 53)
   - Remove a group ("Removing a Group" on page 53)

Creating a Group of Managed Hosts

1. **Select Administration → Groups.**

   The Groups table appears.

2. **Click Create Group at the bottom of the table.**

   The Create A New Group table appears (see FIGURE 3-11).

FIGURE 3-11 Create A New Group table

3. **Fill in the following fields:**
   - Group Name: Enter a name for the group.
   - Description (Optional): Enter a short description for this group. The description can contain up to 255 characters.
   - Choose Hosts To Add: Enable this check box if you want to add hosts to the group in this same procedure.
4. **Click Save.**

   If you did not click the check box Choose Hosts To Add, the Groups table appears with the new group; the new group contains no hosts.

   If you did click the check box Choose Hosts To Add, the selector window appears, displaying the list of managed hosts.
5. **In the selector window, select the hosts you want to add to the group.**

   You can also click Select All to choose all hosts in the list.
6. **Click the Add button.**

   The Groups table appears with the new group added. The groups are sorted by group name in ascending order.

Modifying a Group

You can change the name or the description for a group.

1. **Select Administration → Groups.**

   The Groups table appears.
2. **Locate in the list the group that you want to modify.**
3. **Click the *pencil* icon in the Actions column.**

   The Modify Group table appears.

4. **You can modify the group name or the description of the group.**

   The Description field is optional.

5. **Click Save.**

   The Groups table appears with the modified information.

Viewing Group Details

You can see which hosts belong to a given group.

1. **Select Administration → Groups.**

   The Groups table appears.

2. **Locate in the list the group for which you want to view the details.**

3. **Click the *magnifying glass* icon in the Actions column.**

   The selector window appears, displaying the list of managed hosts within that group.

4. **To return to the list of groups, click the *up arrow* icon.**

   The up arrow icon is located in the top right of the interface. The Groups table appears.

Adding a Host to a Group

You can add one or more hosts to an existing group.

1. **Select Administration → Groups.**

   The Groups table appears.

2. **Locate the group to which you want to add a host.**

3. **Click the *plus* icon in the Actions column.**

   The selector window appears, displaying the list of managed hosts on the Sun Control Station.

4. **In the selector window, select the hosts you want to add to the group.**

   You can also click Select All to choose all hosts in the list.

   You can select a host in another group to add to the current group. The host will then appear as a member of both groups.

5. **Click the Add button.**

   The Groups table appears with the updated information. The groups are sorted by group name in ascending order.

Removing a Host From a Group

You can remove one or more hosts from an existing group.

1. **Select Administration → Groups.**

   The Groups table appears.

2. **Locate the group from which you want to remove a host.**

3. **Click the *minus* icon in the Actions column.**

   The selector window appears, displaying the list of managed hosts that belong to the group.

4. **In the selector window, select the hosts you want to remove from the group.**

   You can also click Select All to choose all hosts in the list.

5. **Click the Remove button.**

   The Groups table appears with the updated information. The groups are sorted by group name in ascending order.

Removing a Group

You can remove an existing group. Removing a group does not remove the managed hosts in that group from the Sun Control Station. To remove one or more hosts, see "Removing a Host" on page 42.

1. **Select Administration → Groups.**

   The Groups table appears.

2. **Locate the group that you want to remove.**

3. **Click the *delete* icon in the Actions column.**

   The Confirm Group Removal table appears, asking you to confirm the removal.

4. **Click Remove Group.**

   The Groups table appears with the updated information.

Tasks and Events

You can view a list of tasks, as well as a a list of the events generated for a given task in the system. For an explanation of tasks and events on the Sun Control Station, see "Tasks and Events" on page 30.

Viewing the Tasks Table

- **Select Administration → Tasks.**

The Tasks table appears. It has five columns.

FIGURE 3-12 Tasks Table

Note – If there are more than 10 entries in the Tasks table, the table lists the first 10 entries. There are buttons at the bottom of the table with which to choose different ranges of entries.

The columns are:

- Status: the status of the task:
  - Green with checkmark: Completed successfully
  - Yellow with exclamation mark: Completed with warnings
  - Red with X: Failed
- Name: the string name of the functional component that created the task
- Start Date/Time: the date and time that the task started
- Duration: indicates how long a task took to complete (shown in the format *hh:mm:ss*) or how far a task has progressed (in percentage)
- Actions: Clicking the *magnifying glass* icon allows you to see the individual events associated with a task. A new table appears listing the events. Click the *up-arrow* icon in the top-right corner to return to the Tasks table.

You can sort the list of tasks according to the name of the task, the start date/time of the task, or the duration of the task, in ascending or descending order.

Ascending order means from lowest value to the highest value (a–z or 1–9). Descending order means from highest value to the lowest value (z–a or 9–1). By default, the Tasks table is sorted by start date and time in ascending order.

In the heading of the column which has been sorted, a *triangle* icon points down (ascending order) or up (descending order).

Viewing the Events Table

1. **Select Administration → Tasks.**

   The Tasks table appears.

2. **To view the events for a particular task, click the *magnifying glass* icon in the Actions column.**

   The Events for *Task* table appears (see FIGURE 3-13).

Note – If there are more than 10 entries in the Events table, the table lists the first 10 entries. There are buttons at the bottom of the table with which to choose different ranges of entries.

FIGURE 3-13 Events Table

The Events table columns are:

- Status: An icon representing the status of the task:
  - Green with checkmark: Completed successfully
  - Yellow with exclamation mark: Completed with warnings
  - Red with X: Failed
- Message: A message describing the event
- Start Date/Time: The date and time that the event took place

You can sort the list of tasks according to the message or the start date/time of the event.

Ascending order means from lowest value to the highest value (a–z or 1–9). Descending order means from highest value to the lowest value (z–a or 9–1). By default, the Tasks table is sorted by start date and time in ascending order.

In the heading of the column which has been sorted, a *triangle* icon points down (ascending order) or up (descending order).

3. **To return to the Tasks table, click the *up arrow* icon in the top right corner of the interface.**

   The Tasks table appears.

Schedule

For an explanation of the Schedule feature, see "Using the Scheduler" on page 11.

Viewing the Schedule Table

To view the Schedule table:

- **Select Administration → Schedule.**

  The Schedule table appears (see FIGURE 3-14). The columns are:

  - Name: The name of the scheduled task
  - Type: How often the scheduled task runs
  - Settings: The time and date on which the scheduled task runs
  - Actions: To view the details for a scheduled task, modify the settings for a scheduled task, or delete a scheduled task. For certain tasks, you can also use the *plus* icon or the *minus* icon to add or remove hosts to or from the scheduled task.

FIGURE 3-14 Schedule Table

You can sort the list of scheduled tasks according to the name of the task, the type of task, or the settings for the task, in ascending or descending order.

Ascending order means from lowest value to the highest value (a–z or 1–9). Descending order means from highest value to the lowest value (z–a or 9–1). By default, the Schedule table is sorted by module name in ascending order.

In the heading of the column which has been sorted, a *triangle* icon points down (ascending order) or up (descending order).

Configuring the Cleanup Task

Cleanup is a built-in scheduled task that allows you to clean up the list of tasks and events retained by the Sun Control Station. The Cleanup task runs once per day. You can change some of its settings, but you cannot delete or disable it.

1. **Select Administration → Schedule.**

   The Schedule table appears.

2. **In the Action column for the Cleanup task, click the *pencil* icon.**

   The Schedule Settings For Cleanup table appears.

3. **Configure the following settings:**
   - Run Time: The time of day that the cleanup task runs. The system deletes all tasks and events that are 14 days old.

     The format is *hh:mm* (24-hour format).
   - Email Address (Optional): Enter an email address of the person who will be notified when the Cleanup task runs.
   - Notify When Starting: Enable the check box to notify the person when the Cleanup task is starting.
   - Notify When Finished: Enable the check box to notify the person when the Cleanup task has completed.

4. **Click Save.**

   The Schedule table appears with the updated settings.

Viewing Scheduled Task Details

1. **Select Administration → Schedule.**

   The Schedule table appears.

2. **Click the *magnifying glass* icon for the task for which you want to see details.**

   The Tasks table appears. For more information on this table, see "Viewing the Tasks Table" on page 54.

3. **To return to the Schedule table, click the *up arrow* icon.**

   The Schedule table appears.

Modifying a Scheduled Task

1. **Select Administration → Schedule.**

   The Schedule table appears.

2. **Click the *pencil* icon for the task you want to modify.**

   The Schedule Settings For *Task* table appears.

3. **Modify the settings.**

4. **Click Save.**

   The Schedule table appears with the updated settings for that task.

Deleting a Scheduled Task

1. **Select Administration → Schedule.**

   The Schedule table appears.

2. **Click the *delete* icon next to the task that you want to delete.**

   A confirmation table appears, asking you to confirm the removal of the scheduled task.

3. **To cancel the task and return to the Schedule table, click Cancel.**

4. **To proceed, click Remove Schedule.**

   The Schedule table appears, with the scheduled task removed from the table.

APPENDIX **A**

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