# Sun Control Station

## AllStart Module

Sun Microsystems, Inc.
www.sun.com

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# Contents

CHAPTER 1

# Introduction

Data centers are increasingly employing a mixture of Linux- and Solaris™-based systems. The Sun™ Control Station is an integrated management solution designed to support a large diversity of systems.

For busy system administrators, one key area of systems management is simplifying and automating the tasks related to performing an initial installation and configuration on a client, and allowing a given configuration to be installed on a large number of clients.

The AllStart control module integrates Kickstart and AutoYaST technologies to provide a quick and unified method of installing and customizing Linux-based systems.

Kickstart is a Red Hat feature that allows you to automate most of the tasks in a Red Hat Linux installation, such as:

- Language selection.
- Network configuration and selection of distribution source.
- Keyboard selection.
- Boot Loader installation.
- Disk partitioning and creation of file systems.
- Mouse selection.
- X Window system server configuration.
- Time Zone Selection.
- Selection of an (initial) root password.
- Configuration of firewall rules.
- Configuration of security options (for example, md5 and yp).
- Customization of the distribution payload.

Kickstart allows for you to run an unattended installation process, by putting the information you would normally type at the keyboard into a configuration file. It also provides a method to install additional software that is not distributed as part of the Red Hat Linux distribution.

AutoYaST is the system for installing one ore more Sun Java Desktop Systems automatically and without user intervention; it is fully integrated in the installer YaST2.

The AutoYaST tool is designed to allow the creation of a configuration for a single system or a set of systems. The configuration is stored in a control file which is read during the automated installation and can be made available to the installer in different ways.

AutoYaST configurations are XML-based and the configuration is fully compatible with configuration modules in YaST2.

Using AutoYaST, multiple systems sharing the same environment and hardware performing similar tasks can easily be installed in parallel. A configuration file (referred to as control file) is created using existing configuration resources. The control file can be easily tailored for any specific environment.

The AllStart control module provides a common user interface for creating software payloads, defining client profiles, and monitoring and validating system installations and updates.

This module allows you to:

- Select files or RPMs to load onto a client.
- Select the distributions of different OSs to load onto a client.
- Create customized payloads made up of files and OS distributions.
- Create profiles containing configuration information.
- Add clients on to which the payloads and profiles are loaded (using the Media Access Layer [MAC] address of the client).

# Requirements

You must have the following conditions in place for the AllStart control module to function correctly.

- Your clients must be configured to "netboot" in order to retrieve the payloads from the Sun Control Station.
- There can be no other Dynamic Host Configuration Protocol (DHCP) servers on the same subnet as your control station running the AllStart control module.
- The following software components must be installed on your clients:
  - DHCP daemon (dhcpd).
  - Trivial File Transfer Protocol (TFTP).
  - Hypertext Transfer Protocol (HTTP).
  - Network Files Sharing daemon (nfsd).
- If you intend to store the ISO images of the OS distributions on the server running the Sun Control Station 2.0 software, ensure that there is sufficient space on your hard disk drives (HDDs).

  For example, a typical Linux OS distribution is roughly 600-800MBs. Furthermore, these ISO files are copied to another directory when you create a payload, thus doubling the amount of disk space used.

  During the upload, ISO images are mounted and the RPM files are copied into the directory `/scs/data/allstart/iso/`. After the distribution has been loaded successfully, the ISO images can be deleted.

# Overview

**Note –** For a description of the procedures and UI screens, see Chapter 2, "AllStart Features" on page 9.

Using the AllStart module consists of four separate steps:

1. Create a payload(s) from files and distributions.
2. Create a profile(s) containing configuration information.
3. Select a client(s) on which to install a payload and a profile, and enable the client entry (or entries).
4. Configure a client(s) to boot from the network ("netboot") and then reboot the client so that it pulls the payload and profile from the Sun Control Station.

## Creating a Payload

The first step is to create a *payload*. A payload consists of an OS distribution and other individual files all bundled together.

You can select the components of the OS distribution that you want to include in the payload. The individual files are installed on the client after the distribution has been installed.

The files and distributions can be located locally or on a CD-ROM. If located locally, the distribution must be in `/scs/data/allstart/iso/`.

Each payload is identified by a unique, descriptive name.

# Creating a Profile

The second step is to create a *profile*. A profile contains configuration information that will be applied to a client along with a payload. You also configure security settings in a profile.

Some of the items in a profile include:

- Default language.
- Type of keyboard.
- Type of mouse.
- Time zone in which the clients that you will configure are located.
- Root password for the clients.
- Choice to reboot the client after payload installation.
- Boot loader options.
- Partition options for the HDDs.
- Authentication information.
- X configurations.
- Custom script options.

# Specifying a Client

The third step is to specify a client(s) on which to install a payload and profile.

This includes entering information for the following parameters:

- MAC address.
- Install IP address.
- Type of install.
- Output port for the serial console.
- Serial console baud.
- Install network interface (`ethx`) over which to load the payload and profile.
- Payload to load.
- Profile to load.
- Information for the network interfaces on the client.

### Enable or Disable a Client

Once the client entry has been created, you must *enable* the client in the AllStart Clients table.

Enabling a client is a similar function to publishing a package file in the Software Management module. You can have a package file loaded on to a control station, but you must *publish* the package file to make it visible to managed hosts or other control stations.

In the same way, you must enable a client entry in the AllStart Clients table so that it is visible to that client machine on the network.

If you do not enable a client entry, the client cannot receive the payload and profile when you netboot the client because it will not "see" its client entry.

## Installing a Payload and Profile to a Client

The final step is to configure your client(s) to boot from the network.

Once this setting is configured, reboot the client so that it pulls the payload and profile from the control station. The client entry must be enabled in the AllStart Clients table for this operation to succeed.

---

**Note –** The installation is not an active "push" operation from the Sun Control Station to the client. The client must "pull" the payload and profile from the control station; the client receives a payload and profile according to the client entry in the AllStart Clients table.

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## Importing a New Client into Sun Control Station

Once you have installed a payload and profile on the client, you can import the client into the Sun Control Station framework, using the Add Host function (through the Administration > Hosts > Add screen).

The control-station agent RPM is available to add as a extra file to any payload that you create, but you have to manually add it to the payload. The Sun Control Station can import a client only if this agent is loaded on the client.

For more information on importing a new client, refer to the PDF *Sun Control Station—Administrator Manual* (part number 817-3603-xx).

# General information

## Task Progress dialog

When you launch a task (for example, saving a profile or uploading a distribution), a Task Progress dialog appears in the user interface (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.

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 on the left. 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 re-display 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.

CHAPTER 2

# AllStart Features

This chapter explains the features and services available through the AllStart control module on the Sun™ Control Station.

**Note –** In most of the short procedures in this chapter, the first step is to click the AllStart item in the left menu bar and the second step is to click on an item from the sub-menu.

To reduce the number of steps in each procedure, the menu commands are grouped together and shown in Initial Caps. Right-angle brackets separate the individual items.

For example, select AllStart > Clients means to click AllStart in the left menu bar and then click the Clients sub-menu item.

# Files

## Adding a File

You can add a file from a remote location or from a local directory on the control station.

To add a file from a remote location:

1. **Select AllStart > Files.**

   The AllStart Files table appears.

2. **Click Add at the bottom right.**

   The Add File from Remote Location table appears; see FIGURE 2-1.

3. **Choose the type of file from the pull-down menu: RPM or file.**

4. **Locate the file with one of the following methods:**

   - Click the radio button next to File. Enter the path and file name or click the button to locate the file.
   - Click the radio button next to URL. Enter the URL for the file.

5. **Click Upload Now.**

   The Task Progress dialog appears.

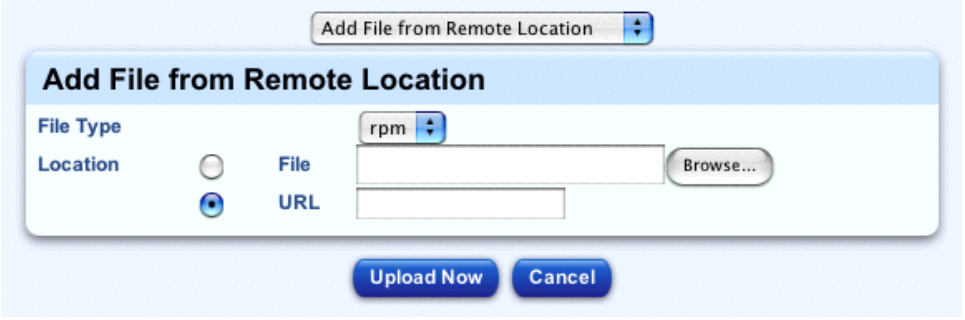


**FIGURE 2-1** Add File from Remote Location table

To add a file from a local filesystem on the control station:

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**Note –** To appear on this screen, the file(s) must be loaded into the directory `/scs/data/allstart/iso/` on the control station.

---

1. **Select AllStart > Files.**

   The AllStart Files table appears.

2. **Click Add at the bottom right.**

   The Add File from Remote Location table appears.

3. **From the pull-down menu above the table, select Add File(s) from Local Filesystem.**

   The Add File(s) from SCS Filesystem table appears; see FIGURE 2-2.

4. **Choose the type of file from the pull-down menu: RPM or file.**

5. **In the SCS Local Files scrolling window, highlight the file(s) you want to load.**

6. **Click Add to move the file(s) to the Files to Load scrolling window.**

7. **When you have selected the file(s), click Upload Now.**

   The Task Progress dialog appears.

## Deleting a File

To delete a file from the AllStart Files table:

1. **Select AllStart > Files.**

   The AllStart Files table appears.

2. **Click to highlight a file(s). You can also click Select All at the top to choose all files in the list.**

3. **Click Delete at the bottom right.**

   A dialog appears, asking you to confirm the deletion.

4. **Click Delete.**

   The Task Progress dialog appears.

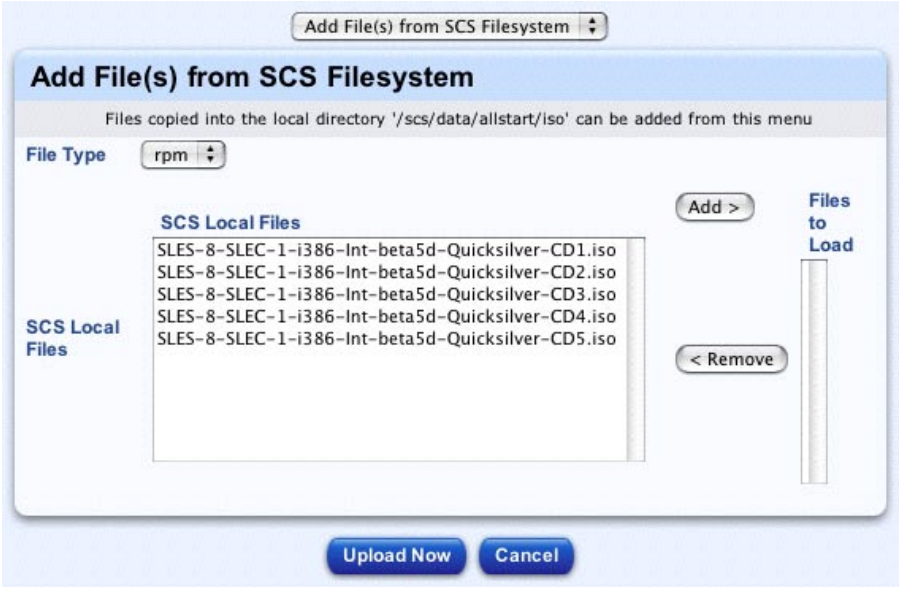


**FIGURE 2-2** Add File(s) from SCS Filesystem table

# Distributions

You can add, modify or delete a distribution.

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**Note –** You can use a customized kernel with a distribution. For more information, see "Using a Customized Kernel" on page 75.

---

## Adding a Distribution

You can add a distribution from a CD-ROM or from a local directory.

---

**Note –** When uploading an OS distribution from a CD-ROM, **do not click** the option "Put Task in Background" when the Task Progress dialog appears.

If you do so, the system does not allow you to continue with the next CD-ROM and the complete distribution will not be uploaded.

If, by accident, you do put the task in the background, you will need to delete this distribution from the AllStart Distributions table and start this procedure again.

---

To add a distribution from a CD-ROM:

1. **Select AllStart > Distributions.**

   The AllStart Distributions table appears.

2. **Click Add at the bottom right.**

   The Upload Distribution from CD-ROM table appears; see FIGURE 2-3.

3. **Enter a description of the distribution.**

---

**Note –** It is important to use a unique, descriptive name for each distribution. The system differentiates the distributions according to this description.

---

4. **The default path to the CD-ROM is `/dev/cdrom`.**

   You can modify this path if necessary.

5. **Click Upload Now.**

   The Task Progress dialog appears.

---

**Note – Do not click** the option "Put Task in Background".

If you do so, the system does not allow you to continue with the next CD-ROM and the complete distribution will not be uploaded.

If, by accident, you do put the task in the background, you will need to delete this distribution from the AllStart Distributions table and start this procedure again.

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**FIGURE 2-3** Upload Distribution from CD-ROM table

To add a distribution from a local directory on the control station:

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**Note –** For this method, the physical .iso files must be loaded into the local file system in the directory `/scs/data/allstart/iso/` so that they appear in the scrolling window in the Distribution Upload table.

---

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**Note –** When viewing the distributions available from a local directory, the *.iso files for a given distribution are sorted by name. The file name usually contains a disc number (for example, `SLES-8-SLEC-1-i386-Int-beta5d-Quicksilver-CD1.iso`).

Ensure that you select and transfer at the same time all of the *.iso files for a given distribution.

---

1. **Select AllStart > Distributions.**

   The AllStart Distributions table appears.

2. **Click Add at the bottom right.**

   The Upload Distribution from CD-ROM table appears.

3. **From the pull-down menu above the table, select Add Distribution from SCS ISOs.**

   The Distribution Upload table appears; see FIGURE 2-4.

4. **Enter a description of the distribution.**

---

**Note –** It is important to use a unique, descriptive name for each distribution. The system differentiates the distributions according to this description.

---

5. **In the SCS Local Files scrolling window, highlight the file(s) you want to load.**

6. **Click Add to move the file(s) to the Distro Files scrolling window.**

7. **When you have selected the file(s), click Upload Now.**

   The Task Progress dialog appears.


**FIGURE 2-4** Distribution Upload table

# Modifying a Distribution

---

**Note –** You cannot change the files associated to a distribution using the Modify option. To change the files, you have to create a new distribution.

---

To modify a distribution:

1. **Select AllStart > Distributions.**

   The AllStart Distributions table appears.

2. **Click to highlight a distribution.**

3. **Click Modify at the bottom right.**

   The Modify Distribution Info table.

4. **You can modify the description of the distribution.**

---

**Note –** It is important to use a unique, descriptive name for each distribution. The system differentiates the distributions according to this description.

---

5. **Click Save.**

   The Task Progress dialog appears.

## Deleting a Distribution

To delete a distribution from the AllStart Distributions table:

---

**Note –** If a distribution is referenced to a payload, you cannot delete the distribution. You first need to modify or delete the payload in question.

---

1. **Select AllStart > Distributions.**

   The AllStart Distributions table appears.

2. **Click to highlight a distribution(s). You can also click Select All at the top to choose all distributions in the list.**

3. **Click Delete at the bottom right.**

   If the distribution(s) is referenced to a payload, you cannot delete it.

   If the distribution(s) is not referenced to a payload, a dialog appears, asking you to confirm the deletion.

4. **Click Delete.**

   The Task Progress dialog appears.

# Payloads

You can add, view, modify or delete a payload.

## Adding a Payload

You can create a Sun Java Desktop System (JDS) payload or a Red Hat payload.

---

**Note –** If you select only one OS distribution to display in your AllStart preferences, then the Select System Type selector will not appear in the AllStart procedures. You will go directly into the procedure.

For more information, see "Advanced" on page 72.

---

### Sun Java Desktop System payload

To create a Sun JDS payload:

1. **Select AllStart > Payloads.**

   The AllStart Payloads table appears.

2. **Click Add at the bottom.**

   The Select System Type table appears.

3. **Select the type `sjds`.**

4. **Click Continue at the bottom.**

   The Create AllStart Payload table appears.

5. **Fill in the following fields:**

   - Payload Name. Enter a unique, descriptive name for this payload.

---

**Note –** It is important to use a unique, descriptive name for each payload. The system differentiates the payloads according to this name.

---

   - Payload Description. Enter a description of this payload.
   - Distribution. From the pull-down menu, select a distribution to associate to this payload.

6. **Click Next.**

   The AllStart Payload Distribution-Specific Options table for a Sun JDS payload appears; see FIGURE 2-5.

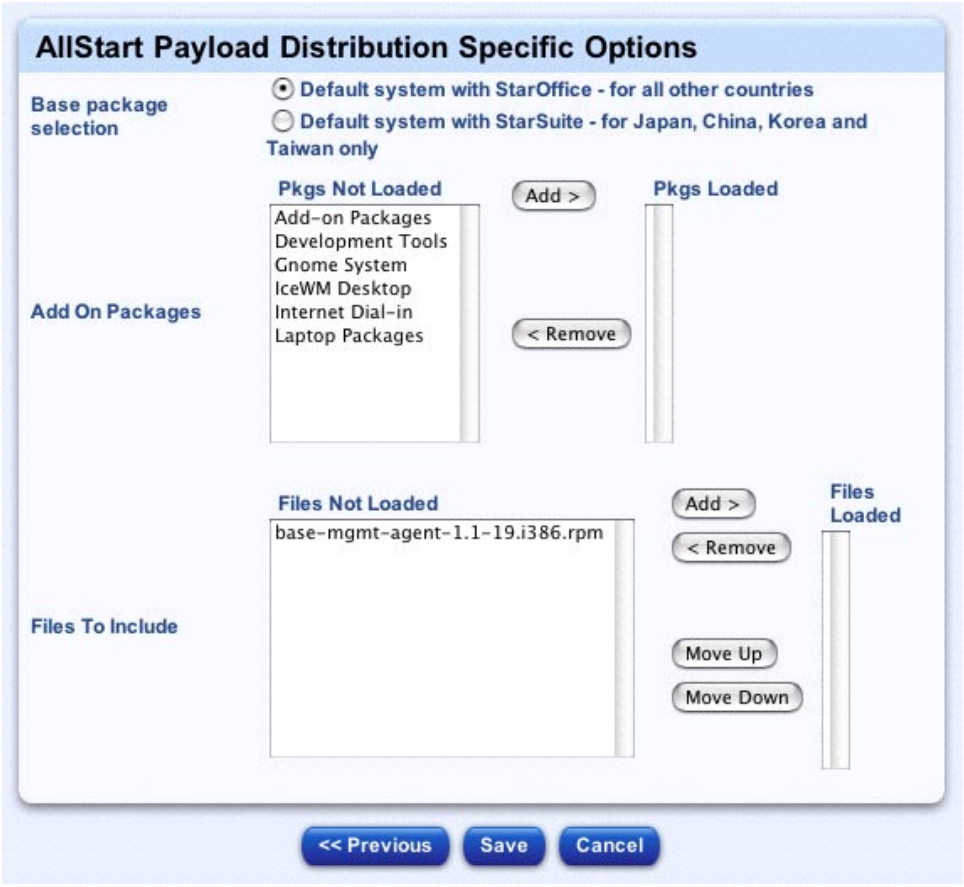


**FIGURE 2-5** Sun JDS—AllStart Payload Distribution-Specific Options table

7. **For Base Package Selection, click the radio button next to the option appropriate to your location:**

   - Default system with StarOffice — For all other countries.
   - Default system with StarSuite — For Japan, China, Korea and Taiwan only.

8. **In the Pkgs Not Loaded scrolling window, highlight the packages(s) that you want to load.**

   The Add-on Packages are the groups of RPMs that you want to load based on functionality (for example, Development Tools or Laptop Packages).

9. **Click Add to move the package(s) to the Pkgs Loaded scrolling window.**
10. **In the Files Not Loaded scrolling window, highlight the file(s) that you want to load.**

    These are the individual files that will be loaded after the base distribution is loaded.

    The base-mgmt-agent RPM is available in the Files Not Loaded scrolling window, but you have to move it to the Files Loaded scrolling window.
11. **Click Add to move the file(s) to the Files Loaded scrolling window.**
12. **Click Save.**

    The Task Progress dialog appears.
13. **When complete, the AllStart Payloads table appears. Verify that your payload appears in the summary table.**

## Red Hat payload

To create a Red Hat payload:

1. **Select AllStart > Payloads.**

   The AllStart Payloads table appears.
2. **Click Add at the bottom.**

   The Select System Type table appears.
3. **Select the type `redhat`.**
4. **Click Continue at the bottom.**

   The Create AllStart Payload table appears.
5. **Fill in the following fields:**
   - Payload Name. Enter a unique, descriptive name for this payload.

   ---

   **Note –** It is important to use a unique, descriptive name for each payload. The system differentiates the payloads according to this name.

   ---

   - Payload Description. Enter a description of this payload.
   - Distribution. From the pull-down menu, select a distribution to associate to this payload.
6. **Click Next.**

   The AllStart Payload Distribution-Specific Options table for a Red Hat payload appears; see FIGURE 2-6.

7. **In the Groups Not Loaded scrolling window, highlight the group(s) that you want to load.**

   The Distribution Groups are the groups of RPMs that you want to load based on functionality (for example, DNS server, Games and Entertainment support, Printing support, Emacs support).

   If you select the entry “Everything”, all RPMs in the distribution are added.

   If you are not sure which groups to add, add all groups.

8. **Click Add to move the group(s) to the Groups Loaded scrolling window.**

9. **In the Files Not Loaded scrolling window, highlight the file(s) that you want to load.**

   These are the individual files that will be loaded after the base distribution is loaded.

   The base-mgmt-agent RPM is available in the Files Not Loaded scrolling window, but you have to move it to the Files Loaded scrolling window.

10. **Click Add to move the file(s) to the Files Loaded scrolling window.**

---

**Note –** If you move more than one file to the Files Loaded scrolling window, you must place the files in the correct order for installation. The files are installed from the top of the list first.

Click to highlight a file and use the Move Up or Move Down buttons to change its placement in the list.

---

11. **If this payload will be installed on a Sun Fire™ V60x or Sun Fire V65x server, click to enable the check box.**

    This option enables the client to load the SCSI drivers that are required before the Linux installation can take place.

12. **Click Save.**

    The Task Progress dialog appears.

13. **When complete, the AllStart Payloads table appears. Verify that your payload appears in the summary table.**

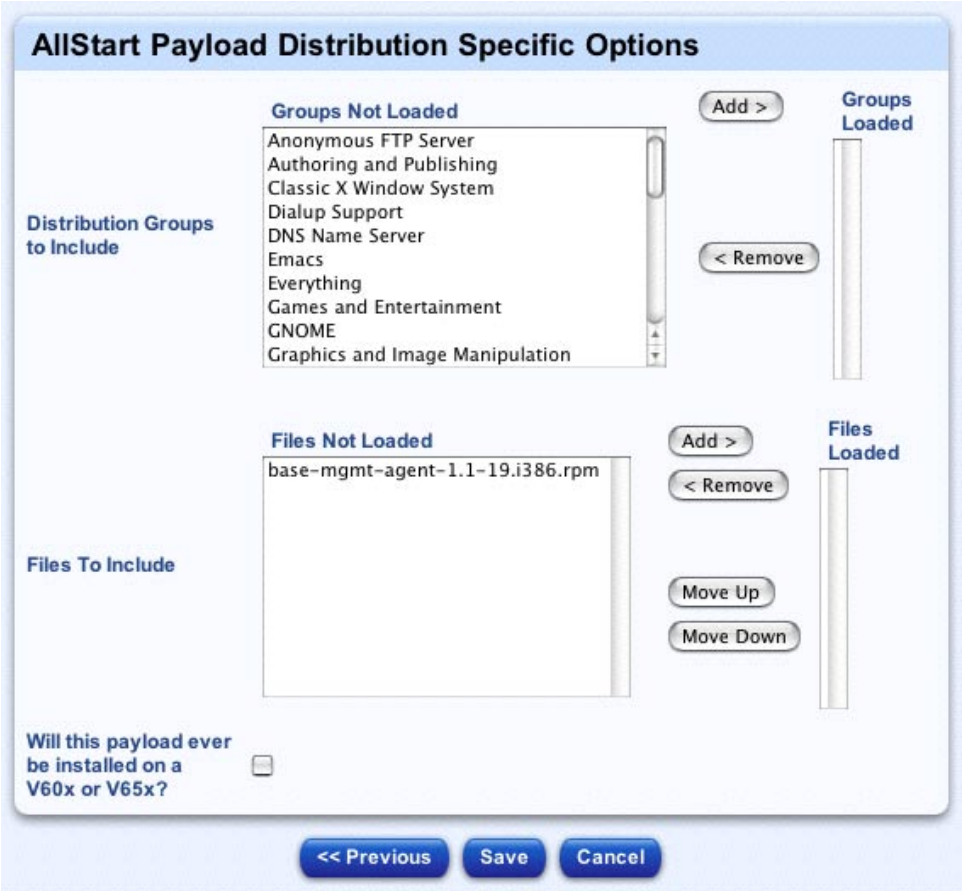


**FIGURE 2-6** Red Hat—AllStart Payload Distribution-Specific Options table

# Viewing a Payload

To view the information on a payload:

1. **Select AllStart > Payloads.**

   The AllStart Payloads table appears.

2. **Click to highlight a payload.**

3. **Click View.**

   The View AllStart Payload table appears, displaying the following information:

   - Payload name.
   - Payload description.
   - Distribution associated to the payload.
   - Payload groups.
   - Individual payload files (if any).

4. **Click Done to return to the AllStart Payloads table.**

# Modifying a Payload

To modify a payload:

1. **Select AllStart > Payloads.**

   The AllStart Payloads table appears.

2. **Click to highlight a payload.**

3. **Click Modify at the bottom.**

   The Modify AllStart Payload table appears.

4. **Modify in the following fields as desired:**

   - Payload Name. Enter a unique, descriptive name for this payload.

---

**Note –** It is important to use a unique, descriptive name for each payload. The system differentiates the payloads according to this name.

---

   - Payload Description. Enter a description of this payload.
   - Distribution. From the pull-down menu, select a distribution to associate to this payload.

5. **Click Next.**

   The AllStart Payload Distribution-Specific Options table appears.

   For more information about this table:

   - Refer to "Sun Java Desktop System payload" on page 18 if you are modifying a Sun JDS payload.
   - Refer to "Red Hat payload" on page 20 if you are modifying a Red Hat payload.

6. **Click Save.**

   The Task Progress dialog appears.

7. **When complete, the AllStart Payloads table appears. Verify that your payload appears in the summary table.**

# Deleting a Payload

To delete a payload from the AllStart Payloads table:

---

**Note –** If a payload is referenced to a client, you cannot delete the payload. You first need to modify or delete the client in question.

---

1. **Select AllStart > Payloads.**

   The AllStart Payloads table appears.

2. **Click to highlight a payload(s). You can also click Select All at the top to choose all payloads in the list.**

3. **Click Delete at the bottom right.**

   - If the payload(s) is referenced to a client, you cannot delete it.
   - If the payload(s) is not referenced to a client, a dialog appears, asking you to confirm the deletion.

4. **Click Delete.**

   The Task Progress dialog appears.

# Profiles

You can add, view, modify or delete a profile.

## Adding a Profile

You can create a Sun Java Desktop System (JDS) profile or a Red Hat profile.

---

**Note –** If you select only one OS distribution to display in your AllStart preferences, then the Select System Type selector will not appear in the AllStart procedures. You will go directly into the procedure.

For more information, see "Advanced" on page 72.

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### Sun Java Desktop System profile

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**Note –** There are a large number of UI screens in this procedure with several parameters to configure on each screen.

---

To add a Sun JDS profile:

1. **Select AllStart > Profiles.**

   The AllStart Profiles table appears.

2. **Click Add at the bottom.**

   The Select System Type table appears.

3. **Select the type `sjds`.**

4. **Click Continue at the bottom.**

   The Add AllStart Profile table appears; see FIGURE 2-7.

5. **Configure the following parameters:**

   - Profile Name. Enter a unique, descriptive name for this profile.

---

**Note –** It is important to use a unique, descriptive name for each profile. The system differentiates the profiles according to this name.

---

   - Profile Description. Enter a description of this profile.
   - Default language.
   - Type of Keyboard.
   - Type of Mouse.
   - Sound Card Vendor. Select from the scrolling window.
   - Type of Sound Card. Select fromthe scrolling window.
   - Time Zone. From the pull-down menu, select time zone in which the hosts that you will configure are located.
   - Root Password. Enter a root password for the hosts that will use this profile and confirm the password.
   - Reboot System After Installation. Click this check box to have the hosts reboot once the payload and profile have been installed.

6. **Click Next below the table.**

   The Edit Boot Loader Options table appears; see FIGURE 2-8.

7. **Configure the following parameters for the boot loader:**

---

**Note –** If you are building a machine through a serial console and you select a boot loader, you should also add the corresponding Grub customized scripts at the end of this procedure. You do this in Step 23.

---

   - Click the radio button to choose one of the following options:
     - Do not configure the Boot Loader (Done automatically).
     - Write Boot Loader to the boot disk ("MBR").
     - Do not use a Linux Boot Loader (A different boot manager is required).
   - Kernel Parameters.
   - Activate Boot Loader Partition. This option is enabled by default.

8. **Click Next below the table.**

   The Disk Partition Information table appears; see a sample in FIGURE 2-9.

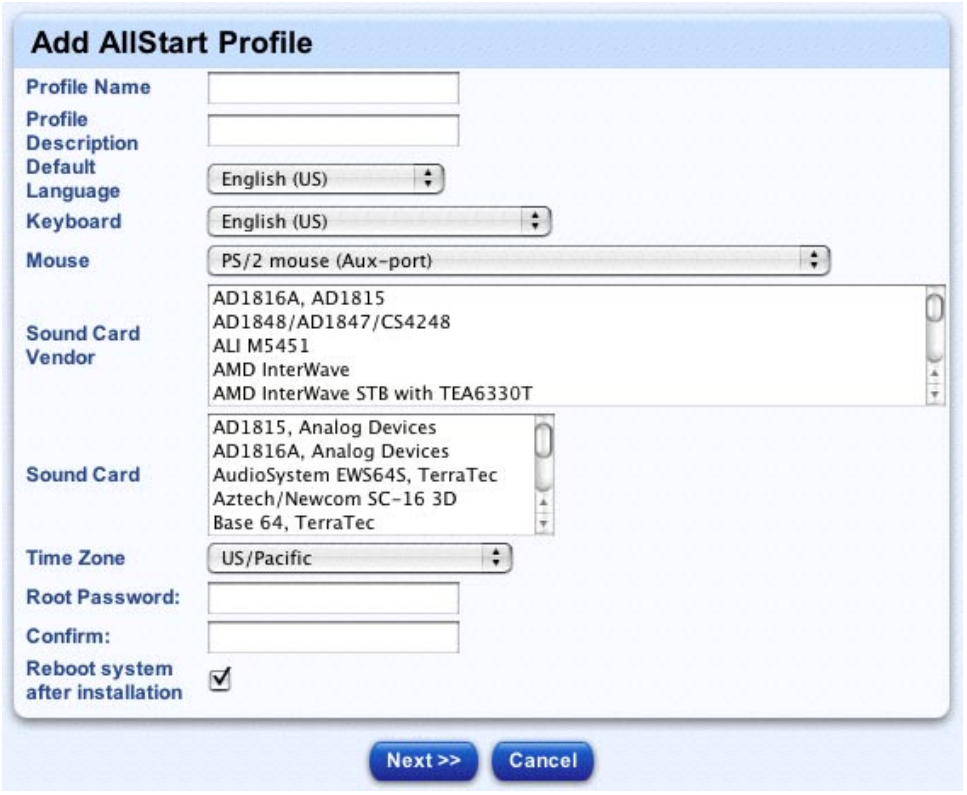


**FIGURE 2-7** Sun JDS—Add AllStart Profile table

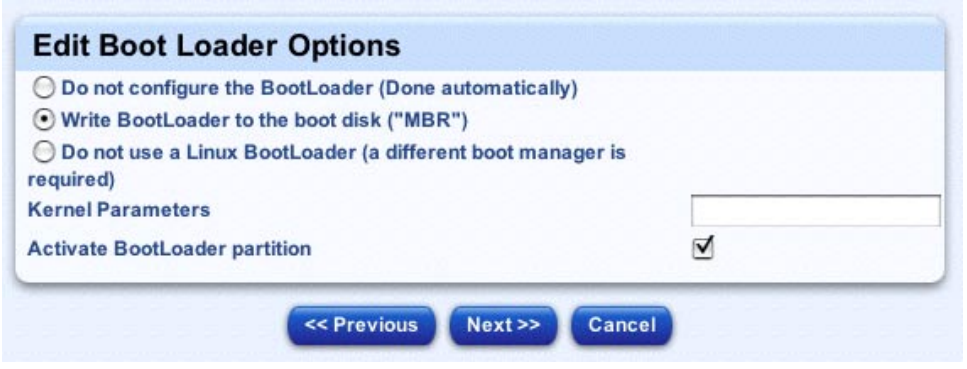


**FIGURE 2-8** Sun JDS—Edit Boot Loader Options table

### Disk Partition Information

9. **Another selector window appears.**

   For each partition, the selector displays:

   - Device/Partition Number.
   - Mount.
   - Size (in MB).
   - File System Type.

10. **In the selector, you can add, edit or delete a hard disk drive or a partition.**

---

**Note –** This step is an iterative process. In this selector window, you can add, edit or delete as many hard disk drives or partitions as you want. Once the partitions are configured, click Next to move on to the Client Configuration options.

You need to add a disk before you can add a partition.

---

---

**Note –** At a minimum, you must define the `/root` partition and at least one swap partition.

---

   a. **To add a new hard disk drive, click Add Disk.**

      The Disk Drive Options table appears; see FIGURE 2-10. You can configure the following parameters:

      - Drive. Use the pull-down menu to select a drive.
      - Click the radio button to select one of the following options:
        - Use available free space only.
        - Reuse all existing partitions.
      - Enable the checkbox to initialize the hard disk drive.

      To add a new hard disk drive to the pull-down menu, click Add Disk Drive on the right. The Define A New Disk Drive table appears. Enter the name for the new hard disk drive and click Save. The Disk Drive Options table reappears.

      Click Save to continue.

**b. To add a new partition, highlight the hard disk drive in the table and then click Add Partition in the selector.**

The Partition Options table appears; see FIGURE 2-11. You can configure the following parameters:

- Mount Point.
- Format or Do Not Format Partition. Click one of the radio buttons.
- File System Type.
- Size of the partition (MB).
- Click one of the radio buttons to select:
  - Limit the partition to a fixed size.
  - Allow a partition to use all unallocated space on the hard disk drive.
  - Determine the size automatically (only for `/boot` and `swap`).

To add a new Mount directory to the pull-down menu, click Add New Mount Dir on the right. The Define A New Mount Point table appears. Enter the name for the new mount and click Save. The Partition Options table reappears, with the new mount point displayed.

**c. To edit a hard disk drive, highlight the hard disk drive in the table and click Edit.**

The Disk Drive Options table appears. You can configure the same parameters as those for adding a new drive. See the procedure in Step a.

**d. To edit a partition, click the arrow next to the hard disk drive to display the partitions for that drive. Highlight the partition and click Edit.**

The Partition Options table appears. You can configure the same parameters as those for adding a new partition. See the procedure in Step b.

**e. To delete a hard disk drive(s) or a partition(s), highlight the drive or the particular partitions in the selector and click Delete.**

The selector refreshes with the drive(s) or partition(s) removed from the list.

---

**Note –** There is no Confirm Deletion dialog for this task, so ensure that you choose the correct hard disk drive or partition to delete.

---

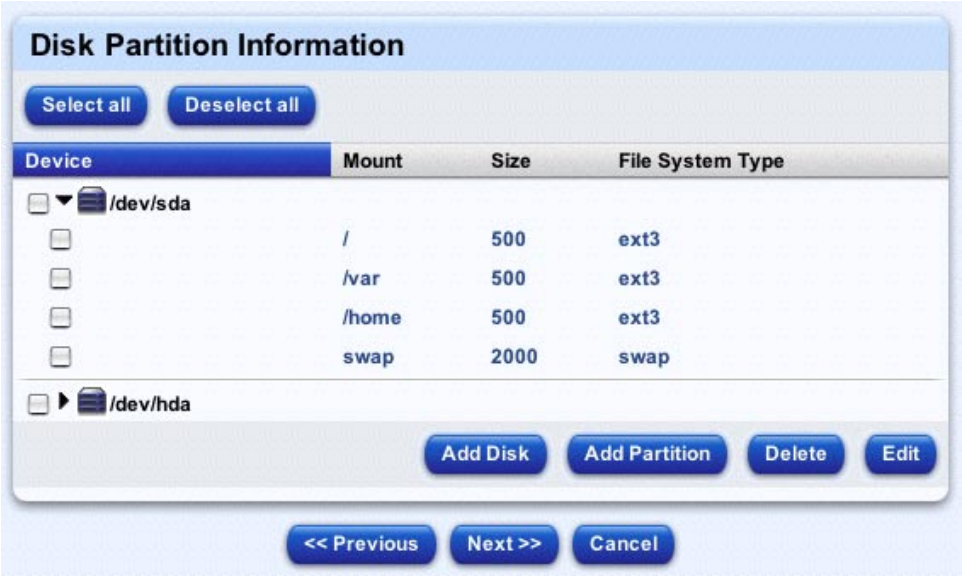


**FIGURE 2-9** Sun JDS—Sample of a Disk Partition Information table

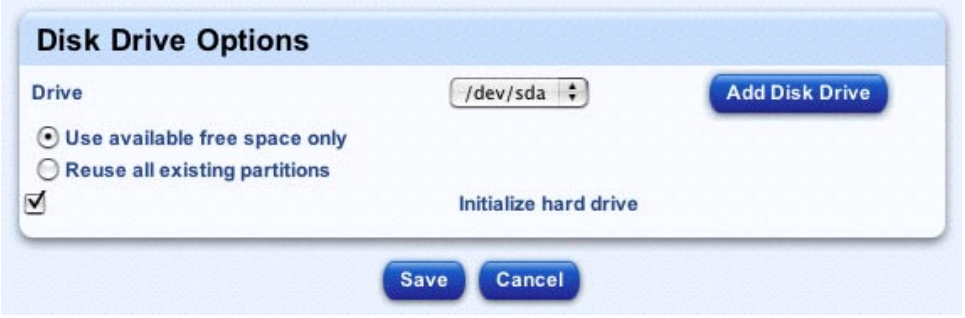


**FIGURE 2-10** Sun JDS—Disk Drive Options table

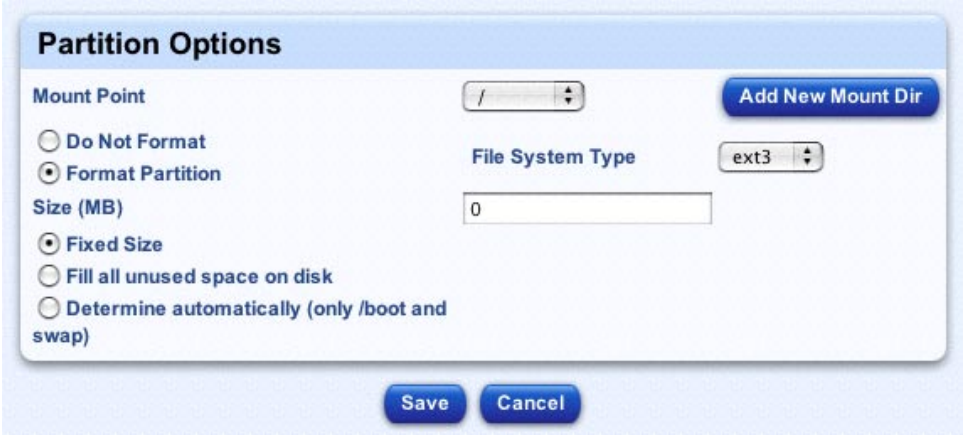


**FIGURE 2-11** Sun JDS—Partition Options table

11. **Click Next below the table.**

    The Client Configuration table appears; see FIGURE 2-12.

### Client Configuration Information

12. **You can configure the following parameters for the configuring the client.**

---

**Note –** The Authentication options are discussed in the appropriate Sun JDS user documentation.

---

**a. NIS Authentication**

- Enable NIS.
- Enter an NIS domain.
- Use broadcast to find an NIS server.
- Enter an NIS server.

**b. LDAP Authentication**

- Enable LDAP.
- Enter an LDAP server.
- Enter an LDAP base name.

**c. Proxy Service Configuration**

- Enable Proxy Services.
- HTTP Proxy.
- FTP Proxy.
- User name (if necessary).
- Password (if necessary).

13. **Click Next below the table.**

    The Client Configuration Continued table appears; see FIGURE 2-13.

14. **You can configure the following parameters.**

**a. Configuration Agent Settings**

- Enable Configuration Agent Settings.
- Enter a Host Name.
- Enter a port.
- Enter the root location.

15. **Click Next below the table.**

    The X Config Options table appears, see FIGURE 2-14.

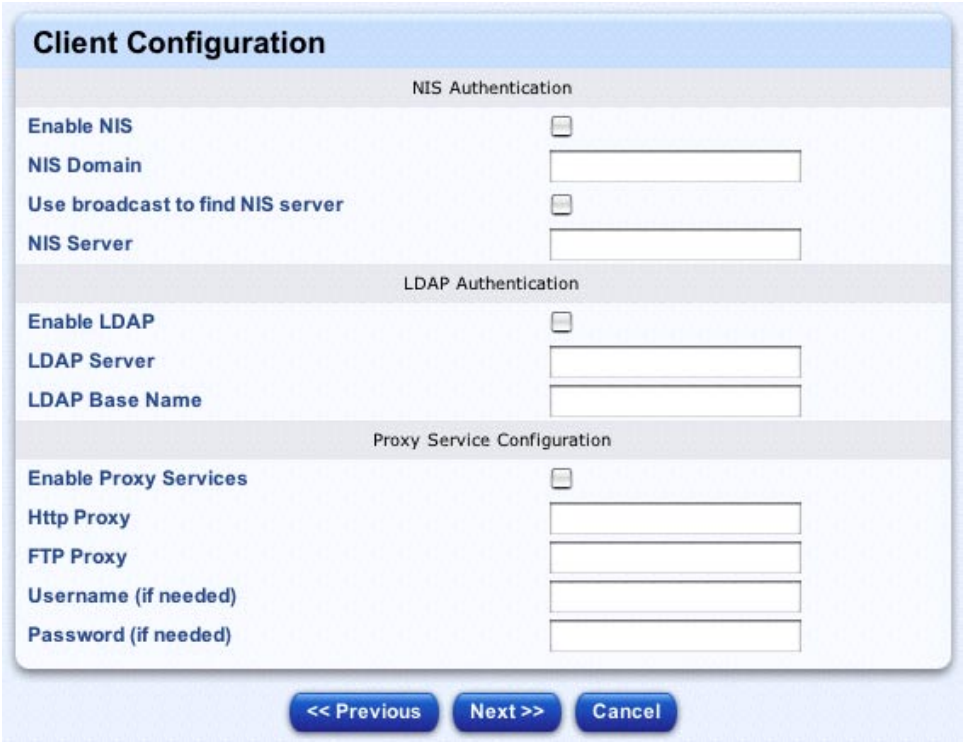


**FIGURE 2-12** Sun JDS—Client Configuration table

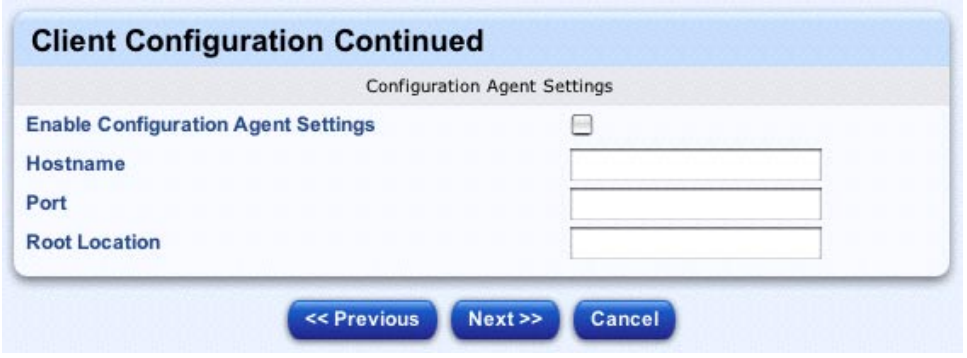


**FIGURE 2-13** Sun JDS—Client Configuration Continued table

### X Window Configuration

16. **You can configure the following parameters:**
    - Click the radio button to select one of the three options:
      - Automatically Detect X11 Settings
      - Do Not Configure X11 Settings
      - Manually Configure X11 Settings

---

**Note –** You configure the following settings only if you choose to configure the X11 settings manually.

---

- Click the check box to enable 3D support (if possible).
- Set the color depth and resolution of the monitor.
- Select a monitor vendor from the scrolling window.
- Select a monitor from the scrolling window.

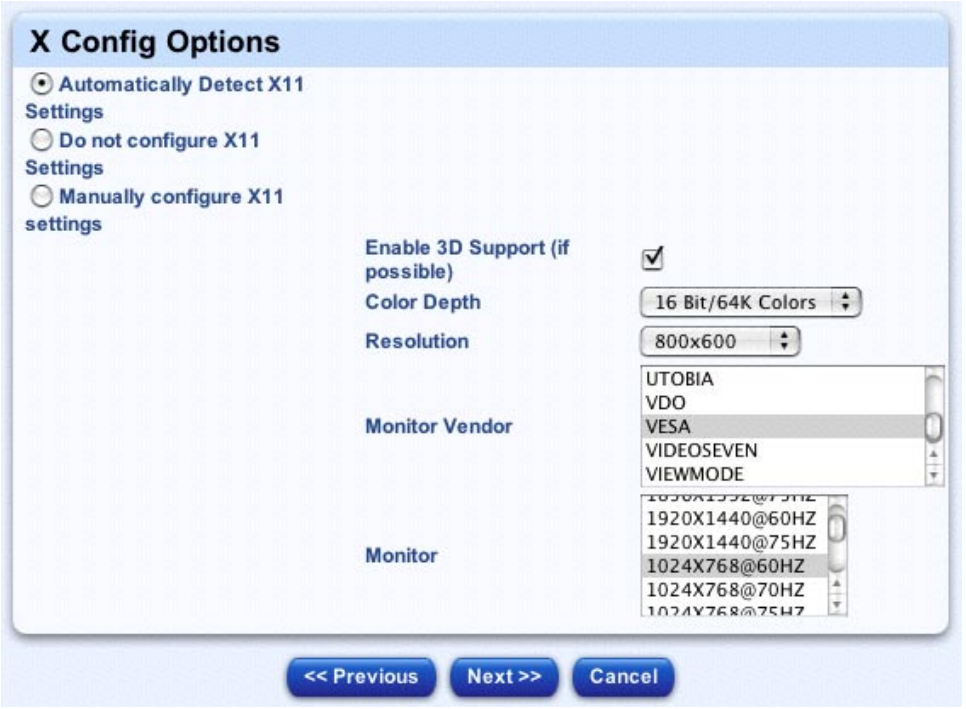


**FIGURE 2-14** Sun JDS—X Config Options table

17. **Click Next below the table.**

The Edit Custom Script Options table appears; see FIGURE 2-15.

### Custom Script Options

The table contains a number of custom scripts that you can add to the profile.

---

**Note –** If you want to upload other custom scripts to this table, you must do so before you click Save at the bottom of the Edit Custom Script Options table.

---

---

**Note –** The custom script `sun_client_dhcp.sh` sets the client's DHCP settings to certain set of defaults.

---

If you do not want to upload a custom script, go to Step 23.

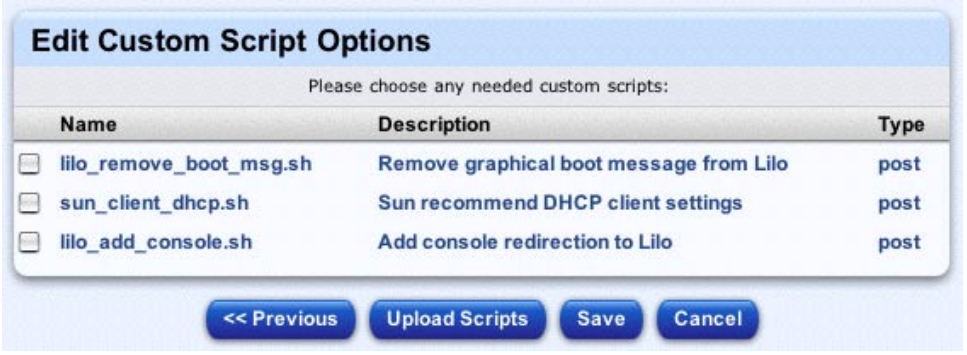


**FIGURE 2-15** Sun JDS—Edit Custom Script Options table

To upload a custom script to the Edit Custom Script Options table:

18. **Click Upload Scripts.**

The Upload User-defined Custom Scripts table appears.

19. **Click Add.**

The Add a New Script From Local Filesystem table appears; see FIGURE 2-16.

20. **Enter the following information:**
    - Enter the path and file name for the script file, or click the button to locate the file.
    - Enter a description of the script.
    - Select the type of script:
        - Pre: script runs before the installation (for example, drivers).
        - Post: script runs after the installation.
        - Postnochroot: runs after the installation but does not require to be run as `root`.
    - Select the type of system on which the script can run. Use the Add or Remove buttons to move a script between the scrolling windows.

21. **Click Upload Now.**

    The Task Progress dialog appears.

    When finished uploading, the custom script appears in the Upload User-defined Custom Scripts table.

    You can add another script, modify a script or delete a script from this table.

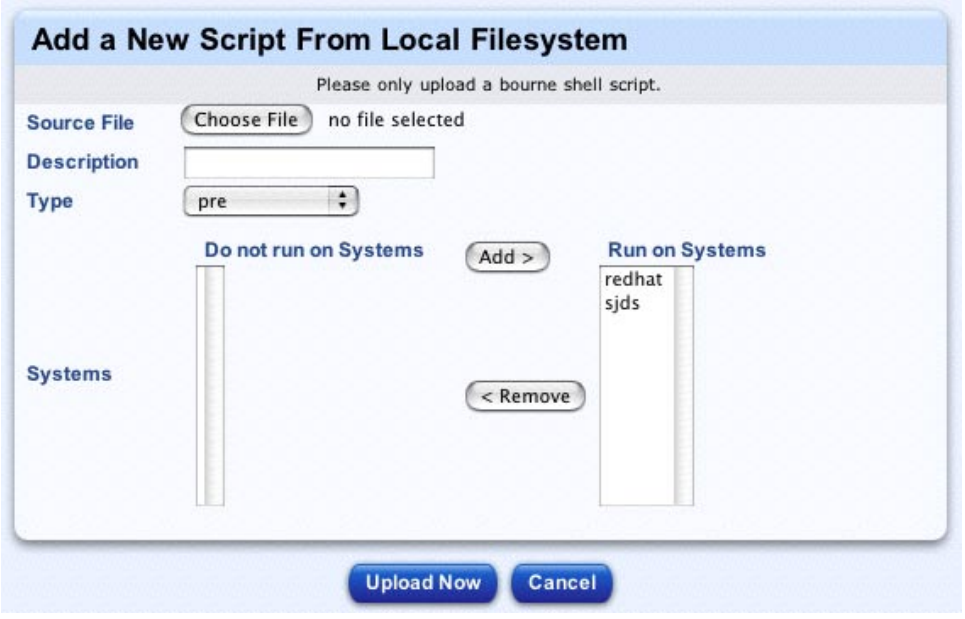


**FIGURE 2-16** Sun JDS—Add a New Script From Local Filesystem table

22. **Click Previous to return to the Edit Custom Script Options table.**

23. **Click the check box(es) to select the custom script(s) you want to add to the profile.**

---

**Note –** If you are building a machine through a serial console and you selected a boot loader in Step 7, you should now also add the corresponding Grub customized scripts.

If you do not, you will not see the boot messages and install messages on console.

---

24. **Click Save.**

The Task Progress dialog appears.

## Red Hat profile

---

**Note –** There are a large number of UI screens in this procedure with several parameters to configure on each screen.

---

To add a Red Hat profile:

1. **Select AllStart > Profiles.**

   The AllStart Profiles table appears.

2. **Click Add at the bottom.**

   The Select System Type table appears.

3. **Select the type `redhat`.**

4. **Click Continue at the bottom.**

   The Add AllStart Profile table appears; see FIGURE 2-17.

5. **Configure the following parameters:**

- Profile Name. Enter a unique, descriptive name for this profile.

---

**Note –** It is important to use a unique, descriptive name for each profile. The system differentiates the profiles according to this name.

---

- Profile Description. Enter a description of this profile.
- Default language.
- Type of Keyboard.
- Type of Mouse.
- Emulate a 3-button mouse. Click this check box to enable the emulation a three-button mouse with a two-button mouse.
- Time Zone. From the pull-down menu, select time zone in which the hosts that you will configure are located.
- Root Password. Enter a root password for the hosts that will use this profile and confirm the password.
- Reboot System After Installation. Click this check box to have the hosts reboot once the payload and profile have been installed.


**FIGURE 2-17** Red Hat—Add AllStart Profile table

6. **Click Next below the table.**

   The Edit Boot Loader Options table appears; see FIGURE 2-18.

7. **Configure the following parameters for the boot loader:**

---

**Note –** If you are building a machine through a serial console and you select Grub or LILO as the boot loader, you should also add the corresponding Grub or LILO customized scripts at the end of this procedure. You do this in Step 23.

---

- Install Boot Loader. Click this check box to install a bootloader.
- Choose Boot Loader. From the pull-down menu, select a bootloader: LILO or GRUB.
- Kernel Parameters.
- If you selected the GRUB boot loader:
  - Enter a GRUB password.
  - Click the check box to encrypt the GRUB password.
- If you selected the LILO boot loader:
  - Click to the first check box to use linear mode.
  - Click to the second check box to force the installation to use `lba32` mode.

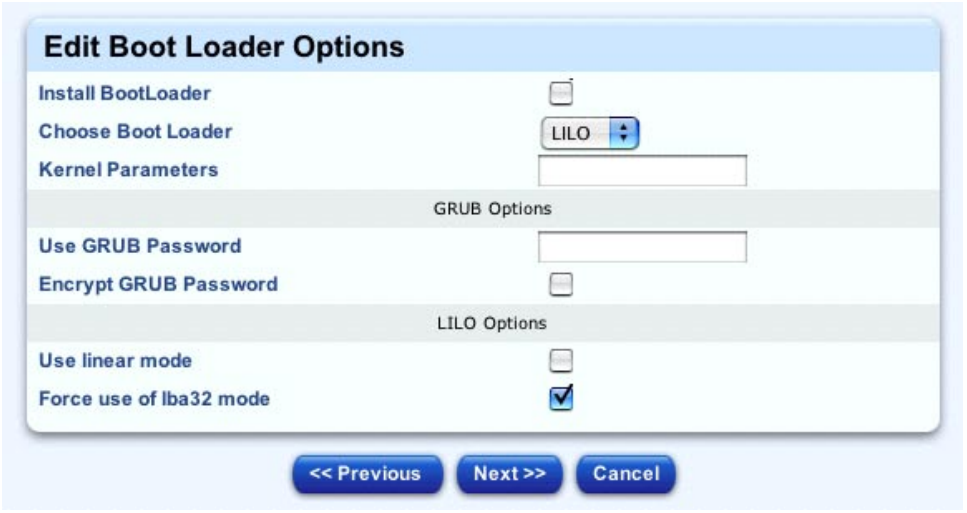


**FIGURE 2-18** Red Hat—Edit Boot Loader Options table

8. **Click Next below the table.**

   The Partitions table appears; see FIGURE 2-19.

9. **Click the radio buttons to configure the settings in each of the three sections.**

   - Master Boot Record.
     - Clear the Master Boot Record.
     - Do not clear the Master Boot Record.
   - What Do You Want Done With Existing Partitions.
     - Remove all existing partitions.
     - Remove existing Linux partitions.
     - Preserve existing partitions.
   - What Do You Want Done With Disk Label.
     - Initialize the disk label.
     - Do not initialize the disk label.


**FIGURE 2-19** Red Hat—Partitions table

10. **Click Next below the table.**

    The Disk Partition Information table appears; see FIGURE 2-20.

### Disk Partition Information

11. **Another selector window appears.**

    For each partition, the selector displays:

    - Device/Partition Number.
    - Mount Point.
    - Type.
    - Size (in MB).
    - Actions column.

12. **In the selector, you can add, edit or delete a partition.**

---

**Note –** This step is an iterative process. You can add, edit or delete as many partitions as you want in this selector window. Once the partitions are configured, click Next to move on to the Authentication options.

---

---

**Note –** At a minimum, you must define the `/root` partition and at least one swap partition.

---

    a. **To add a new partition, click Add Disk Partition below the selector.**

       The Partition Options table appears; see a sample in FIGURE 2-21. You can configure the following parameters:

       - Mount Point.
       - File System Type.
       - Size of the Partition (MB).

       To add a new Mount directory to the pull-down menu, click Add New Mount Dir on the right. The Define A New Mount Point table appears. Enter the name for the new mount and click Save. The Partition Options table reappears, with the new mount point displayed.

       You can also configure these additional options:

       - Limiting the partition to a fixed size.
       - Allowing a partition to use all unallocated space on the hard disk drive (HDD)
       - Allowing the partition to grow to maximum size and setting the maximum size (in MB).
       - Making a partition on a specific drive and identifying the drive.

       Click Save to continue.

**b. To edit a partition, click the *pencil* icon for the partition in the Actions column.**

The Partition Options table appears. You can configure the same parameters as those for adding a new partition. See the procedure in Step a.

**c. To delete a partition, click the *delete* icon for the partition in the Actions column.**

The selector refreshes with the partition(s) removed from the list.

---

**Note –** There is no Confirm Deletion dialog for this task, so ensure that you choose the correct partition to delete.

---

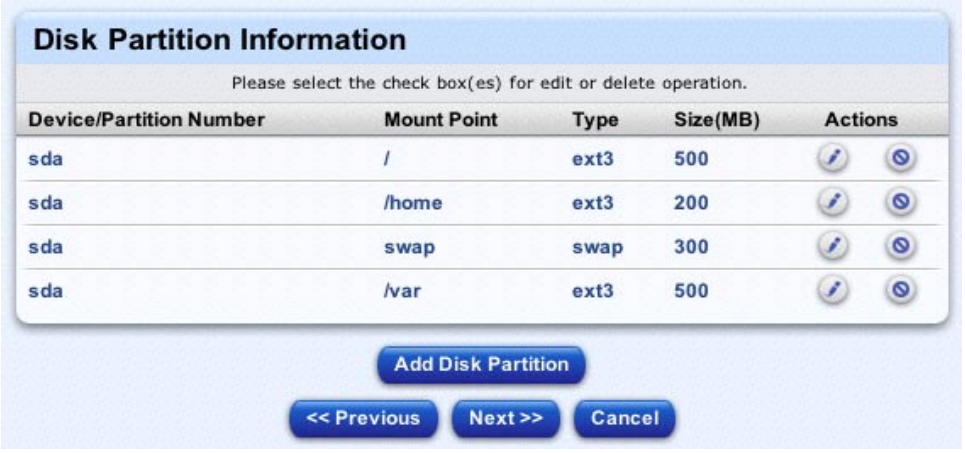


**FIGURE 2-20** Red Hat—Sample of a Disk Partition Information table

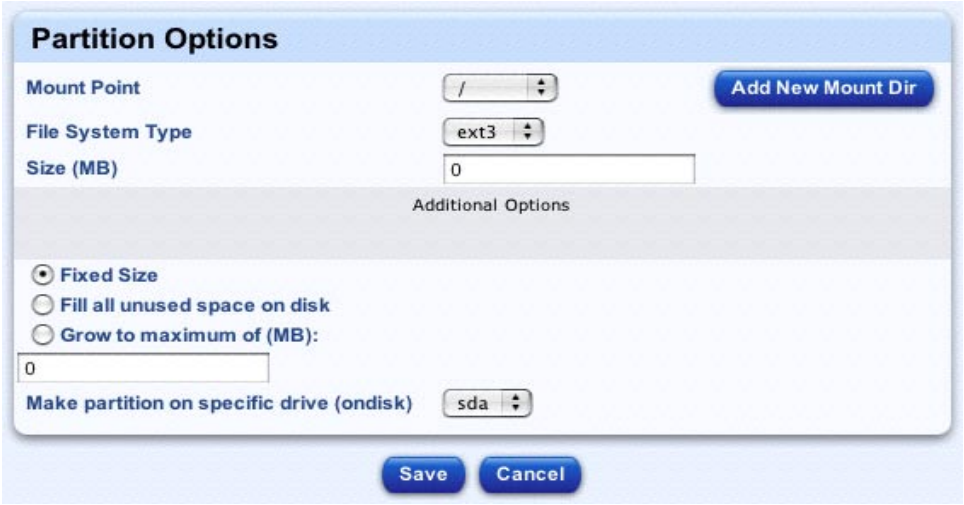


**FIGURE 2-21** Red Hat—Partition Options table

13. **Click Next below the table.**

    The Edit Authentication Information table appears; see FIGURE 2-22.

### Authentication Information

14. **You can configure the following parameters for different types of authentication.**

---

**Note –** All of these options are discussed in the appropriate Red Hat documentation. For more information, refer to `http://www.redhat.com/docs/`.

---

**a. Shadow passwords and MD5 checksums**

- Shadow Passwords option is enabled by default.
- Enable MD5 option is enabled by default.

**b. NIS Authentication**

- Enable NIS.
- Enter an NIS domain.
- Use broadcast to find an NIS server.
- Enter an NIS server.

**c. LDAP Authentication**

- Enable LDAP.
- Enter an LDAP server.
- Enter an LDAP base name.

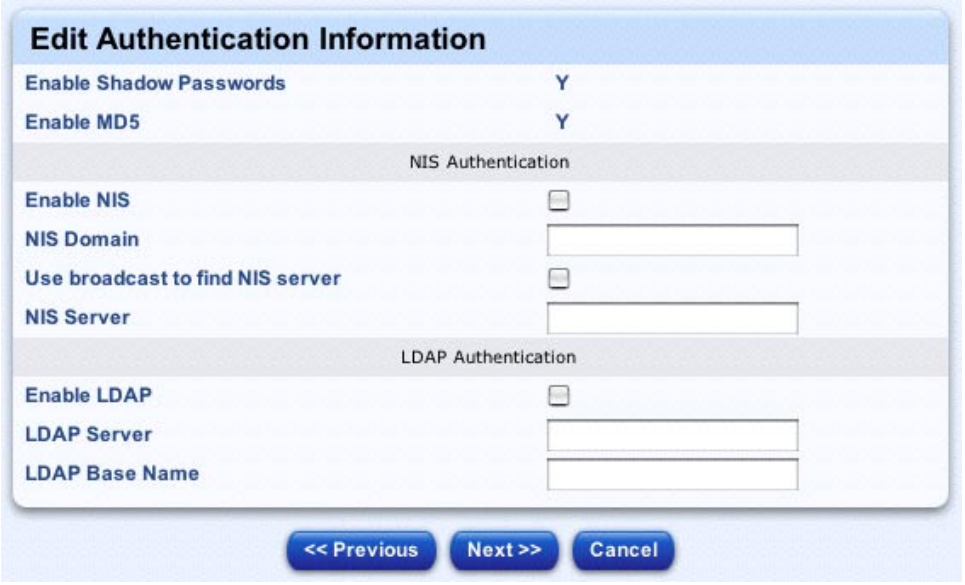


**FIGURE 2-22** Red Hat—Edit Authentication Information table

**15. Click Next below the table.**

The X Config Options table appears, see FIGURE 2-23.

### X Window Configuration

16. **You can configure the following parameters:**

- Click the check box to enable the X Window System.

---

**Note –** If the X Window System is not enabled, then all of the following parameters in this table are disabled.

---

- Set the color depth and resolution of the monitor.
- Select a default desktop from the pull-down menu: GNOME or KDE.
- Click the check box to have the X Window System start up on boot.
- Select a video card from the pull-down menu.
- Select the amount of RAM available for the video card from the pull-down menu.
- Select a monitor from the pull-down menu.
- Alternatively, you can simply specify the Horizontal Sync and Vertical Sync values for your monitor.

  Click the check box to enable this option and enter the hsync and vsync values in the fields.

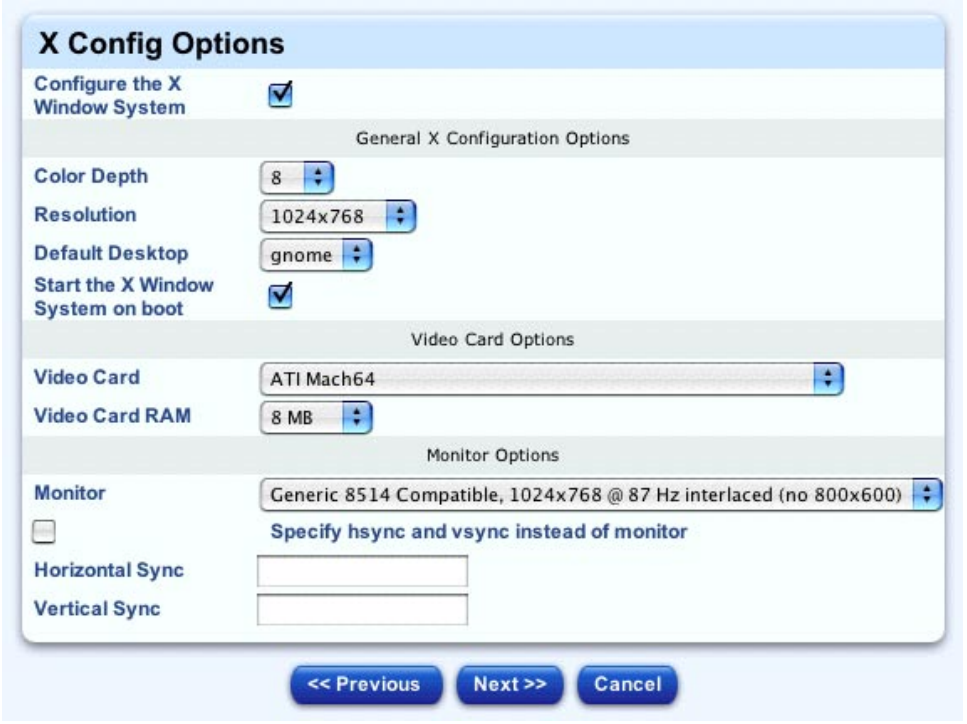


**FIGURE 2-23** Red Hat—X Config Options table

17. **Click Next below the table.**

The Edit Custom Script Options table appears; see FIGURE 2-24.

### Custom Script Options

The table contains a number of custom scripts that you can add to the profile.

---

**Note –** If you want to upload other custom scripts to this table, you must do so before you click Save at the bottom of the Edit Custom Script Options table.

---

If you do not want to upload a custom script, go to Step 23.


**FIGURE 2-24** Red Hat—Edit Custom Script Options table

To upload a custom script to the Edit Custom Script Options table:

18. **Click Upload Scripts.**

The Upload User-defined Custom Scripts table appears.

You can also edit or delete custom scripts that are displayed in this table.

19. **Click Add.**

The Add a New Script From Local Filesystem table appears; see FIGURE 2-25.

20. **Enter the following information:**
    - Enter the button to locate the file.
    - Enter a description of the script.
    - Select the type of script:
        - Pre: script runs before the installation (for example, drivers).
        - Post: script runs after the installation.
        - Postnochroot: runs after the installation but does not require to be run as `root`.
    - Select the type of system on which the script can run. Use the Add or Remove buttons to move a script between the scrolling windows.

21. **Click Upload Now.**

    The Task Progress dialog appears.

    When finished uploading, the custom script appears in the Upload User-defined Custom Scripts table.

    You can add another script, edit a script or delete a script from this table.

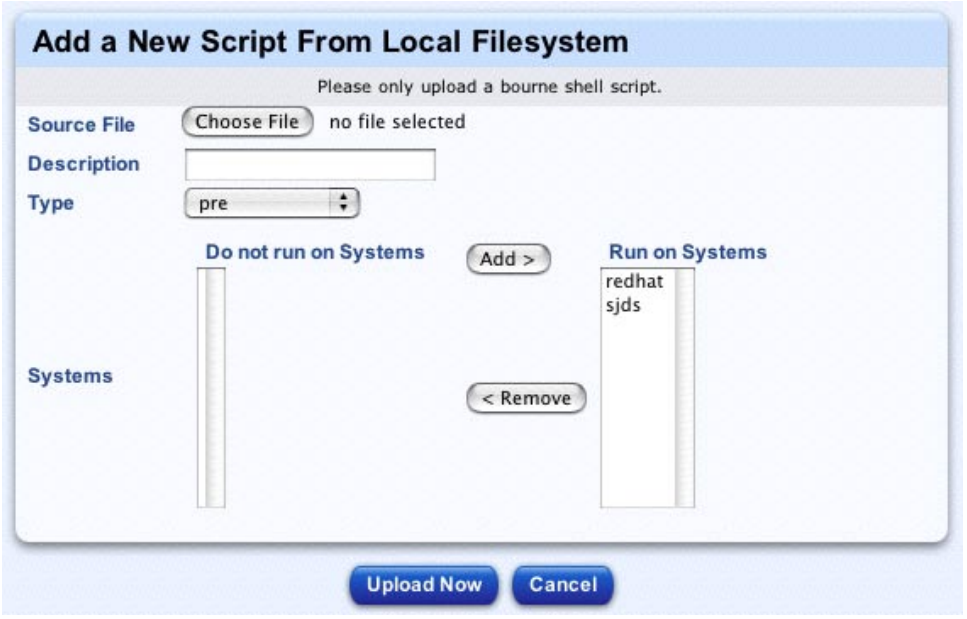


**FIGURE 2-25** Red Hat—Add a New Script From Local Filesystem table

22. **Click Previous to return to the Edit Custom Script Options table.**

23. **Click the check box(es) to select the custom script(s) you want to add to the profile.**

---

**Note –** If you are building a machine through a serial console and you selected Grub or LILO as the boot loader in Step 7, you should now also add the corresponding Grub or LILO customized scripts.

If you do not, you will not see the boot messages and install messages on console.

---

24. **Click Save.**

The Task Progress dialog appears.

# Viewing a Profile

To view the information on a profile:

1. **Select AllStart > Profiles.**

   The AllStart Profiles table appears.

2. **Click to highlight a profile.**

3. **Click View.**

   The Detailed Profile View table appears, showing all of the parameters for the profile.

4. **Click Done to return to the AllStart Profiles table.**

# Modifying a Profile

To modify a profile:

1. **Select AllStart > Profiles.**

   The AllStart Profiles table appears.

2. **Click to highlight a profile.**

3. **Click Modify at the bottom right.**

   The Modify AllStart Profiles table appears, and you then proceed through the same set of screens as for adding a profile.

   For a Sun JDS profile, see "Sun Java Desktop System profile" on page 25.

   For a Red Hat profile, see "Red Hat profile" on page 37.

# Deleting a Profile

To delete a profile from the AllStart Profiles table:

---

**Note –** If a profile is referenced to a client, you cannot delete the profile. You first need to modify or delete the client in question.

---

1. **Select AllStart > Profiles.**

   The AllStart Profiles table appears.

2. **Click to highlight a profile(s). You can also click Select All at the top to choose all profiles in the list.**

3. **Click Delete at the bottom right.**

   - If the profile(s) is referenced to a client, you cannot delete it.
   - If the profile(s) is not referenced to a client, a dialog appears, asking you to confirm the deletion.

4. **Click Delete.**

   The Task Progress dialog appears.

# Clients

You can add, view, modify or delete a client. You can also enable or disable a client.

FIGURE 2-26 shows a sample of an AllStart Clients table. the coumns are Enabled, Client MAC address, Profile Name, Payload Name, Build Phase and Built Time.


**FIGURE 2-26** Sample of an AllStart Clients table

## Adding a Client

You can add a new client manually, add a new AutoDiscovery client, choose a new client from the list of managed hosts already in the Sun Control Station or import a list of clients in an XML-format file.

If you want to use this client or clients immediately, ensure that you enable each of the clients. You must also enable the DHCP settings; for more information, see "Modifying the DCHP Settings" on page 66.

---

**Note –** Once you have added a client to the AllStart Clients table, you must enable the client.

If you do not enable the client, the AllStart module will not provide the payload to the server that corresponds to this client MAC address and IP address when the server netboots.

---

**Note –** If you select only one OS distribution to display in your AllStart preferences, then the Select System Type selector will not appear in the AllStart procedures. You will go directly into the procedure.

For more information, see "Advanced" on page 72.

## Add a New Client

To add a new client:

1. **Select AllStart > Clients.**

   The AllStart Clients table appears.

2. **Click Add at the bottom.**

   The Select System Type table appears.

3. **Select the type: `sjds` or `redhat`.**

4. **Click Continue at the bottom.**

   The Create AllStart Client table appears; see FIGURE 2-27.

5. **Configure the following parameters:**

**Note –** You need to enter the MAC address of the network interface card (NIC) over which the payload and profile will be installed.

- MAC Address. Enter the MAC address of the new client.
- Install Type. Select the type of install: NFS or HTTP.
- Serial Console. Select the console port to use.
- Serial Console Baud. Select a baud rate for the console.
- Payload. Select the name of the payload to install.
- Profile. Select the name of the profile to install.

6. **Click Next below the table.**

   The Configure Install Boot Information table appears; see FIGURE 2-28.

   These options to allow for different boot configurations during the installation.

7. **Configure the following parameters:**
   - Boot Type.
   - Kernel parameters.

---

**Note –** When you are creating a Sun JDS client, you need to specify the following kernel parameters:

For a Sun™ LX50 server: add the argument `acpi=OFF`. (This turns off the Advanced Configuration and Power Interface (ACPI) feature. )

For all white-box servers: add the argument `apm=OFF`. (This turns off the Advanced Power Managment (APM) feature.)

---

   - Install Network Device. Select a network device: `eth0` or `eth1`.

---

**Note –** On a Sun Fire™ V60x or V65x server, the installation must take place over one of the two built-in NICs.

---

   - Install IP Address. Enter the IP address of the new client.
   - Netmask.
   - Gateway.
   - Host Name.
   - Name Server.


**FIGURE 2-27** Create AllStart Client table

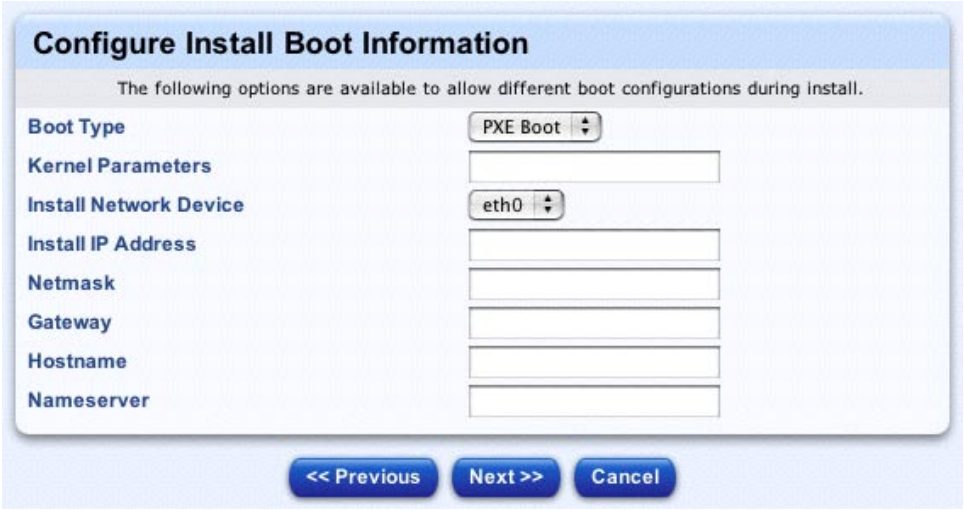


**FIGURE 2-28** Configure Install Boot Information table

8. **Click Next below the table.**

   The Network Interfaces table appears; see FIGURE 2-29.

   You can configure the information for the NICs in your client.

9. **Click Add Network Interface at the bottom.**

   The Enter Network Interface Information table appears; see FIGURE 2-30.

10. **Configure the following parameters:**

    - Network Device.
    - Network Type.
      - If you select Static, fill in the following fields as well.
      - If you select DHCP, click Save below the table.
      - If you select None, click Save below the table.
    - IP Address.
    - Netmask.
    - Gateway.
    - Host Name.
    - Name Server.

11. **Click Save below the table.**

    The Network Interfaces table refreshes with the new device added.

12. **You can now add another device or perform other operations on an existing device.**
    - To add another device, click Add Network Interface at the bottom. The Enter Network Information table appears.
    - To edit the configuration for an existing device, click the *pencil* icon in the Actions column next to that device. The Enter Network Information table appears.
    - To delete an existing device from the list, click the *delete* icon in the Actions column next to that device(s). The table refreshes with the device(s) removed.

---

**Note –** There is no Confirm Deletion dialog for this task, so ensure that you choose the correct device to delete.

---

13. **When you are finished configuring the network interfaces, click Save below the table.**

    The Task Progress dialog appears.

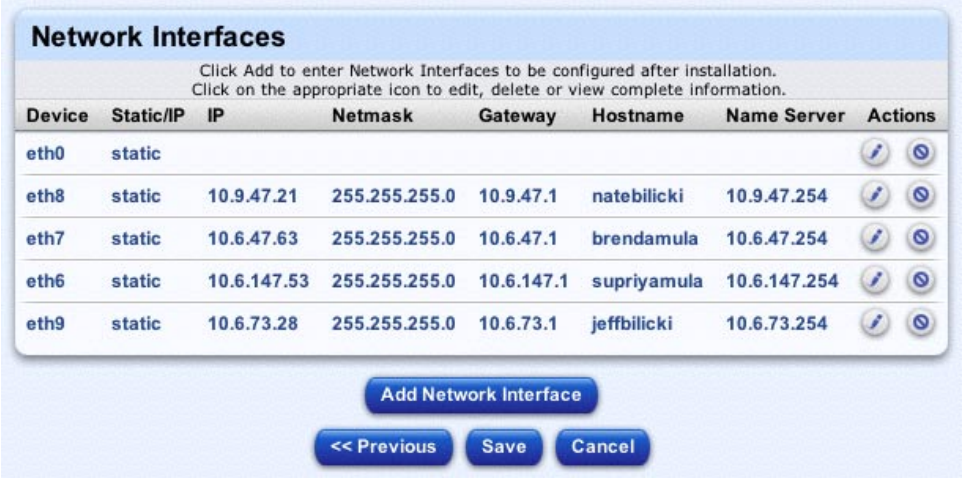


**FIGURE 2-29** Sample of a Network Interfaces table

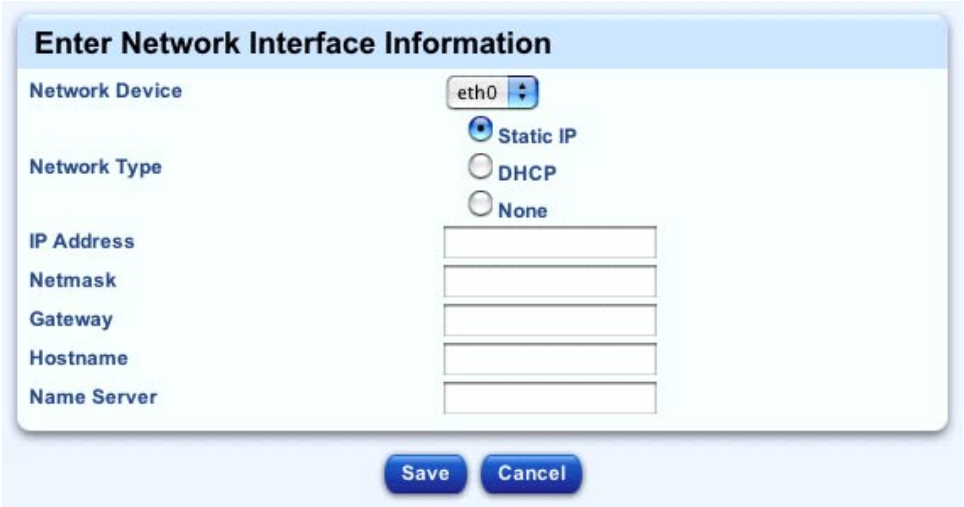


**FIGURE 2-30** Enter Network Interface Information table

## Add a New AutoDiscovery Client

---

**Note –** This option works in conjunction with "AutoDiscovery Function" on page 69. Use that procedure to specify a range of IP addresses to be used by the AutoDiscovery client(s).

---

The AutoDiscovery function allows a server to obtain an IP address from a DHCP server and retrieve a default payload for that IP address from the PXE boot server. This feature is most useful in the case where the MAC address of the client is not known.

For more information about setting up the AutoDiscovery function, see "AutoDiscovery Function" on page 69.

To add a new AutoDiscovery client:

1. **Select AllStart > Clients.**

   The AllStart Clients table appears.

2. **Click Add at the bottom.**

   The Select System Type table appears.

3. **Select the type: `sjds` or `redhat`.**

4. **Click Continue at the bottom.**

   The Create AllStart Client table appears.

5. **From the pull-down menu above the table, select Add AutoDiscovery Client.**

   The AutoDiscovery Client table appears; see FIGURE 2-31.

6. **Configure the following parameters:**

   - Client Name. (The system automatically appends the prefix `default-` to the client name.)
   - Subnets. Select the subnet on which the client resides.
   - Install Type. Select the type of install: NFS or HTTP.
   - Serial Console. Select the console port to use.
   - Serial Console Baud. Select a baud rate for the console.
   - Install Network Device. Select a network device: `eth0` or `eth1`.

   ---

   **Note –** On a Sun Fire™ V60x or V65x server, the installation must take place over one of the two built-in NICs.

   ---

   - Kernel parameters.
   - Payload. Select the name of the payload to install.
   - Profile. Select the name of the profile to install.

7. **Click Save below the table.**

   The Task Progress dialog appears.

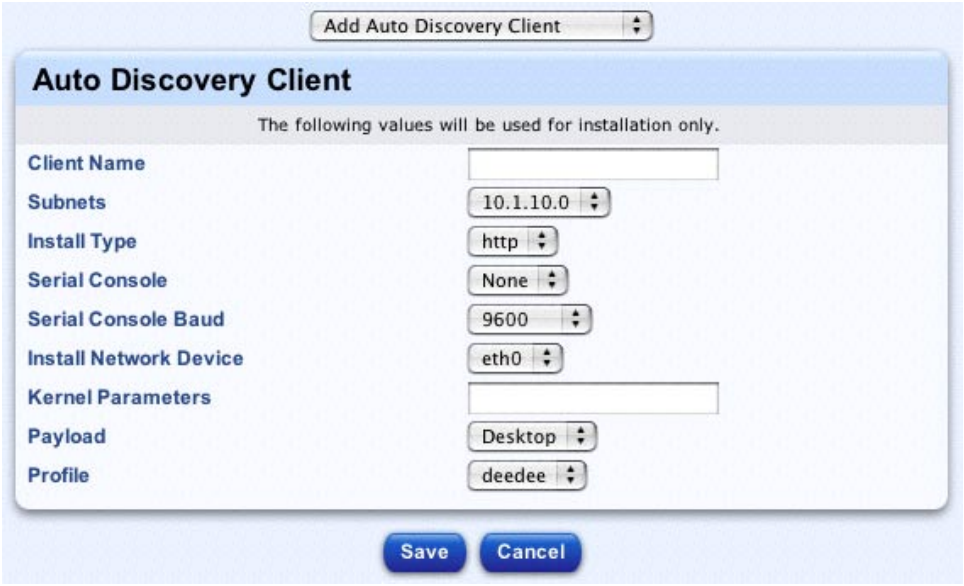


**FIGURE 2-31** AutoDiscovery Client table

## Add a Managed Host as a Client

If you have already imported a host(s) into the Sun Control Station, you can select a managed host(s) to add as an AllStart client.

To add a managed host as a client:

1. **Select AllStart > Clients.**

   The AllStart Clients table appears.

2. **Click Add at the bottom.**

   The Select System Type table appears.

3. **Select the type: `sjds` or `redhat`.**

4. **Click Continue at the bottom.**

   The Create AllStart Client table appears.

5. **From the pull-down menu above the table, select Add a Managed Host as a Client.**

   The Add AllStart Client from Managed Host table appears.

6. **Click to highlight a managed host.**

   You can only add one managed host at a time.

7. **Click Add at the bottom right.**

   The Create AllStart Client table appears.

8. **Configure the following parameters:**

---

**Note –** A managed host must be on the network and thus already has an IP address. The MAC address field is already populated. You cannot change these two parameters.

---

- Install Type. Select the type of install: NFS or HTTP.
- Serial Console. Select the console port to use.
- Serial Console Baud. Select a baud rate for the console.
- Payload. Select the name of the payload to install.
- Profile. Select the name of the profile to install.

9. **Click Save below the table.**

   The Task Progress dialog appears.

## Import a List of Clients

You can also import a list of clients in an XML-format file. For the correct format, see "XML Format for a List of Clients" on page 59.

To import a list of clients file:

1. **Select AllStart > Clients.**

   The AllStart Clients table appears.

2. **Click Add at the bottom.**

   The Select System Type table appears.

3. **Select the type: `sjds` or `redhat`.**

4. **Click Continue at the bottom.**

   The Create AllStart Client table appears.

5. **From the pull-down menu above the table, select Add Clients from a File.**

   The Local Client Definitions From A File table appears.

6. **Enter the path and file name for the XML file, or click the button to locate it.**

7. **Click Create Clients below the table.**

   The Task Progress dialog appears.

### XML Format for a List of Clients

The file containing the list of clients must be in the XML format shown in the following sample file.

The file must end with the `.xml` extension.

This sample file contains the information for two clients: the first client has two network devices, one on DHCP and the other on a static IP address; the second client has one network device on a static IP address.

### Sample file

```
<clients>
    <client>
        <mac value = “00:03:47:D5:74:7A”/>
        <install_type value = “http”/>
        <console value = "none"/>
        <console_baud value = “9600”/>
        <payload value = “sjds”/>
        <profile value = “sjds”/>
        <network>
            <device value = “eth0”/>
            <type value = “dhcp”/>
        </network>
        <network>
            <device value = “eth1”/>
            <bootproto value = “static”/>
            <ip value = “192.168.0.3”/>
            <netmask value = “255.255.255.0”/>
            <gateway value = “192.168.0.1”/>
            <hostname value = “bmula3.sfbay.sun.com”/>
            <nameserver value = “192.168.0.1”/>
        </network>
        <boot>
            <boottype value = “pxe”/>
            <device value = “eth0”/>
            <ip value = “192.168.0.3”/>
            <netmask value = “255.255.255.0”/>
            <kernel_params value = “acpi=off”/>
            <hostname value = “bmula3.sfbay.sun.com”/>
            <gateway value = “192.168.0.1”/>
        </boot>
    </client>
    <client>
        <mac value = “00:10:4B:0F:93:75”/>
        <install_type value = “http”/>
        <console value = “none”/>
        <console_baud value = “9600”/>
        <payload value = “sjds”/>
        <profile value = “sjds”/>
        <network>
            <device value = “eth0”/>
            <bootproto value = “static”/>
            <ip value = “10.1.10.60”/>
            <netmask value = “255.255.255.0”/>
            <gateway value = “10.1.10.1”/>
            <hostname value = “bmula6.sfbay.sun.com”/>
            <nameserver value = “10.1.10.1”/>
        </network>
        <boot>
            <boottype value = “pxe”/>
            <device value = “eth0”/>
            <ip value = “10.1.10.60”/>
            <netmask value = “255.255.255.0”/>
            <kernel_params value = “acpi=off”/>
            <hostname value = “test.central.sun.com”/>
            <gateway value = “10.1.10.1”/>
        </boot>
    </client>
 </clients>
```

# Enabling a Client

The first column in the AllStart Clients table is Enabled. If the client is enabled, there is an “Y” in this column; if it is not enabled, there is an “N”.

To enable a client that is currently not enabled:

1. **Select AllStart > Clients.**

   The AllStart Clients table appears.

2. **Click to highlight a client(s). You can also click Select All at the top to choose all clients in the list.**

3. **Click Enable at the bottom.**

   The Task Progress dialog appears.

   The AllStart Clients table now displays an “Y” in the Enabled column for this client(s).

# Disabling a Client

The first column in the AllStart Clients table is Enabled. If the client is enabled, there is an “Y” in this column; if it is not enabled, there is an “N”.

To disable a client that is currently enabled:

1. **Select AllStart > Clients.**

   The AllStart Clients table appears.

2. **Click to highlight a client(s). You can also click Select All at the top to choose all clients in the list.**

3. **Click Disable at the bottom.**

   The Task Progress dialog appears.

   The AllStart Clients table now displays an “N” in the Enabled column for this client(s).

# Viewing a Client

To view the information for a client:

1. **Select AllStart > Clients.**

   The AllStart Clients table appears.

2. **Click to highlight a client.**

3. **Click View at the bottom right.**

   The View AllStart Client table appears, displaying the following information:

   - MAC Address.
   - IP Address.
   - Client Enabled (Y/N).
   - Install Network Device.
   - Serial Console.
   - Serial Console Baud.
   - Boot Loader.
   - Kernel Parameters.
   - Install Type.
   - Name of the Payload.
   - Name of the Profile.
   - Device Information.

4. **Click Done at the bottom to return to the AllStart Clients table.**

# Modifying a Client

To modify a client:

1. **Select AllStart > Clients.**

   The AllStart Clients table appears.

2. **Click to highlight a client.**

3. **Click Modify at the bottom right.**

   The tables particular to the type of client you added appear and can be modified.

   For example, if you want to modify an AutoDiscovery client, the AutoDiscovery Client table appears. If you want to modify a client that was added as a single new client, the Modify AllStart Client table appears.

   Proceed throught the screens as you would for adding a client. For explanations of the screens that appear, refer to the Adding a Client procedure that corresponds to the type of client that you want to modify.

   See "Adding a Client" on page 50.

# Deleting a Client

To delete a client:

1. **Select AllStart > Clients.**

   The AllStart Clients table appears.

2. **Click to highlight a client(s). You can also click Select All at the top to choose all clients in the list.**

3. **Click Delete at the bottom right.**

---

**Note –** If the client is currently enabled, it is automatically disabled.

---

A dialog appears, asking you to confirm the deletion.

4. **Click Delete.**

   The Task Progress dialog appears.

   The client is removed from the AllStart Clients table.

# Building a Client

Once you have created a client and enabled it in the control-station UI, you are ready to install the payload and profile on the client.

---

**Note –** The client entry must be enabled in the AllStart Clients table for the build operation to succeed.

---

To build your client(s):

1. **Configure your client(s) to boot from the network.**
2. **Reboot the client(s).**

   This causes the client(s) to pull the payload and profile from the Sun Control Station.

---

**Note –** The installation is not an active "push" operation from the Sun Control Station to the client. The client must "pull" the payload and profile from the control station; the client receives a payload and profile according to the client entry in the AllStart Clients table.

---

# Viewing the Build Status of a Client

You can view the status of a client that AllStart is currently building.

To view the build status of a client:

1. **Select AllStart > Clients.**

   The AllStart Clients table appears.
2. **Click to highlight a client(s). You can also click Select All at the top to choose all clients in the list.**
3. **Click Build Status at the bottom right.**

   **The View AllStart Client table appears. For a client, the table shows the name of the payload, the phase in which the build is currently, a description of an error that might appear and the amount of time required for the build.**
4. **Click Done at the bottom to return to the AllStart Clients table.**

# Service

You can view the settings for the following services:

- DHCP.
- NFS.
- HTTP.

NFS and HTTP must be enabled at all times. You cannot disable these two services.

You can modify the DHCP settings.

## Viewing DCHP Information

To view the current DHCP information:

1. **Select AllStart > Services.**

   The Current Service Settings table appears; see FIGURE 2-32.

2. **Click View DHCP Info below the table.**

   The Additional DHCP Settings table appears. For each entry, the table shows the network the network mask and the range of IP addresses.

3. **Click to highlight an entry.**

4. **Click Details at the bottom right.**

   The Detailed DHCP Settings table appears. This table shows the following information:

   - Network.
   - Netmask.
   - IP Range.
   - Router.
   - DNS Server.
   - DNS Server 2.
   - DNS Server 3.
   - Domain.
   - Domain 2.

5. **Click Done to return to the Additional DHCP Settings table.**

6. **Click Previous to return to the Current Service Settings table.**


**FIGURE 2-32** Current Service Settings table

# Modifying the DCHP Settings

To modify the DHCP settings:

1. **Select AllStart > Services.**

   The Current Service Settings table appears.

2. **Click Modify below the table.**

   The Modify Service Settings table appears.

---

**Note –** NFS and HTTP cannot be disabled.

---

3. **You can configure the following settings.**
   - DHCP Enabled: click the check box to enable or disable DHCP service.
   - DHCP Interface: select `eth0` or `eth1` from the pull-down menu.

4. **If you want to modify the DHCP information, click Modify DHCP Info below the table.**

   The Modify DHCP Settings selector window appears. In this window, you can add new DHCP information, modify existing DHCP information or delete DHCP information.

---

**Note –** If you make changes to the DHCP information, you must click Save at the end; otherwise, your changes will not take effect.

---

### Add New DHCP Information

---

**Note –** When choosing a low-end and high-end IP address for a range of addresses in the Modify DHCP Settings page:

a) The IP address of the Sun Control Station server cannot fall within the range of IP addresses.

b) The broadcast address for the network (for example, 192.168.0.255) cannot fall within the range.

c) You cannot enter the same IP address for both the low-end and high-end of the range.

d) Certain versions of DHCP do not use the first nor the last IP address in the range listed, so a valid range containing only one IP address would look like, for example: `10.1.10.100 – 10.1.10.102`.

---

5. **Click Add at the bottom right.**

   The Add New DHCP Settings table appears; see FIGURE 2-33. Fill in the following information.

   - Network.
   - Netmask.
   - IP Range (enter the low IP address in the first field and the high IP address in the second field).
   - Router.
   - DNS Server.
   - DNS Server 2.
   - DNS Server 3.
   - Domain.
   - Domain 2.

6. **Click Save.**

   The Modify DHCP Settings selector window appears, with an entry for the new DHCP information.

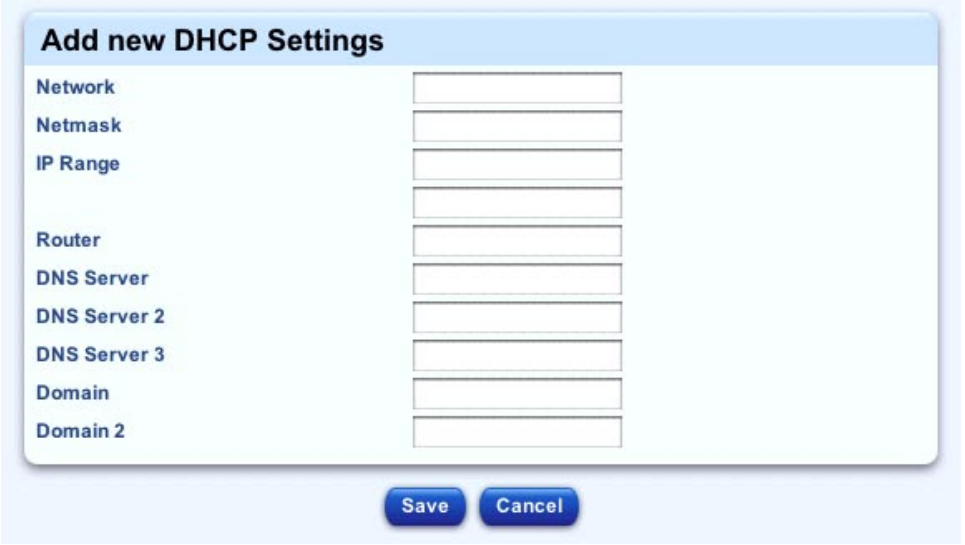


**FIGURE 2-33** Add New DHCP Settings table

### Modify DHCP Information

7. **Click to highlight an entry in the table.**
8. **Click Edit at the bottom right.**

---

**Note –** Refer to the Note under ""Add New DHCP Information" on page 67.

---

The Modify DHCP Settings table appears. The Network and Netmask information is already populated.

Edit the following information.

- IP Range (enter the low IP address in the first field and the high IP address in the second field).
- Router.
- DNS Server.
- DNS Server 2.
- DNS Server 3.
- Domain.
- Domain 2.

9. **Click Save.**

   The Modify DHCP Settings selector window appears.

### Delete DHCP Information

10. **Click to highlight an entry in the table.**
11. **Click Delete at the bottom right.**

    A dialog appears, asking you to confirm the deletion.

12. **Click Delete.**

    The Task Progress dialog appears.

    The entry for the DHCP information is removed from the Modify DHCP Settings selector window.

13. **Click Previous to return to the Modify Service Settings table.**
14. **If you have made any changes, click Save below the table.**

---

**Note –** If you do not click Save at this stage, your changes to the DHCP information will not be saved and will not take effect.

---

The Task Progress dialog appears.

# AutoDiscovery Function

---

**Note –** This function works in conjunction with "Add a New AutoDiscovery Client" on page 55. Use that procedure to create an AutoDiscovery client(s).

---

The AutoDiscovery function in the AllStart control module allows a server to obtain an DHCP address from the Sun Control Station and retrieve a default payload and profile for that DHCP address from the PXE boot server. This feature is most useful in the case where the MAC address of the client is not known.

First, you first specify a range of IP addresses in the DHCP table. Second, you create an AutoDiscovery client and enable the client. Third, you netboot the host machine; the host then obtains its network information, payload and profile from the AllStart module.

## Configuring a Client for AutoDiscovery

**Note –** This procedure assumes that you have already configured a DHCP server and enabled the DHCP service under AllStart > Services.

If you have not, refer to "Service" on page 65.

To configure a client for AutoDiscovery:

### Specify Range of IP Addresses

1. **Select AllStart > Services.**

   The Current Service Settings table appears.

2. **Click Modify below the table.**

   The Modify Service Settings table appears.

3. **Click the check box DHCP Enabled.**

4. **Select the DHCP Interface from the pull-down menu.**

   Select `eth0` or `eth1`.

5. **Click Modify DHCP Info below the table.**

   The Modify DHCP Settings selector window appears.

**Note –** If you make changes to the DHCP information, you must click Save at the end; otherwise, your changes will not take effect.

6. **Click to highlight an entry in the table.**

7. **Click Edit at the bottom right.**

   The Modify DHCP Settings table appears. The Network and Netmask information is already populated.

8. **Enter the range of IP addresses to use for AutoDiscovery.**

   Enter the low IP address of the range in the first field; enter the high IP address of the range in the second field.

**Note –** You do not need to fill in the other fields in this table.

9. **Click Save.**

   The Modify DHCP Settings selector window appears.

10. **Click Previous to return to the Modify Service Settings table.**

11. **If you have made any changes, click Save below the table.**

---

**Note –** If you do not click Save at this stage, your changes to the DHCP information will not be saved and will not take effect.

---

The Task Progress dialog appears.

### Create an AutoDiscovery Client

12. **You now need to create a client.**

    You can create more than one AutoDiscovery client.

    When you create an AutoDiscovery client, the system automatically appends the prefix `default-` to the client name.

    To create an AutoDiscovery client, see "Add a New AutoDiscovery Client" on page 55.

### Enable the AutoDiscovery Client

13. **Once you have created the client, you must enable the client.**

    To enable a client, see "Enabling a Client" on page 61.

### Netboot the Host Machine

14. **Netboot the host machine on the network.**

    The host machine will obtain its network information and payload through the AutoDiscovery client that you have just created.

# Advanced

Under the Advanced sub-menu item, you can:

- Enter registration information that will be used when installing the Sun Java Desktop System (JDS) distribution software.
- Select your AllStart preferences.

## Registering your Sun JDS software

To register your Sun JDS software:

1. **Select AllStart > Advanced.**

   The Registration Information table appears.

2. **Fill in the fields in this table.**

3. **Click Save**

   The Registration Information table refreshes, indicating that the information was saved successfully.

## Selecting your AllStart preferences

This screen allows you to customize the AllStart screens so that only those OS distributions that interest you are displayed.

---

**Note –** If you select only one OS distribution to display, then the Select System Type selector will not appear in the AllStart procedures. You will go directly into the procedure.

---

To select your AllStart preferences:

1. **Select AllStart > Advanced.**

   The Registration Information table appears.

2. **From the pull-down menu above the table, selcet Preference Selection.**

   The AllStart Preferences table appears; see FIGURE 2-34.

3. **Click to enable the OS distributions that you want to display in the AllStart screens.**

4. **Click Save**

   The AllStart Preferences table refreshes, indicating that the information was saved successfully.

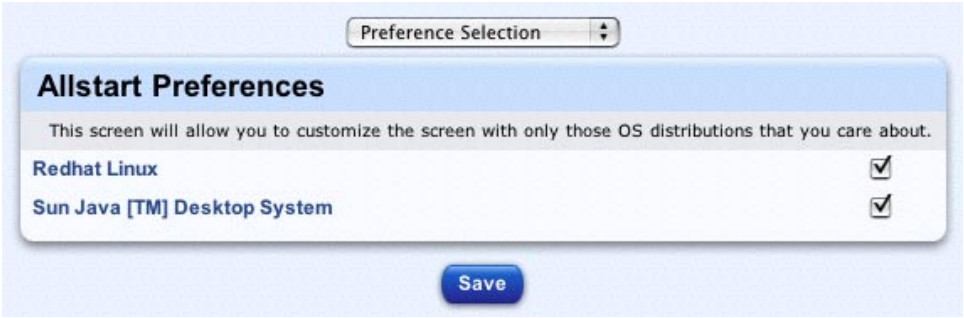


**FIGURE 2-34** AllStart Preferences table

CHAPTER 3

# Customized Kernels and Troubleshooting Issues

This chapter explains how to use a customized kernel in a distributions.

It also discusses the items to verify when troubleshooting problems encountered at the boot stage or installation stage.

## Using a Customized Kernel

You can upload a customized kernel to use in a distribution.

---

**Note –** If you intend to use a customized kernel on a Sun Fire™ V60x or Sun Fire V65x server, ensure that you have the most current SCSI and ethernet drivers.

See "Required Device Drivers for Sun Fire V60x and Sun Fire V65x Servers" on page 77.

---

For more information on creating a payload, profile or client, see the appropriate procedure in Chapter 2, "AllStart Features".

To use a customized kernel:

1. **In the "Upload Distribution..." tables in the Sun Control Station UI, upload the distribution from the ISO files or CD-ROMs.**

   For complete information, see the procedure "Adding a Distribution" on page 13.

2. **Download the customized kernel(s) to the control station.**

   The customized kernels must be in a directory by themselves.

3. **On the control station, make a new directory. For example:**

```
mkdir /tmp/update
cd /tmp/update
```

---

**Note –** You can name this directory anything you want. Ensure that the directory contains only the kernels and no other files.

---

4. **Copy the customized kernel(s) into the directory you created (for example, `/tmp/update`).**

---

**Note –** If you are using the Lights Out Management (LOM) module, ensure that you include the kernel-source RPM.

---

```
/usr/mgmt/sbin/as_distro_update.pl -n "NAME" -d /tmp/update
```

where `NAME` is the name of the distribution you created.

```
/usr/lib/anaconda-runtime/genhdlist /scs/data/allstart/<distro_num>/
```

where <*distro_num*> is the distribution number. To get his distro_num, run the command:

```
/scs/sbin/as_distro.pl
```

5. **Create the payload.**
6. **Create the profile.**
7. **Create the client.**
8. **Enable the client.**
9. **Net boot the client.**

# Required Device Drivers for Sun Fire V60x and Sun Fire V65x Servers

## Ethernet Driver

The gigabit ethernet controller on the Sun Fire V60x and Sun Fire V65x servers requires an Intel PRO/1000 Network Interface (e1000) driver.

Sun recommends that customers install version 4.4.19 or later of this driver. Version 4.4.19 was the ethernet driver used within Sun for compatibility testing; it was shown to install consistently and successfully run a set of pre-defined test cases.

The Intel README file in the e1000 source tar file contains the instructions for building the driver. This information is also available online in HTML format at:
`http://www.intel.com/support/network/adapter/1000/e1000.htm`

To download any Intel drivers, visit the support site at:
`http://appsr.intel.com/scripts-df/support_intel.asp`

- **Perform a search on "e1000 4.4.19" and you will find the appropriate tar file to download.**

## SCSI Driver

The Sun Fire V60x server and Sun Fire V65x server have an Ultra 320 SCSI controller that is supported by only the most recent distributions.

If you intend to use only Sun-qualified add-on cards, then you must install version 1.3.7 or later of this driver. If you intend to use non-Sun-qualified PCI-33 add-on cards, then you must install version 1.3.10 or later of this driver.

Both versions (1.3.7 and 1.3.10) were used within Sun for compatibility testing; they were shown to install consistently and successfully run a set of pre-defined test cases.

The latest SCSI drivers can be downloaded from the developer site at:
`http://people.freebsd.org/~gibbs/linux/`

# Customizing the Configuration Files

You can customize the configuration files.

To do so, you simply add a comment (Allstart: static) to the configuration file that signals to the Allstart module that it should not overwrite this configuration.

The comment can be placed anywhere in the file but it must appear at the beginning of a line. Some examples are:

```
/etc/exports => # Allstart: static
/etc/dhcpd.conf => # Allstart: static
/tftpboot/pxelinux.cfg/* => # Allstart: static
/scs/share/allstart/config/ks-*.cfg => # Allstart: static
/scs/share/allstart/config/ay-*.xml => <!-- # Allstart: static -->
```

Files generated by Allstart now have a <*comment*> <*date*> entry.

Files that might need to share configurations with other services now support customizations. Add your customized lines below following line in the configuration file:

```
Put custom additions below (Do not change/remove this line)
```

Two configuration files support this syntax:

```
/etc/dhcpd.conf
/etc/exports
```

# Troubleshooting

Once you get past the boot stage and the client is loading the RPMs, the installation should work correctly.

## Terminal Windows

Terminal windows are a valuable tool when you are trying to debug a problem during the build process.

You can jump between terminal windows by pressing ctrl-alt-<Fx> on the client being built. The terminal windows are:

- **ctrl-alt-F1**: The initial console, before the X11 install takes over.
- **ctrl-alt-F2**: Shell access, only available once the install kernel is running; autoyast log files are located in `/var/log/YaST2/`.
- **ctrl-alt-F3**: Install messages.
- **ctrl-alt-F4**: Kernel messages.
- **ctrl-alt-F7**: The X11 install screens (if X11 is running).

## Problems at Boot Stage

### Issues with the DHCP server or the PXE boot

If the DHCP server is not running or if the file controlling the PXE boot contains errors in it, the boot stage will fail.

#### *Resolution*

Run the following commands:

```
run tftp localhost
tftp> get pxelinux.0
```

You should receive a response similar to this:

```
Received 10205 bytes in 0.1 seconds
```

If this does not work, verify the following items.

1. Ensure that `tftp` is enabled.

   ```
   chkconfig --list |grep tftp
   ```

2. Ensure that `xinted` is running.

   ```
   /etc/init.d/xinetd restart
   ```

3. Ensure that `/tftpboot/pxelinux.0` exists, with the permissions set to 644.

4. Ensure that the permissions are set to 755 on `/tftpboot`.

5. Ensure that `dhcpd` is started and that the entry for the client MAC address is in the file `/etc/dhcpd.conf`.

6. Ensure that `/tftpboot/pxelinux.cfg/netboot-$mac` exists.

7. The hex files in the file `/tftpboot/pxelinux.cfg` that symlink to `netboot-$mac` should be the IP address in hex format entered when creating the client.

## Install process hangs after `pxelinux.0` has been loaded

### *Resolution*

Enable logging on the `tftp` daemon.

As the *root* user on the Sun Control Station server, edit the file `/etc/xinetd.d/tftp`. Add the following option to `server_args` line:

```
server_args = -l -s /tftpboot
```

---

**Note –** Older versions of `tftp` in Red Hat 7.3 might use the `-v` option instead of `-l`. To verify this, check the man page for `in.tftpd`.

---

Next, while net booting a client, run the command:

```
tail -f /var/log/messages
```

On the control station server, you should see messages similar to the following:

```
Mar  7 19:03:28 lx50 in.tftpd[31083]: sending pxelinux.0
Mar  7 19:03:28 lx50 in.tftpd[31084]: sending pxelinux.cfg/0A010A15
Mar  7 19:03:28 lx50 in.tftpd[31085]: sending JDSSUN-8.1-linux
Mar  7 19:03:29 lx50 in.tftpd[31086]: sending JDSSUN-8.1-initrd
```

If you see that only `JDSSUN-8.1-linux` is being sent and you have USB devices connected the client (including a keyboard and mouse), disconnect the devices and try to net boot the client again.

Another possible solution is to turn off USB Legacy support in the BIOS.

## Possible problem in client configuration

### *Resolution*

Ensure that the boot interface selected in the client configuration matches the interface over which the DHCP request is sent.

In a terminal window, press ctrl-alt-F3 to view the install messages.

## Build process hangs while kernel is booting

### *Resolution*

In the Configure Install Boot Information screen for the client, add the following entries to the kernel parameters.

First try:

```
apm=off acpi=off
```

If that does not work, enter the parameters for the `failsafe` mode:

```
ide=nodma apm=off acpi=off vga=normal nosmp noapic
```

---

**Note –** See "Add a New Client" on page 51 and FIGURE 2-28 for the Kernel Parameter field.

---

# Problems at Installation

The installation is most likely to fail if the system cannot find the file `ay-$mac.xml` (for Sun JDS) or `ks-$mac.cfg` (for Red Hat) listed in `/tftpboot/pxelinux.cfg/netboot-$mac`.

The installation will also fail at this stage if it does not detect the hardware needed for the installation (for example, it cannot load the correct SCSI driver):

- **If using NFS, ensure that the `portmap` and `nfs` services are started.**
- **If using HTTP, try browsing to `http://x.x.x.x/allstart/ksconfig/` where `<x.x.x.x>` is the IP address of your client.**

  If there are errors in the `ksconfig` file, the problem will show up here. This includes such things as invalid disk-partitioning schemes or an invalid package configuration.

- **For Sun JDS: correct the errors in the file:**

  `/scs/share/allstart/config/ay-$mac.xml.`

- **For Red Hat: correct the errors in the file:**

  `/scs/share/allstart/config/ks-$mac.cfg.`

  Once you get past the boot stage and the client is loading the RPMs, the installation should work correctly.

# Re-building an Allstart Client

When re-building a client from one operating system (OS) to another, you might experience disk-partitioning errors. To correct this, try the following:

1. Perform a hard reset of the client system: power the system off and then back on again.

   Now start the build process again on that client by rebooting the client.

2. If that does not correct the errors, perform a low-level format of your hard disk drives.

   Again, start the build process on that client by rebooting the client.

# Interrupting Serial-Console Output While Building a Sun JDS Client

You can redirect your output to a serial console during a build process for a Sun JDS client. If you do so, do not disconnect from the serial console during the build process.

If you disconnect during the build process, the build will be interrupted or the build process might be killed.

Once you reconnect to the serial console, the build process might continue or it might not. This depends on your serial-console software.

# Kernel Parameters on Sun JDS Clients

---

**Note –** See "Add a New Client" on page 51 and FIGURE 2-28 for the Kernel Parameter field mentioned below.

---

When you are creating a Sun JDS client, you need to specify the following kernel parameters:

- For a Sun™ LX50 server: add the argument `acpi=OFF`.

  This turns off the Advanced Configuration and Power Interface (ACPI) feature.

- For all white-box servers: add the argument `apm=OFF`.

  This turns off the Advanced Power Managment (APM) feature.

  If these parameters are not set, modify the client so that they are. See ""Modifying a Client" on page 63.

# Building a Sun JDS Client

## Frame-Buffer Problems

**Error message:** "Press <RETURN> to see the video modes available, <SPACE> to continue or wait 30 secs."

### *Resolution*

If you see this error message, the selection for your frame buffer is invalid. This can cause X11 not to start correctly once the client is built.

This frame-buffer value is based on the resolution and color-depth settings configured in the X11 Configuration Options of the profile for this client (see "X Window Configuration" on page 34). If you selected "Automatically Detect X11 Settings", the default value is 1024 x 768 x 16.

If necessary, you can override this parameter in the Configure Install Boot Information screen for the client. Add the following line in the kernel parameters for the client:

```
No frame buffer install:
```

```
vga=normal
```

Set the frame buffer to a different mode. Scan for a mode you like at the above prompt and enter the corresponding hex value here. For example,

```
vga=0x31e
```

---

**Note –** See "Add a New Client" on page 51 and FIGURE 2-28 for the Kernel Parameter field.

---

If you do not want to change this parameter through the control station UI, you can edit the file `/tftpboot/pxelinux.cfg/netboot-*,` where * is the MAC address or the default-[name], depending the type of client. Modify the `vga=` parameter in this file.

---

**Note –** The control station UI overwrites these changes if you modify the payload, profile or client. For more information, see "Customizing the Configuration Files" on page 78.

---

If you have already built a unit and are still receiving this error message and want to remove it you, you need to edit the file `/boot/grub/menu.lst` Change the `vga=` parameter as shown above.

For further information, visit the following Web site:

`http://www.tldp.org/HOWTO/Framebuffer-HOWTO.html`

## X11 Configuration Problem

X11 does not start when the build process on the Sun JDS client is completed.

### *Resolution*

Ensure that the frame buffer is working correctly. Correcting any frame-buffer problems is the quickest way to ensure that X11 runs correctly.

See "Frame-Buffer Problems" on page 84.