

4

Restoring System Software

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For Help

HP-UX Reference

HP-UX reference information is available on the Internet at:

<http://docs.hp.com/index.html>

System Administrator Manager (SAM)

To start SAM, enter: `/usr/sbin/sam` at a shell window prompt.

For help inside of SAM:

- From the dialog, click **Help**.
- Press F1 for context-sensitive help on a specific field.

3070 Reference

3070 User and Service manuals are located on 3070 system controllers and on factory-supplied updates.

More Help

See [In Case of Difficulty](#) on page 10-1.

Backup Strategy

Data is sometimes lost by a user either accidentally removing or overwriting a file or misusing a command. A power failure could corrupt data or cause a hard disk crash.

CAUTION



Failure to maintain system recovery tapes could result in downtime and costs that could otherwise be avoided.

Data can be restored if you follow proper backup strategies – one of the most important responsibilities of the system administrator is to implement a solid backup strategy.

The backup strategy you use to protect from data loss depends on a number of variables such as:

- How heavily is the system used?
- How often does the data change?
- How critical is it that files can be restored quickly?

A typical three-tiered backup strategy:

- 1 Make a new system recovery tape after:
 - Loading new or updated software.
 - Adding or removing users.

- Changing logical volumes in any way.
- Updating with software that changes the kernel.
- Changing the root password (you can use the recovery system only if you know the root password from when the tape was created).

Instructions are given in [Making a System Recovery Tape](#) on page 4-19.

NOTE

Individual files CANNOT be selected for recovery from a system recovery tape.

-
- 2 Create a full system backup using SAM once each week.

Instructions are given in [Making a Data Backup Tape](#) on page 4-26.

NOTE

Individual files CAN be selected for recovery from a system backup tape.

-
- 3 Create an incremental backup using SAM once each day.

Using a Disaster Recovery Tape

This section contains:

- [Introduction](#), 4-3
- [Prerequisites](#), 4-4
- [Material Required](#), 4-4
- [The Disaster-Recovery Process](#), 4-4

Introduction

Use of these instructions can be avoided by maintaining system recovery tapes for your system(s).

A disaster recovery tape can be used to restore a system when a system recovery tape is not available.

If a disaster recovery tape is used, you will be required to re-establish both the `/etc/bootptab` and `/hp3070/diagnostics/th1/config` files. If these two files are not available (from a backup source), it will likely be necessary to contact your Agilent systems engineer (SE) to re-establish them.

CAUTION



In the case of a system disaster, the cost and time required to obtain an Agilent SE could be avoided if you maintain a separate backup of the `/etc/bootptab` and `/hp3070/diagnostics/th1/config` files.

However, the need for a separate backup of these two files should be eliminated by following a practice of maintaining system recovery tapes for your system(s); if you maintain system recovery tapes, use of a disaster recovery tape should never be necessary.

Disaster-recovery tapes are available from Agilent. They are manufactured to bring a 3070 system to a specific working revision of 3070 software.

Use these instructions **if a system recovery tape does not exist** AND either:

- A system disaster has occurred such as a disk crash OR
- A replacement disk drive has been installed.

CAUTION



All files on the drive to be recovered will be overwritten!

User and board directories will not be restored using this process.

NOTE

Both the UNIX operating system and the 3070 revision-specific software is provided on the disaster recovery tape.

Prerequisites

- Find out if PRPlus is to be enabled to complete [step 9 on page 7](#).
- Host name and networking configuration information. See [Setting-Up New Systems](#) on page 3-1.
- Information on any non-operating-system disks in the system.
- Software certificates from which to enter codewords.
- A backup from which to restore the `/etc/bootptab` and `/hp3070/diagnostics/th1/config` files.

- Login account information.
- Reference information to setup any peripherals to be used from this controller.

Material Required

- A disaster-recovery tape specific to the revision of 3070 software for which it is desired to operate.

The Disaster-Recovery Process

[Table 4-1](#) describes how to recover the 3070 system using a **disaster-recovery** tape.

Table 4-1 Recover the system using a disaster-recovery tape

Task	Step
1 Perform a routine cleaning of the local DAT tape drive.	Follow the tape drive manufacturer's instructions.
2 Boot the controller with the disaster recovery tape:	<ul style="list-style-type: none"> • If the system is operating: <ol style="list-style-type: none"> 1) Follow the shutdown procedures given in Chapter 2, Shutting-Down the System. 2) Restart the controller then immediately put the tape in the tape drive. • If the system is not operating, start the controller then immediately put the tape in the tape drive.
3 When the boot process begins:	<div style="background-color: #e1f5fe; padding: 5px; margin-bottom: 10px;"> <p>NOTE</p> <p>Instructions for performing these steps are given in Searching for Bootable Media on page 4-13, and should also be found in the controller's owner manual.</p> </div> <ol style="list-style-type: none"> a Interrupt it. b Search for bootable devices. c Choose to boot from tape.
4 If you see a question about using IPL:	<ul style="list-style-type: none"> • Choose to proceed with no intervention with IPL (enter: n)

Table 4-1 Recover the system using a disaster-recovery tape

Task	Step
<p>5 Wait for Ignite-UX to start (approximately 5 minutes).</p>	<p>NOTE</p> <p>During Ignite-UX installation, you will be prompted to enter information.</p> <p>Use the keyboard Tab key to navigate between fields, the arrow keys to navigate within fields, and Enter to select an item.</p> <p>Display a list of choices within a field by pressing the space bar (press it again to return to the initial entry). In most cases, select Next by tabbing to it then press Enter.</p>
<p>6 A Welcome to Ignite-UX! window will open, and Install HP-UX will be highlighted.</p>	<ul style="list-style-type: none"> • Press Enter.
<p>7 In the User Interface and Media Options window, verify the defaults as listed here then press Enter:</p>	<ul style="list-style-type: none"> • Source Location Options should have Media only installation selected. • User Interface Options should have Guided Installation selected. • OK should be highlighted. <p>NOTE</p> <p>You'll have to wait about one minute before you can continue with the next step.</p>

Table 4-1 Recover the system using a disaster-recovery tape

Task	Step
8 In the Install HP-UX wizard: Select an overall system configuration window:	a Verify the default selection in the Configurations: field of HP-UX B.10.20 . b Tab to Next , then press Enter .
9 For the Select a system environment window, is PRPlus to be enabled on this system?	<ul style="list-style-type: none"> • If no: <ol style="list-style-type: none"> 1) Verify that the Environments: field indicates 3070: 2-User HP-UX 10.2. 2) Tab to Next, press Enter, then continue with step 10 on page 8. • If yes: <ol style="list-style-type: none"> 1) Press Enter, then use the arrow keys to select 3070: 8-User HP-UX 10.2. 2) Press Enter, tab to Next, press Enter, then continue with step 10 on page 8.

Table 4-1 Recover the system using a disaster-recovery tape



Task	Step
<p>CAUTION</p>	
<p> In Task 10, all disks connected and turned on will display in the list whether mounted or not.</p> <ul style="list-style-type: none"> • Select ONLY a disk that has been backed-up. • DO NOT select a disk where data should not be changed. 	
<p>10 Does the description after Root Disk... indicate the proper disk where software is to be reloaded?</p>	<ul style="list-style-type: none"> • If yes, tab to Next, press Enter, then continue with step 11. • If no: <ol style="list-style-type: none"> 1) Tab to Root Disk..., press the space bar, then choose the correct disk. 2) Return to the root disk screen by tabbing to OK then pressing Enter. Continue with step 11.
<p>11 In the Specify the amount of root swap space window:</p>	<p style="background-color: yellow;">CAUTION</p> <p> DO NOT use a value for Root Swap (MB)... less than 400 MB.</p> <p>A default value will exist for root swap space. Accept the default unless there is a specific need to change it.</p> <ul style="list-style-type: none"> • Tab to Next, then press Enter.
<p>12 In the Select a file system type window:</p>	<ul style="list-style-type: none"> • The File System: field MUST indicate Logical Volume Manager (LVM) with HFS. <p>Verify this condition, tab to Next, then press Enter.</p>

Table 4-1 Recover the system using a disaster-recovery tape



Task	Step
<p>13 In the Specify the root volume group disks window:</p>	<div data-bbox="1031 375 1955 423" style="background-color: yellow; padding: 2px;">CAUTION</div> <div data-bbox="1031 423 1955 505">  DO NOT select any disks where data should not be changed or is not backed-up. Any data on the selected disk(s) will be destroyed. </div> <hr/> <div data-bbox="1031 586 1955 634" style="background-color: yellow; padding: 2px;">CAUTION</div> <div data-bbox="1031 634 1955 829">  A minimum 3 GBs of disk space is required for the root volume group (the root volume group contains the operating system and 3070 applications). Verify that the number of disks specified in Number of Disks in Root Group matches this information. DO NOT choose Striping. </div> <hr/> <p>The number of available disks should match the number of disks that are attached and turned on. If more than one disk is to be used as the root volume group, enter the number of disks to use.</p> <ul style="list-style-type: none"> • Verify the selection, tab to Next, then press Enter.
<p>14 In the Select a language (s) window:</p>	<ul style="list-style-type: none"> • Tab to Next, then press Enter. <div data-bbox="1031 1154 1955 1203" style="background-color: lightblue; padding: 2px;">NOTE</div> <div data-bbox="1031 1203 1955 1268"> <p>English is the only language supported.</p> </div>

Table 4-1 Recover the system using a disaster-recovery tape



Task	Step
<p>15 In the Select Additional Software window:</p>	<ul style="list-style-type: none"> • Tab to Next then press Enter
<p>16 In the Pre-install disk information window:</p>	<div data-bbox="1031 472 1955 521" style="background-color: yellow; padding: 2px;"> <p>CAUTION</p> </div> <div data-bbox="1031 521 1955 602"> <p> A message will display which disks will be overwritten during the installation. This is a critical step. Check the message carefully.</p> </div> <hr/> <p>Is the message correct?</p> <ul style="list-style-type: none"> • If yes: <ul style="list-style-type: none"> Tab to Next, press Enter, then continue with step 17. • If no: <ol style="list-style-type: none"> 1) Tab to Back, then press Enter. 2) Backup to the disk selection screen to make corrections before continuing.

Table 4-1 Recover the system using a disaster-recovery tape

Task	Step
<p>17 In the Pre-install check information window:</p>	<p>NOTE</p> <p>Ignore these warnings:</p> <p>WARNING: The disk at: <location> appears to contain a file system and boot area. Continuing the installation will destroy any existing data on this disk.</p> <p>The /user file system size is below the suggested minimum of 200Mb. . .</p> <hr/> <p>a Review any errors or warnings that occurred during the setup.</p> <p>b Tab to Next, then press Enter.</p>
<p>18 In the System Summary window:</p>	<ul style="list-style-type: none"> • Tab to Finish, then press Enter.

Table 4-1 Recover the system using a disaster-recovery tape

Task	Step
<p>19 Allow the software installation to proceed to completion.</p>	<p>This can take approximately one hour depending on the speed of the controller. During the process, the controller will reboot, then more processing will occur.</p> <div data-bbox="1031 505 1955 553" style="background-color: yellow; padding: 2px;">CAUTION</div> <div data-bbox="1031 553 1100 618" style="display: inline-block; vertical-align: middle;">  </div> <p>During this process, these status indicators will be displayed:</p> <ul style="list-style-type: none"> * Download_mini_system: AND * Loading software <p>If errors occur after these indicators appear, the tape drive could be defective (warnings are OK).</p>
<p>20 Remove the disaster recovery tape. Return it to a safe place!</p>	
<p>21 Perform all instructions given in Chapter 3, Setting-Up New Systems beginning with Task 3 in Table 3-2 on page 3-6.</p>	

Searching for Bootable Media

Use these instructions to define a controller's boot source as the internal tape drive.

Each controller type has a slightly different method of searching for bootable media.

Choose the appropriate controller below then use the associated procedure:

- **HP 9000 Models 778 (B180L), 782 (C240), 785 (B2000 & C3600), 4-14**
- **HP 9000 Model 777 (C110), 4-15**
- **HP 9000 Model 725/50, 4-16**
- **HP 9000 Model 725/100, 4-17**
- **HP 9000 Model 712 (60 or 100), 4-18**

HP 9000 Models 778 (B180L), 782 (C240), 785 (B2000 & C3600)

This example shows the internal DAT tape drive at SCSI address 3 (default), and the optional 4-GB preloaded update disk at SCSI address 4.

- 1 Cycle power.
- 2 Press any key within 10 seconds after this message is displayed:

Processor is booting from first available device. To discontinue, press any key within 10 seconds.

- 3 The message **Boot terminated** will appear.
- 4 The **Main Menu** of the boot console will appear. It looks like:

```
----- Main Menu-----
Command          Description
-----
B0ot [PRI|ALT|<path>]  Boot from specified path ...
SEArch [DISplay|IPL] [<path>] Search for boot devices ...
-----
Main Menu: Enter command or menu >
```

- 5 Enter: search
- 6 The message **Searching for potential boot device(s). This may take several minutes.** will appear.

NOTE

To discontinue this process, press any key (termination may not be immediate).

7 A boot screen will appear. It looks like:

```
Path Number Device Path Device Type
-----
P0          FWSCSI.6.0 SEAGATE ST model#
P1          SESCOI.3.0 HP HP model#
Main Menu: Enter command or menu >
```

To boot from the tape at SCSI address 3, enter either:

```
boot SESCOI.3.0 or boot P1
```

8 Answer **N** to **Interact with IPL?**

HP 9000 Model 777 (C110)

This example shows the internal DAT tape drive at SCSI address 3 (default), and the optional 4-GB preloaded update disk at SCSI address 4.

- 1 Cycle power.
- 2 As soon as information displays on the video monitor, press **Esc** twice.
- 3 The message, **Boot terminated**, will appear.
- 4 The **Main Menu** of the boot console will appear. It looks like:

```
----- Main Menu -----
Command          Description
-----
B00t [PRI|ALT|<path>]  Boot from specified path ...
SEArch [DIsplay|IPL] [<path>] Search for boot devices ...
-----
Main Menu: Enter command or menu >
```

- 5 Enter: search
- 6 The message **Searching for potential boot device(s). This may take several minutes.** will appear.

NOTE

To stop this process, press any key (termination may not be immediate).

- 7 A boot screen will appear. It looks like:

```
Path Number Device Path      Device Type
-----
P0          core.FWSCSI.6.0 SEAGATE ST model#
P1          core.SCSI.4.0   SEAGATE ST 34572WC
P2          core.SCSI.3.0   HP HP model#
```

Main Menu: Enter command or menu >

- 8 Boot from a source:
 - To boot from the tape at SCSI address 3, enter:
boot SCSI.3.0 or boot P3
 - To boot from the 4-GB preloaded update disk at SCSI address 4, enter:
boot SCSI.4.0 or boot P4

- 9 Answer **N** to **Interact with IPL?**

HP 9000 Model 725/50

This example shows the internal DAT tape drive at SCSI address 3 (default), and the optional 4-GB preloaded update disk at SCSI address 4.

- 1 Cycle power.
- 2 Press and hold **Esc** until you see **Selection process stopped**.
- 3 The message, **Selecting a system to boot**, will appear.

NOTE

To stop this process, press and hold **Esc** until the message **Selection process stopped** appears.

- 4 The message **Searching for potential boot device(s)** will appear.
- 5 A boot screen will appear. It looks like:

```
Device Selection  Device Path Device Type
-----
P0                scsi.6.0   QUANTUM model#
P1                scsi.5.0   QUANTUM model#
P2                scsi.4.0   SEAGATE ST34572WC
P3                scsi.3.0   HP model#
b) Boot from specified device
s) Search for bootable devices
a) Enter Boot Administration Mode
x) Exit and continue boot sequence
?) Help

Select from menu:
```

- 6 Select a boot source:

- To boot from the tape at SCSI address 3, enter:
`boot P3` **or** `boot scsi.3.0`
- To boot from the disk at SCSI address 4, enter:
`boot P2` **or** `boot scsi.4.0`

HP 9000 Model 725/100

This example shows the internal DAT tape drive at SCSI address 3 (default), and the optional 4-GB preloaded update disk at SCSI address 4.

- 1 Cycle power.
- 2 Press **Esc** approximately once per second until you see the `BOOT_ADMIN` prompt.
- 3 A boot screen will appear. It looks like:

```

-----
Command                Description
-----
...
Boot [pri|alt[isll]]    Boot from primary, ...
...
Search [ipl][scsi|fwscsi|eisa] Show potential boot dev..
-----
BOOT_ADMIN >

```

- 4 Enter: `search`
- 5 The message **Searching for potential boot device** **This may take several minutes.** will appear.

NOTE

To stop this process, press **Esc**.

- 6 A boot screen will appear. It looks like:

```

Device Path      Device Type
-----
scsi.6.0         Quantum model#
scsi.4.0         SEAGATE ST34572WC
scsi.3.0         HP model#

```

`BOOT_ADMIN >`

- 7 Select a boot source:

- To boot from the tape drive at SCSI address 3, enter:
`boot scsi.3.0`
- To boot from the disk at SCSI address 4, enter:
`boot scsi.4.0`

HP 9000 Model 712 (60 or 100)

This example shows the internal DAT tape drive at SCSI address 3 (default), and the optional 4-GB preloaded update disk at SCSI address 4.

- 1 Cycle power.
- 2 Press and hold **Esc**.
- 3 A boot screen will appear. It looks like:

```

-----
Command                Description
-----
...
Boot [pri|alt|scsi.addr][isl]  Boot from primary, ...
SEArch [IPL][scsi|lan[install]] Search for boot devices.

BOOT_ADMIN >

```

- 4 Enter: search
- 5 The message **Searching for potential boot device(s). This may take several minutes.** will appear.

NOTE

To stop this process, press **Esc**.

- 6 A boot screen will appear. It looks like:

```

Device Path Device Type
-----
scsi.6.0    HP model#
scsi.4.0    SEAGATE ST34572WC
scsi.3.0    HP model#

```

BOOT_ADMIN >

- 7 Select a boot source:
 - To boot from the tape drive at SCSI address 3, enter:


```
boot scsi.3.0
```
 - To boot from the disk at SCSI address 4, enter:


```
boot scsi.4.0
```

Making a System Recovery Tape

This section contains:

- [Introduction](#), 4-19
- [Material Required](#), 4-20
- [To Create a System Recovery Tape](#), 4-20

Introduction

In the event of a disaster such as if the hard drive crashes, the quickest way for recovery is through the use of a system recovery tape.

Use the system recovery tape:

- To restore a system with a hardware failure on the root disk or volume group.
- If the normal HP-UX system cannot boot.

NOTE

The system recovery tape cannot be used to recover individual files.

A disaster recovery tape can be used to restore a system when a system recovery tape is not available. However if a disaster recovery tape is used, you will be required to re-establish both the `/etc/bootptab` and `/hp3070/diagnostics/th1/config` files. If these two files are not available (from a backup source), it will

likely be necessary to contact your Agilent systems engineer (SE) to re-establish them.

CAUTION



In the case of a system disaster, the cost and time required to obtain an Agilent SE could be avoided if you maintain a separate backup of the `/etc/bootptab` and `/hp3070/diagnostics/th1/config` files.

However, the need for a separate backup of these two files should be eliminated by following a practice of maintaining system recovery tapes for your system(s) – if system recovery tapes are maintained, the use of a disaster recovery tape should never be necessary.

NOTE

The HP-UX 9.x utility `mkrfs` is not supported on HP-UX 10.x releases. Use `make_recovery` instead.

The `make_recovery` utility:

- Creates a bootable subset of the HP-UX system that contains only enough of the system to repair the file system.

- Will capture only one volume group. All 3070 systems are shipped with just one volume group so all your necessary files should be intact within the one volume group.

Update the Recovery Tape on a Regular Basis

CAUTION



The **root** password in use when a system recovery tape is created will be needed if it will be used in a future system recovery.

Material Required

A single DAT tape with enough capacity to perform the backup.

To Create a System Recovery Tape

Table 4-2 describes how to create a system recovery tape.

ADVICE

If the file system is large enough so that it will not fit on a single tape, create a core system recovery tape consisting of only a minimal operating system.

Table 4-2 Create a system recovery tape

Task	Step
1 Perform a routine cleaning of the local DAT tape drive.	Follow the tape drive manufacturer's instructions.
2 Insert a tape for backup in the tape drive.	
3 Login as <code>root</code>	
4 Change to the <code>root</code> directory:	<ul style="list-style-type: none"> • Enter: <code>cd /</code>
5 Bring the system to single-user mode:	<ul style="list-style-type: none"> • Enter: <code>shutdown</code>

Table 4-2 Create a system recovery tape


Task	Step
6 Mount all file systems:	<ul style="list-style-type: none"> • Enter: <code>mount -a</code>
7 Begin making the system recovery tape:	<ul style="list-style-type: none"> • If creating a tape to contain the entire system, enter: <code>/opt/ignite/bin/make_recovery -v -A</code> This process will take approximately 1 hour on a C240 controller with no board data. • If creating a system recovery tape to contain a core system, enter: <code>/opt/ignite/bin/make_recovery -v</code> This process will take approximately 30 minutes on a C240 controller with no board data. <div data-bbox="1010 834 1955 883" style="background-color: yellow; padding: 5px;">CAUTION</div> <div data-bbox="1010 883 1955 964">  If creating a system recovery tape to contain a core system, you must have a known full backup (containing the entire system). </div>
8 When the recovery tape is complete:	<ul style="list-style-type: none"> • Remove the tape from the tape drive. • Reboot. At a shell window prompt, enter: <code>shutdown -r</code>
9 Label the tape in such a way that it does not get accidentally used:	<p>Include:</p> <ul style="list-style-type: none"> • A System Recovery Tape heading. • The <code>make_recovery</code> command line used. • The creation date. • The operating system revision.

Table 4-2 Create a system recovery tape

Task	Step
10 Store the tape in a safe place.	
11 If you created a core system recovery tape:	<ul style="list-style-type: none">• Use SAM to create a full backup. Refer to Making a Data Backup Tape on page 4-26.

Using a System Recovery Tape

Use a system recovery tape if the system will not boot.

Table 4-3 describes how to use a system recovery tape.

NOTE

One or more data backup tapes may be required in addition to the system recovery tape to bring the system to its most recent state, as defined by your backup strategy.

CAUTION



Use of the system recovery tape will re-initialize your disk drive; all existing data will be lost.

Table 4-3 Recover the 3070 system using a system recovery tape

Task	Step
1 Perform Task 1 through Task 4 in Table 4-1 on page 4-5.	
2 Allow the system recovery tape to install a bootable system onto the hard drive.	<p>This procedure will take approximately 1.5 hours.</p> <div data-bbox="890 570 1955 618" style="background-color: #e0f0ff; padding: 5px;">NOTE</div> <p>About 5 minutes into the process, the system may warn you that it detects a file system. Ignore this.</p> <hr/> <p>When the process is finished, it will automatically reboot to the newly re-installed disk in one of the following ways:</p> <ul style="list-style-type: none"> • If the system recovery tape was created using the <code>-A</code> option, the system will reboot to a fully working system. • If a core system recovery tape was created, only the minimum operating system will be restored. As the system reboots, errors will display. This is OK.
3 Log in as <code>root</code> .	Use the same password as when the system recovery tape was created.
4 Mount all logical volumes:	<ul style="list-style-type: none"> • Enter: <code>mount -a</code>

Table 4-3 Recover the 3070 system using a system recovery tape

Task	Step
5 Recover with any latest subsequent system backup tape made since the system recovery tape was made:	<p>a Place the data backup tape in the tape drive.</p> <p>b Enter: <code>frecover -r -o</code></p> <p>The process will take over an hour. You will see feedback on the display only if you need to take some action. You will be notified of any files that are in use and therefore backed up to another name.</p>
6 Reboot.	<div style="background-color: #e1f5fe; padding: 5px; margin-bottom: 10px;">NOTE</div> <p>If you see the error:</p> <pre>grmd: Cannot write to the sockets directory</pre> <p>Then log in as <code>root</code> then enter:</p> <pre>chmod 777 /var/spool/sockets</pre> <hr/> <p>The system should come up with a CDE login prompt.</p>
7 Use SAM to update from the latest data backups.	<p>Use all incremental backups created since the full backup described in Task 5.</p>

Making a Data Backup Tape

This section contains:

- [Prerequisite](#), 4-26
- [To Perform an Immediate Backup](#), 4-26
- [Setup the Automated Backup](#), 4-26
- [Verify the Backup\(s\)](#), 4-27

Prerequisite

Determine:

- The device file of the storage device on which to create your backup (as shipped, this is `/dev/rmt/0mn`).
- The type of backup you should do – either a full backup (recommended), or an incremental backup.
- The directories and files for backup.
- When the backup should occur.

To Perform an Immediate Backup

A common method:

-
- 1 **Insert a tape in the tape drive.**

-
- 2 **Click the backup from the list, then click Actions > Perform Backup Now.**

NOTE

Test developers can perform backups of their board directories by using Test Consultant's **Archive Board Directory** feature.

Setup the Automated Backup

-
- 1 **Login as `root`**

-
- 2 **Start SAM.**

-
- 3 **Click Backup and Recovery > Automated Backups.**

Create or edit a backup in this **Backup/Recovery** window.

- To remove a backup, click **Actions > Remove an Automated Backup**.
- To add a backup, click **Actions > Add an Automated Backup**.

CAUTION



Make sure that a writable tape exists in the tape drive at the scheduled backup time.

Verify the Backup(s)

- By default, the **root** user will receive e-mail notification of automated backups.
- Check the date and time of all backups by clicking, from the **Automated Backups** screen, **Actions > View Log Files > History Log**.
- Check the files and directories in any backup by clicking, from the **Automated Backups** screen, **Actions > View Log Files > Incremental Backup Log or Full Backup Log**.

Using a Data Backup Tape

This section contains:

- [Use SAM to Recover Specific Files and Directories, 4-28](#)
- [Verify the Recovery, 4-29](#)

NOTE

To perform a complete software reload when an appropriate backup does not exist, see [Using a Disaster Recovery Tape](#) on page 4-3.

Use SAM to Recover Specific Files and Directories

These instructions are valid only if a data backup tape was created as explained in [Making a Data Backup Tape](#) on page 4-26

Table 4-4 Use SAM to recover specific files and directories

Task	Step
<p>1 To use SAM to recover specific files and directories:</p>	<p>a Insert the data backup tape into the tape drive.</p> <p>b Click Backup and Recovery > Interactive Backup and Recovery. Select a description for the backup tape.</p> <p>c Click Actions > Recover Files or Directories.</p> <p>d Click Select Recovery Scope...</p> <p>e Type the path name of the file or directory into the File Name: box then click Add. If a directory is selected, the entire contents of the directory including its subdirectories and files will be restored.</p> <div style="background-color: #e1f5fe; padding: 5px; margin: 10px 0;"> <p>NOTE</p> <p>To restore a corrupted file:</p> </div> <p>a In the Recover files or Directories window, click Set Additional Parameters...</p> <p>b Click Overwrite Newer Files. SAM will overwrite selected data on the hard disk even if the file creation dates do not match.</p> <p>c Click OK.</p>

Verify the Recovery

From SAM's **Automated Backups** screen, click **Actions > View Log Files > Recovery Log**.