Configuring Veritas NetBackup Version 5.1 for NDMP Remote Backup on a Solaris

About Remote Backup

A Mirapoint appliance can be backed up to a tape device (tape library or stand-alone tape drive) that is not directly connected to the Mirapoint appliance. A remote NDMP backup uses an NDMP mover service on the DMA, and a tape device that is directly attached to the DMA (see Figure 1).

Figure 1   Remote Backup Configuration

The remote backup of the Mirapoint appliance is accomplished using the Veritas NDMP mover service and a tape device directly attached to the Solaris server that is hosting the Veritas DMA. Mirapoint's NDMP data service is the only NDMP service used on the Mirapoint appliance in a remote backup configuration (see Figure 2).
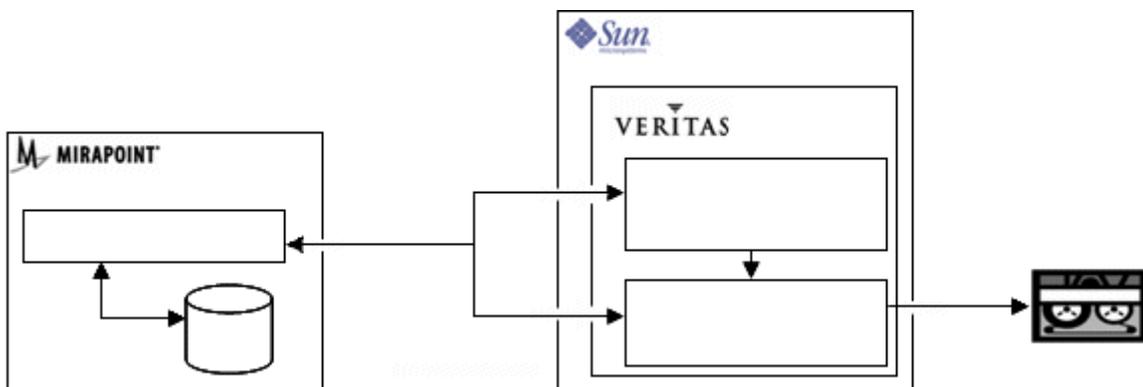
Figure 2   Main Components of Remote NDMP (Using a Solaris Server)

Remote NDMP supports three-way backups of hosts running any NDMP version (V2, V3, and V4). However, the remote NDMP process which runs on the media server currently only supports version V2.

Overview of the Setup Process

To set up NetBackup for NDMP remote backup you do the following:

◆ Complete the Mirapoint software configuration and setup.

◆ Connect the tape drive or library to a network-connected NetBackup (DMA) server.

◆ Complete the Veritas NetBackup server and data management application (DMA) software configuration and setup.

◆ Test your NDMP backup configuration

These steps are described in detail in the following sections.

Completing the Mirapoint Software Configuration and Setup

To complete the software configuration and setup on the Mirapoint appliance, you must enable and start the NDMP service. Do the following:

1. Open a telnet window and log into the CLI as an administrator.

2. Enable and start NDMP service. Enter the following commands:

```
Service Enable Ndmp
Service Start Ndmp
```

To verify that NDMP service has been enabled and started, enter the following command:

```
Service Started Ndmp
```

3. Log out of the CLI, and close the telnet window.

The Mirapoint appliance is now ready for NDMP backup.

Connecting Tape Drives or Libraries

When using a tape drive or library that is remotely connected to a third-party server that is not a Mirapoint appliance, you must have a working knowledge of the setup and installation of those devices.

Before connecting the tape device to your Solaris server, refer to the Veritas support website for information on supported SCSI robots.

This section covers the physical installation of your tape device to the NetBackup server. If you are using a tape device that is connected to a network connected server other than Mirapoint, your tape drive or library (media changer) should come with instructions on how to connect your equipment. While these instructions are not specific to the Mirapoint appliance, they should provide enough information to allow you to complete the connections correctly.

To back up the Mirapoint appliance to a SCSI tape drive or library it should be operating in random-access mode.

Installing a Tape Library

To complete the installation of a tape library:

1. Physically connect the tape device per the instructions provided with that hardware, and according to the specifications provided with your Solaris server.

2. Install the NetBackup SCSA generic **sg** driver. When communicating with SCSI-controlled robotic peripherals, the NetBackup **Media Manager** utilizes the NetBackup provided SCSA Generic (**sg**) driver. You must install the **sg** driver before continuing with the instructions in this article.

3. Display all device files that are available on the Solaris system for use by the sg driver. Enter the following command at the command-line prompt:

   ```
   # /usr/openv/volmgr/bin/sgscan all
   ```

   A list of device files displays. For example:

   ```
   /dev/sg/c0t0l0: Disk (/dev/rdsk/c0t0d0): "Seagate ST373307LSUN72G"

   /dev/sg/c0t1l0: Disk (/dev/rdsk/c0t1d0): "Fujitsu MAP3147N SUN146G"

   /dev/sg/c1t14l0: Changer: "HP C7200"

   /dev/sg/c1t6l0: Tape (/dev/rmt/0): "HP Ultrium 1-SCSI"
   ```

   If you do not see the device you intend to use on the list of devices, you might have to change the configuration of the **sg** and **st** drivers. To do this refer to the *Veritas NetBackup 5.1 Media Manager Device Configuration Guide for Unix and Windows* manual.

4. Make a note of the pathname for the tape library/changer you plan to configure in the NetBackup Media Manager for your NDMP remote backup. For example, if you plan to use the HP C7200 changer, note the `/dev/sg/c1t14l0` pathname.

5. Inventory the library. (Otherwise the DMA will not know the media in the added library is available for use).

Installing a Tape Drive

To configure a tape drive:

1. Physically connect the tape device per the instructions provided with that hardware, and according to the specifications provided with your Solaris server.

2. Display all tape device files that are available on the Solaris for use by the **sg** driver. Enter the following command a the command-line prompt:

   ```
   # /usr/openv/volmgr/bin/sgscan tape
   ```

   A list of device files displays. For example:

   ```
   /dev/sg/c1t6l0: Tape (/dev/rmt/0): "HP Ultrium 1-SCSI"
   ```

   If you do not see the device you intend to use on the list of devices, you might have to change the configuration of the **sg** and **st** drivers. To do this refer to the *Veritas NetBackup 5.1 Media Manager Device Configuration Guide for Unix and Windows* manual.

3

When adding tape drives to a media manager configuration, you specify a "no rewind on close" device pathname. These devices files are found in the `/dev/rmt` directory. The pathname is in the format of `/dev/rmt/logicalDrive#cbn` (for example: `/dev/rmt/0cbn`).

3. Make note of the tape drive pathname you plan to use for remote NDMP backup.

You are now ready to complete the NetBackup configuration on the DMA. Proceed to Completing the NetBackup Server and DMA Configuration on page 4.

Completing the NetBackup Server and DMA Configuration

After NetBackup is installed on a server as described in the documentation provided by Veritas, complete the data management application (DMA) setup.

Use the command-line to do the following:

◆ Authorize access for the NetBackup media server and Mirapoint appliance (see Authorizing Access to the NDMP Server on page 5).

◆ Configure the tape drives or libraries that will be used for remote NDMP backup (see Connecting Tape Drives or Libraries on page 2).

Use the NetBackup **Administration Console** (GUI) to do the following:

◆ Add a robot and tape drives (see Adding a Robot (Tape Library) on page 6 and Adding a Tape Device to the Tape Library on page 8)

◆ Create a storage unit (see Creating the Storage Unit on page 10)

◆ Create a policy (see Creating a Class or Policy on page 11)

◆ Define the backup selections for this policy (see Defining Backup Selections on page 13)

◆ Define a schedule for the new policy (see Defining a Schedule on page 16)

◆ Add a client name to the newly created policy (see Adding a Client Name on page 18)

This procedure documents using a Solaris Unix workstation to complete the setup process.

Veritas may change their DMA at any time, rendering these instructions obsolete.

Required Information

The following information is required to complete the NetBackup DMA setup:

◆ The device name for the tape library or media changer (robot) if you plan to use one (see Installing a Tape Library on page 3).

◆ The device name for the tape drive you plan to use (see Installing a Tape Drive on page 3).

◆ The host name of the Mirapoint appliance.

◆ The host name of the Veritas NetBackup server.

◆ The host name of the server or system where the tape drive or library is attached. In this procedure, it is the host server where the NetBackup DMA resides (the Solaris server).

◆ Determine the Mirapoint user login and password to be used by the NetBackup server authentication (administrator is recommended, but this can be someone with administrator privileges).

Veritas limits the password to a maximum of eight characters.

Authorizing Access to the NDMP Server

Before you can use Veritas NetBackup to perform a remote NDMP backup of a Mirapoint appliance you must first authorize the NetBackup server to access the Mirapoint appliance. You must also setup NDMP authentication for the NetBackup media server.

From the Solaris command-line do the following:

1. Change to the **volmgr/bin** directory, by entering the following:

        cd /usr/openv/volmgr/bin

    This assumes the NetBackup root or install directory is /usr/openv/.

2. Verify the NDMP mover agent service is running on the Solaris server. Enter the following command:

        /usr/openv/volmgr/bin/ndmpmoveragent.start

    This installs and starts the NDMP mover agent service, if not already started.

3. Set up NDMP authentication for the NetBackup media server. Enter the following command:

        /usr/openv/volmgr/bin/set_ndmp_attr -auth Netbackup-host root

    where:
    ❖ *Netbackup-host* is the server where the NDMP mover agent is installed.
    ❖ *root* is either a system administrator user name with full administrative permissions, or root.

4. Authorize access to the Mirapoint appliance. Enter the following command:

        set_ndmp_attr -auth ndmp-data-server username

    where:
    ❖ *ndmp-data-server* is the host name of the Mirapoint appliance you plan to backup.

❖ *username* is the administrator user name under which NetBackup accesses the Mirapoint appliance.

Completing the DMA NDMP Backup Configuration

In this section, you complete the DMA setup using the NetBackup Administration Condole (GUI).

Start the NetBackup **Administration Console** from the command-line by entering the following command:

```
/usr/openv/netbackup/bin/jnbSA &
```

The login screen displays.

Login as an administrator with full access, or as root. The **Main Menu** window displays.
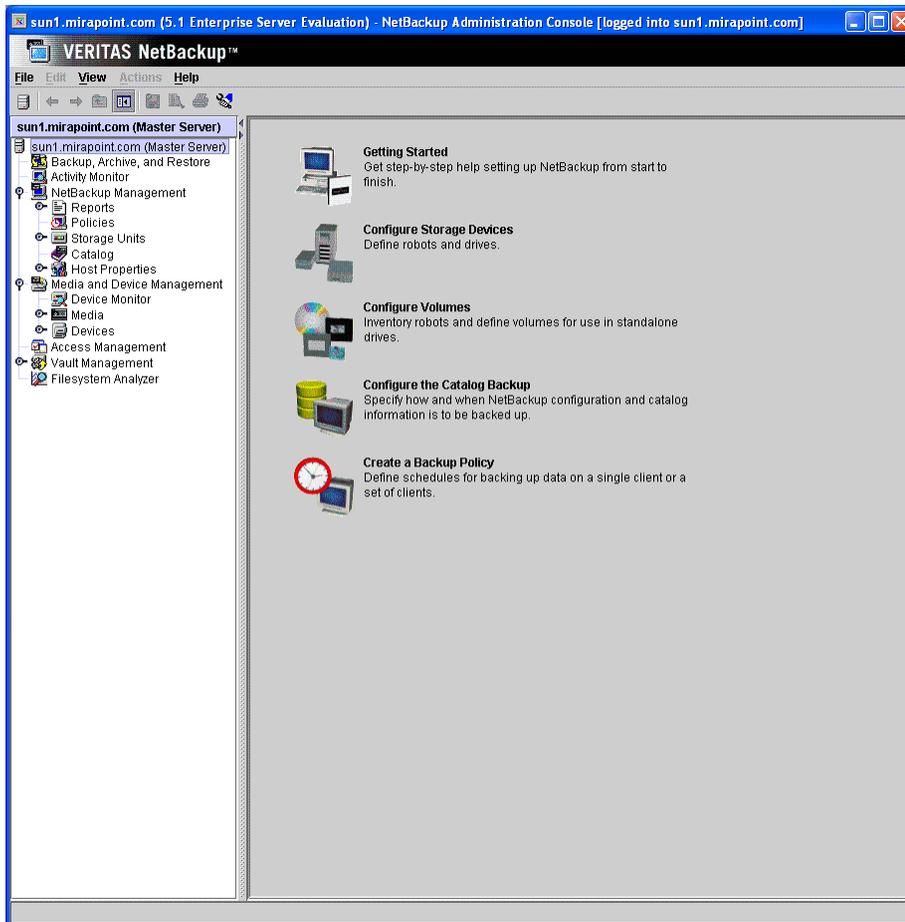
Figure 3   NetBackup Main Menu

Adding a Robot (Tape Library)

From the **Main Menu,** select and expand **Media and Device Management > Devices,** then do the following:

1. Highlight and right click on **Robots,** then select **New Robot** from the drop-down menu.
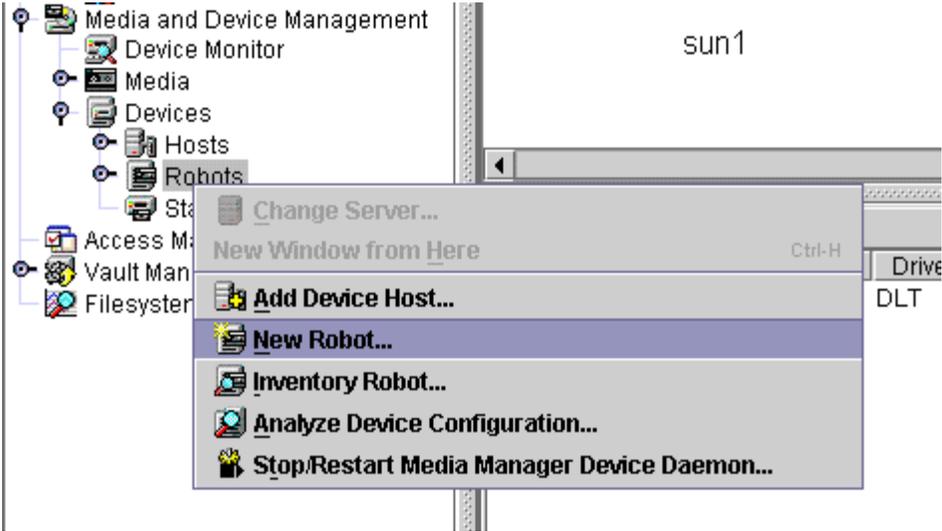
Figure 4   Robots Drop-Down Menu

The **Add a New Robot** pop-up window displays.

2. Enter the appropriate data in the following fields:
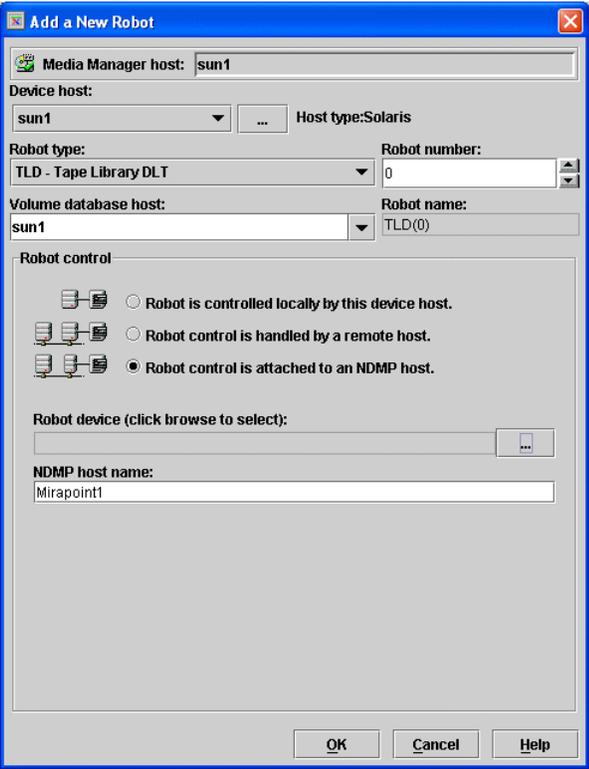
Figure 5   The Add a New Robot Pop-Up Window

7

❖ **Robot Type:** Select the information for the robot you plan to use for backup storage from the drop-down menu.

❖ **Device Host:** Enter the host name of NetBackup system or server (this is not the Mirapoint appliance's host name). This should already be filled in by default.

❖ **Volume Database Host:** Enter the name of the NetBackup host that controls the volume database (this is not the Mirapoint appliance). This should already be filled in by default.

❖ **Robot Number:** Enter a number that you assign to this device, which does not conflict with a robot already created on the client.

❖ **Robot Control:** Select Robot controlled locally by this device host.

3. Locate and click on the **...** button immediately adjacent to the **Robot Device** text box.

   a. Select the address of the robot in the Robotic Device File field (enter the changer address **/dev/sg/c1t14l0** from step 4 in Installing a Tape Library on page 3).

   b. Click **OK**.

4. Click **OK**.

If the Administration Console displays an error message, the **Robot Number** may need to be changed.

Adding a Tape Device to the Tape Library

Next you add a tape device to the tape library you created in the previous section, Adding a Robot (Tape Library) on page 6.

From the **Device > Robots** window, highlight the robot created in step 2 above, then do the following:
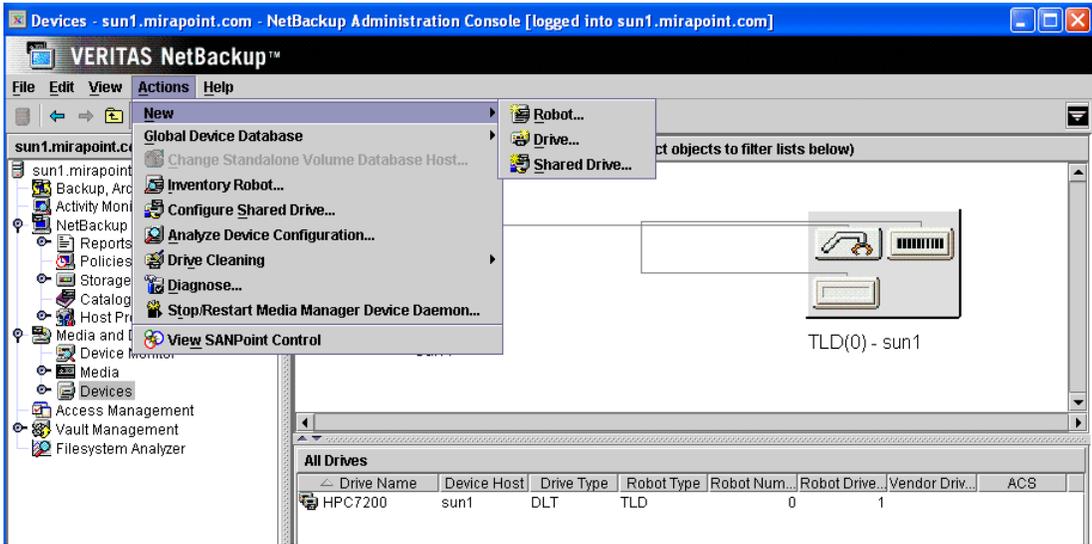
Figure 6   Adding a New Drive Using the Top Tool Bar

1. Select **Actions > New > Drive** from the top menu bar. The **Add a New Drive** pop-up window displays (see Figure 6).

    The **Add New Drive** pop-up window displays (see Figure 7).
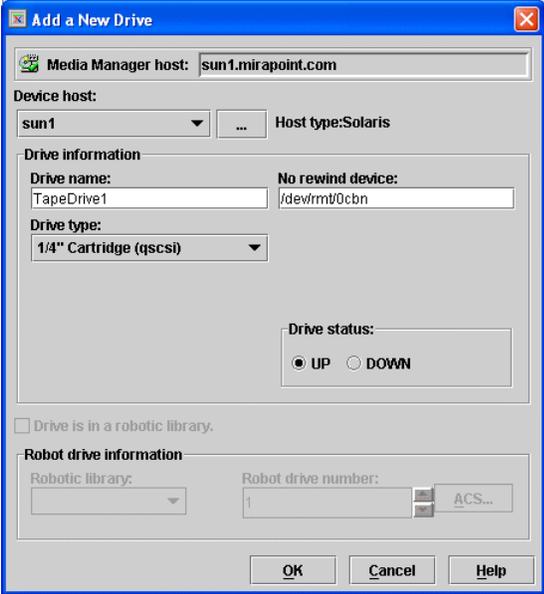
Figure 7   Add a New Device Pop-Up Window

2. Enter the appropriate data in the following fields:

❖ **Device Host:** Type the host name of the NetBackup server you are working with.

❖ **Drive Name:** Type an informative name of your choosing, for example dlt7000.

❖ **No Rewind Device:** Type the host name for the server where the tape device is attached, followed by a colon, and the name of the tape device (for example: `/dev/rmt/0cbn`).

❖ **Drive Type:** Select the appropriate drive type from the pull-down list.

3. Click **Drive is in a Robotic Library.**

4. Click **OK**.

Creating the Storage Unit

After adding the tape library (robot) and the tape devices to that robot, you create the storage unit.

A **storage unit** is the set of drives in a robot, or consists of one or more single tape drives that connects to the same host.

From the **Main Menu**, under **NetBackup Management**, highlight and right click on **Storage Units**, then do the following:
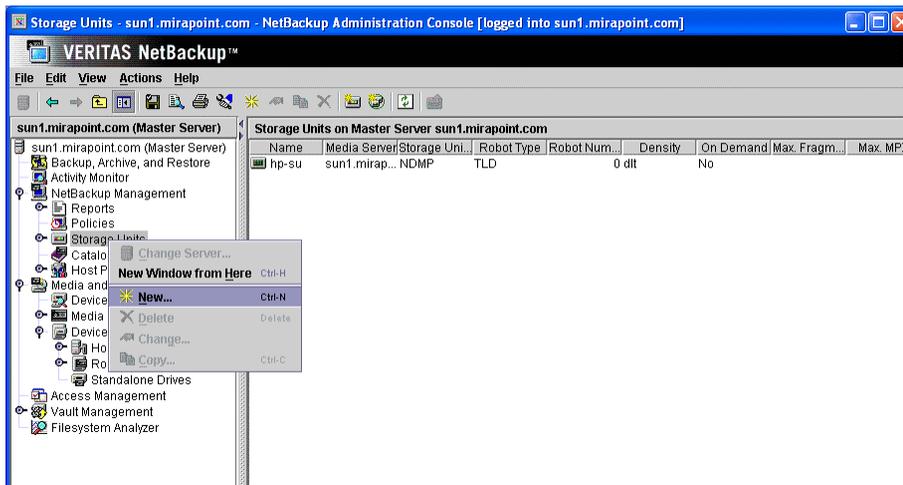
Figure 8   Adding a New Storage Unit Using the Navigation Menu

1. Select **New Storage Unit.** The **Add a New Storage Unit** pop-up window displays (see Figure 9).

2. Enter the appropriate data in the following fields:

Figure 9   Add a New Storage Unit Pop-Up Window

❖ **Storage Unit Name:** Enter a descriptive name of your choosing for a virtual storage unit within the NetBackup client.

❖ **Storage Unit Type:** Select **NDMP.**

❖ **Media Server:** Enter the host name for the media server. This is the NetBackup server.

❖ **NDMP Host:** Enter the host name of the NetBackup server (the Solaris server.

❖ **Robot Type:** Select the type of device to be used for backup storage.

❖ **Robot Number:** Select the same number assigned when the robot was created (see Adding a Robot (Tape Library) on page 6).

❖ **Drive Density:** Enter the appropriate information for your tape drive device.

❖ **Limits: Maximum concurrent drives**: Leave the entry set to **1.**

3. Click on **On Demand Only** to select the option.

4. Click on **OK.**

Creating a Class or Policy

A **policy** defines the backup characteristics for a group of one or more clients that have similar backup requirements.

From the **Main Menu** under the **NetBackup Management,** select **Policies > Edit > New.** The **Add a New Policy** pop-up window displays. Do the following:

1. Type the policy name of your choosing in the dialog box.

Figure 10   Add a New Policy Pop-Up Window

2. Click **OK**. The **Change Policy** pop-up window displays for the new policy you just created.
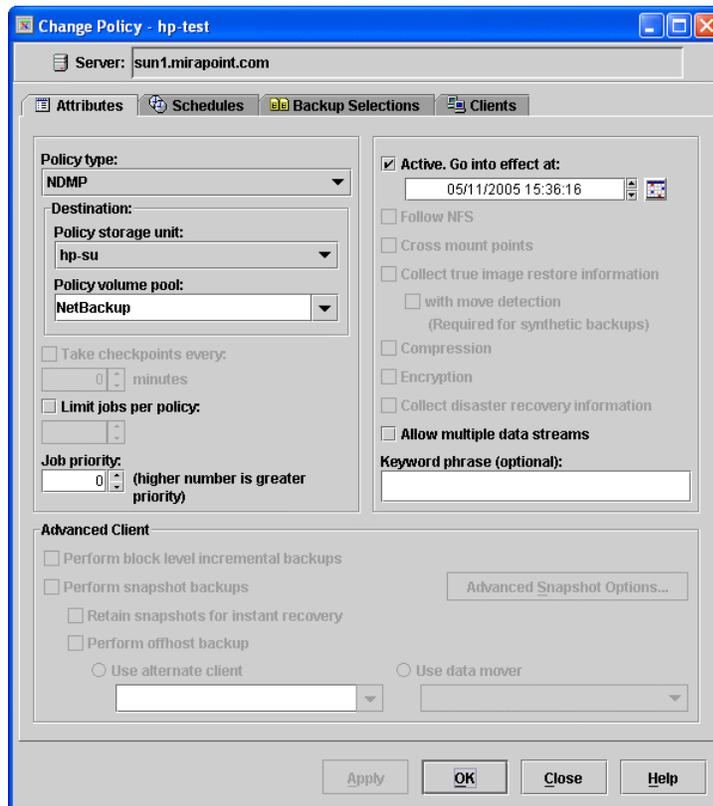
Figure 11   Change Policy Pop-Up Window (Attribute Tab Shown)

Do the following:

a. On the **Attributes** tab, locate **Policy type,** then from the drop-down menu select **NDMP.**

b. Locate **Policy Storage Unit** in the **Destination** pane of the pop-up window. From the drop-down menu, select the storage unit you created in Creating the Storage Unit on page 10.

a. Locate **Policy volume pool** in the **Destination** pane of the pop-up window. From the drop-down menu, select **NetBackup**.

Defining Backup Selections

From the **Change Policy** pop-up window, select the **Backup Selections** tab. The following directives should be displayed:

```
Set HIST=y or Set HIST=d

Set TYPE=image

/usr/store
```

If you do not want to use the selective restore from image feature, HIST= should be set to n.

If no directives are displayed on the list, follow the instructions in Adding Directives to the Policy Directory Selections List on page 13.

If only the /usr/store entry is on the list, follow the instructions in Inserting Directives in Existing Policy Directory Selections List on page 14 to add the other required directives.

If any of the specified directives or pathname appear on the list, but have values other than those specified, follow the instructions in Changing a Directive or Pathname on page 16.

Adding Directives to the Policy Directory Selections List

All directives for a given pathname must appear before that pathname on the list if they are to be correctly applied. Therefore, the set HIST= and TYPE= directives must appear on the list before the /usr/store pathname. The set HIST= directive must proceed the set TYPE= directive.

To add directives or the pathname, do the following:

1. Click the **New** button on the **Change Policy Backup Selections** tab. The **Add Backup Selection** pop-up window displays.
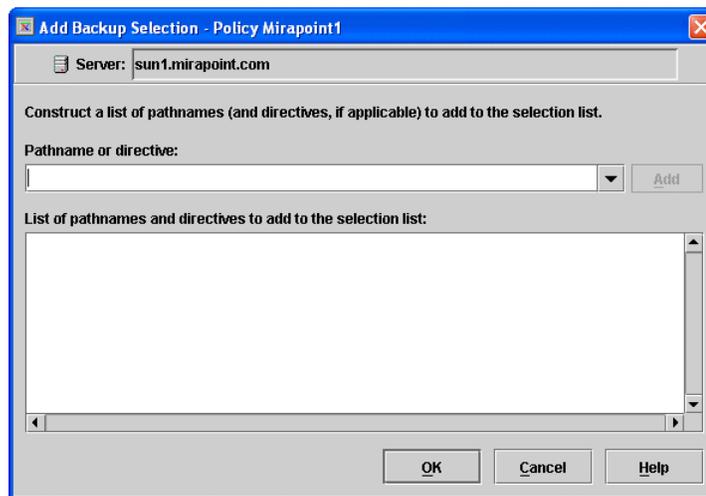
Figure 12   Add Files Pop-Up Window

2. Type `set HIST=y` in the **Pathname or directive** text box.

3. Click **Add.**

4. Type `set TYPE=image` in the **Pathname or directive** text box.

5. Click **Add.**

6. Type the pathname `/usr/store` in the **Pathname or directive** text box.

7. Click **Add.**

8. Click **OK.**

The **Add Backup Selection** pop-up window closes, and the **Change Policy Backup Selections** tab should now display the policy directives in the correct order (see Figure 13).
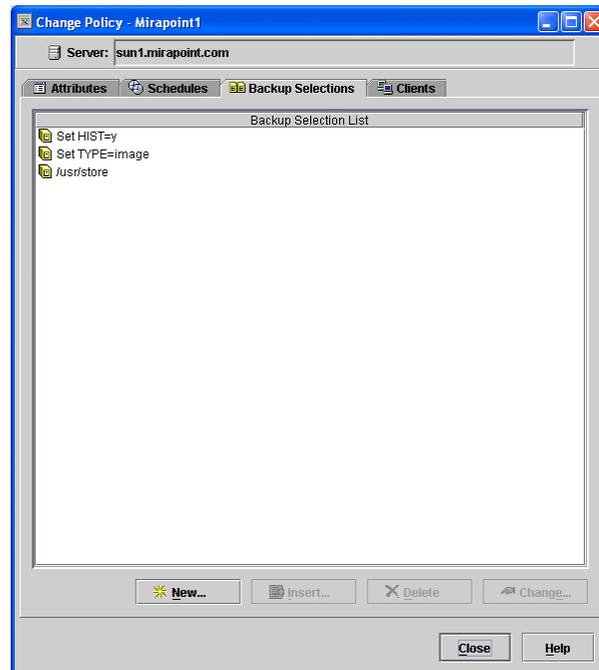
Figure 13   Backup Selection Tab Populated With Directives

Inserting Directives in Existing Policy Directory Selections List

If your policy file settings includes the `TYPE=` directive and the `/usr/store` pathname, but not the `HIST=` directive, you must add it to the list.

Remember, All directives for a given pathname must appear before that pathname on the list if they are to be correctly applied. Therefore, the set `HIST=` and `TYPE=` directives must appear on the list before the `/usr/store` pathname.

From the **Change Policy Directory Selections** tab, do the following:

1. Highlight the **Set TYPE=** entry on the **Directory Selection List.**
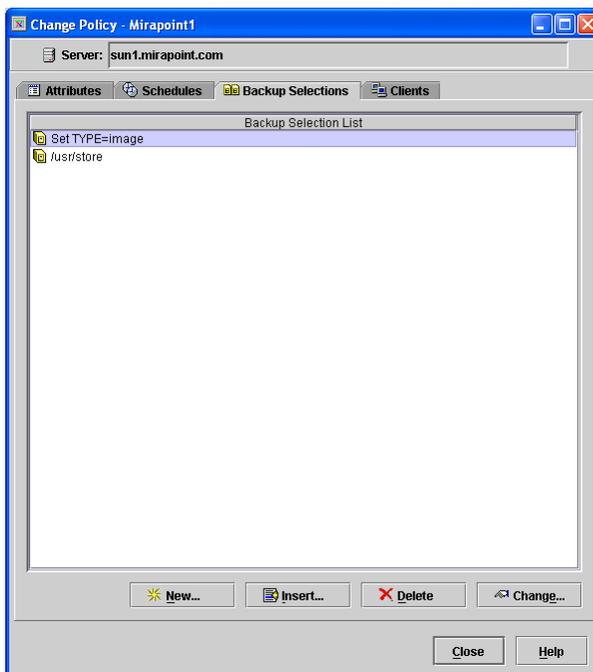
Figure 14 Inserting a New Directive

2. Click the **Insert** button (see Figure 14). The **Insert Backup Selection** pop-up window displays.

Figure 15 Insert Backup Selection Pop-Up Window

3. Type `set HIST=y` in the **Pathname or directive** text box.

4. Click **Add.**

5. Click **OK.**

The pop-up window closes, and the display reflects the changes.

15

Changing a Directive or Pathname

If the history directive appear on the **Pathname or Directive List,** but has values other than what is specified in this document, you must change it. Do the following:

1. Highlight the **Set HIST=** entry on the **Pathname or Directive List**.

2. Click the **Change** button (see Figure 14). The **Change Directory Selection** pop-up window displays.

Change Backup Selection - Policy Mirapoint1

Server: sun1.mirapoint.com

Pathname or directive:

Set HIST=d

OK   Cancel   Help

Figure 16 Change Files Pop-Up Window

3. Type correct value for the directive you selected in the **Pathname of directive** text box. For example:

```
Set HIST=y
```

4. Click **OK**.

Defining a Schedule

Schedules control when backups occur. Additionally, it defines various aspcts of the back up (full, incremental) and how long NetBackup retains the image.

From the Change Policy pop-up window, select the **Schedule** tab, then do the following:

1. Click **New.** The **Add Schedule** pop-up window displays.
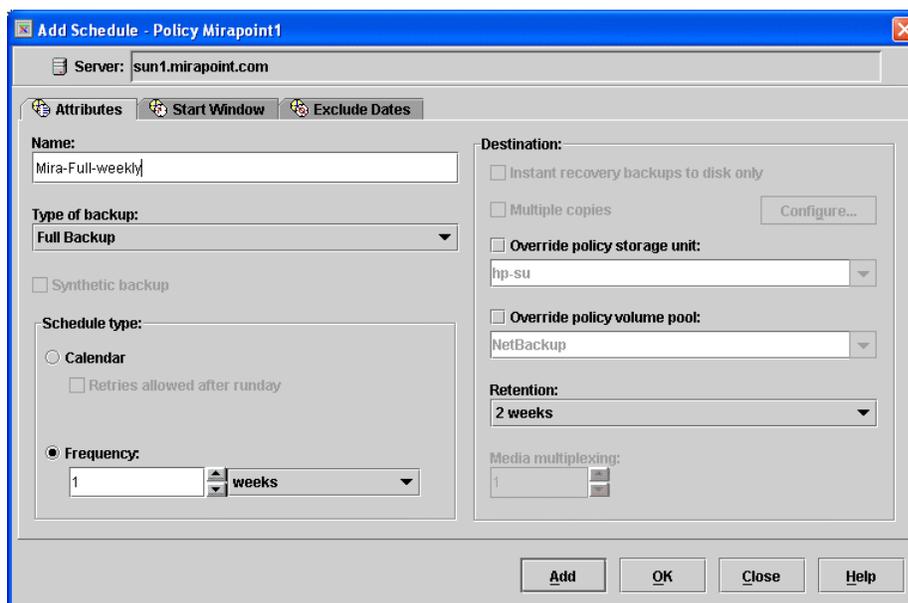
Figure 17   Add Schedule Pop-Up Window

2. On the **Attributes** tab, do the following:

   a. Type a name for the new schedule in the **Name** text box.
   b. Use the **Type of backup** drop-down menu to specify the backup
   c. Define any remaining attributes desired for this schedule.

3. Select the **Start Window** tab, and define the start and end times for this schedule.

4. Select the **Exclude Dates** tab, and define any dates to exclude that match your requirements for this schedule.

You can also define a schedule using the calendar option. Select **Calendar** to reveal the **Calendar Schedule** tab.
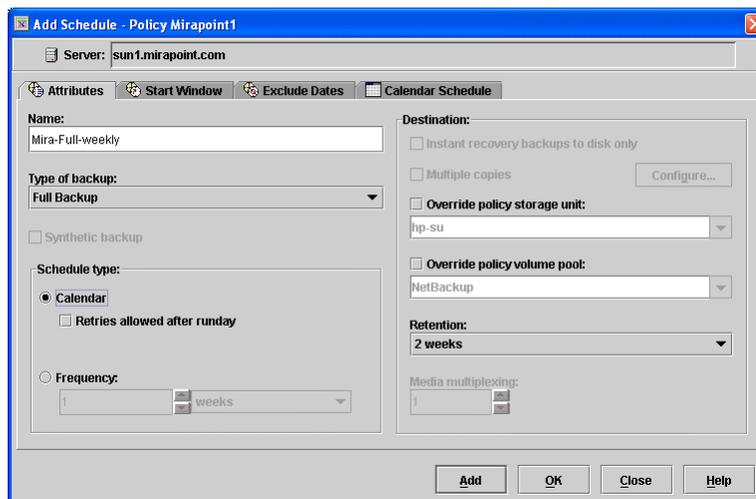
Figure 18   Add Schedule Calendar Schedule

17

Adding a Client Name

A **client** is the system or appliance with the files to be backed up, archived, or restored.

From the **Change Policy** pop-up window, select the **Clients** tab, then do the following:

1. Select **New**. The **Add Client - Policy** pop-up window displays.
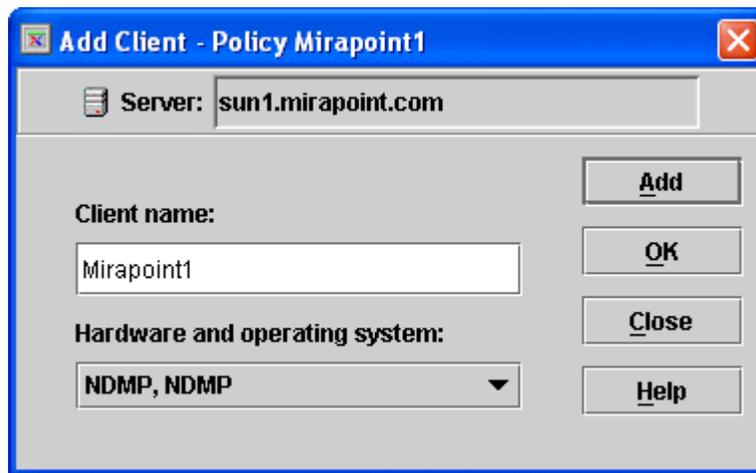
Figure 19   Add Client - Policy Pop-Up Window

2. Type the hostname of the appliance being backed-up in the **Client name** field.

3. Under **Hardware and operating system** select **NDMP, NDMP** from the dropdown list.

4. Click **OK**.

You are now ready to perform a backup.

Veritas may change their GUI setup at any time, rendering the above steps obsolete.

Testing Your NDMP Backup Configuration

After completing your NDMP backup configuration, test your settings by running a manual backup.

Before running a backup, you must make sure tape volumes are available. Volume procedures are beyond the scope of this document. Consult the manuals provided by Veritas for more information on defining and managing data volumes.

From the **Main Menu** window **All Policies** pane, highlight and right click on the policy you just created, then do the following:
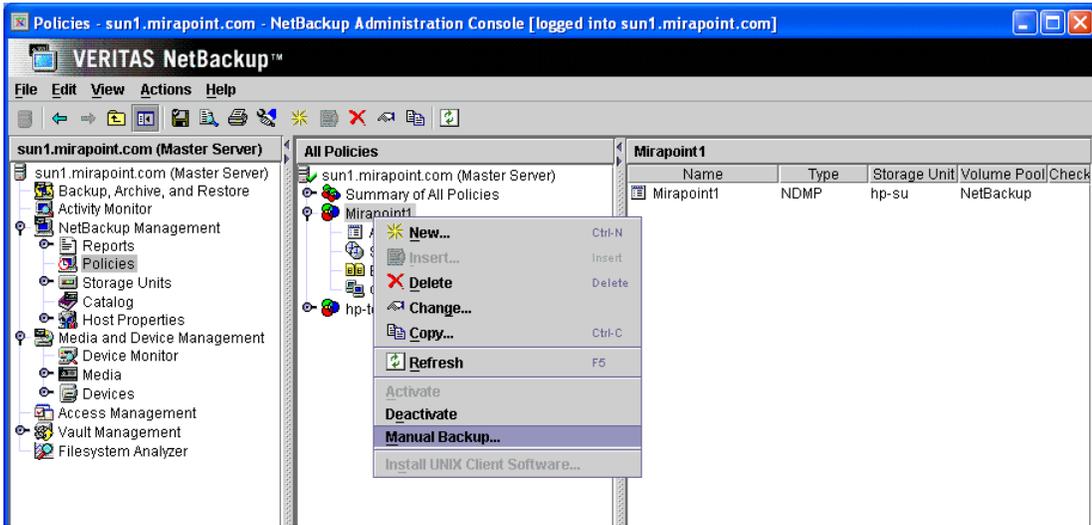
Figure 20   Running a Manual Backup

1.   Click on **Manual Backup**. The **Manual Backup** pop-up window displays.
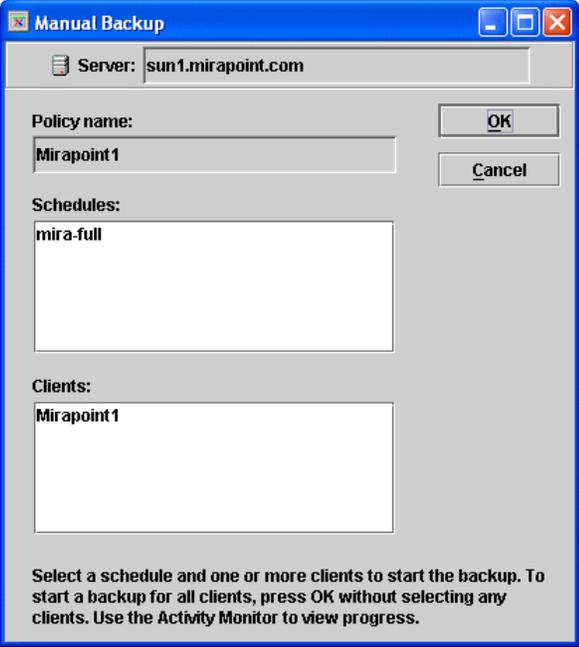
Figure 21   Manual Backup Pop-up Window

2.   Verify the settings in the **Manual Backup** pop-up window. The **Policy Name** text box should be the name of policy you selected at the beginning of this procedure. If not, click **Cancel** to return to the **Policies** screen, then select the appropriate policy.

If the policy name in the **Policy Name** text box is correct, but either the **Schedules** or **Clients** fields are incorrect, then you did not complete your configuration correctly. Return to Completing the DMA NDMP Backup Configuration on page 6 and make the necessary corrections.

3. Select the Mirapoint appliance you want to manually back-up from the **Clients** list.

4. Select a schedule. If multiple schedules are on the **Schedules** list, select any you want to use for this manual backup. If you opt to not highlight a schedule, the backup will reflect all.

5. Click **OK** to start the manual backup.

If all values in the pop-up window are correct, then click **OK** to start the manual backup.