VERITAS™

VERITAS NetBackup™ 5.0

Installation Guide

for UNIX

NetBackup Release 5.0 Revision History

The following table summarizes the revisions made to this document for NetBackup release 5.0.

Release	Date	Description
NetBackup 5.0	December 2003	Original version for this release.

Contents

Preface

The purpose of this guide is to help NetBackup system administrators install NetBackup™. The NetBackup system administrator is responsible for maintaining backups and disaster recovery plans using NetBackup.

This guide assumes:

◆ A basic understanding of UNIX system administration.

◆ Experience with the system on which NetBackup is to be installed.

◆ Your SCSI devices are properly attached and configured for the operating system.

Caution If a device is not properly configured for the operating system, backups made to that device may lead to backup failures and/or data loss.

What Is In This Manual?

◆ Chapter 1, "NetBackup Basics," provides a high-level overview of NetBackup architecture and introduces some common NetBackup terms.

◆ Chapter 2, "Installation and Initial Configuration," contains detailed instructions on using the installation scripts to install NetBackup.

◆ Chapter 3, "Performing an Upgrade Installation," contains instructions on upgrading NetBackup.

◆ Chapter 4, "Uninstall NetBackup Server Software," explains how to uninstall the NetBackup software.

◆ Chapter 5, "Installing NetBackup Client Software," explains how to install NetBackup on different NetBackup clients.

◆ Appendix A, "Related Documents," describes the manuals pertaining to NetBackup.

Getting Help

Use the VERITAS Technical Support Web site to get help for NetBackup if you have questions.

Accessing the VERITAS Technical Support Web Site

The VERITAS Technical Support web site allows you to do any of the following:

◆ obtain updated information about NetBackup, including system requirements, supported platforms, and supported peripherals

◆ contact the VERITAS Technical Support staff and post questions to them

◆ get the latest patches, upgrades, and utilities

◆ view the NetBackup Frequently Asked Questions (FAQ) page

◆ search the knowledge base for answers to technical support questions

◆ receive automatic notice of product updates

◆ find out about NetBackup training

◆ read current white papers related to NetBackup

The address for the VERITAS Technical Support web site follows:

    http://support.veritas.com

Using VERITAS Telephone and E-mail Support

Telephone support for NetBackup is only available with a valid support contract. To contact VERITAS for technical support, dial the appropriate phone number listed on the Technical Support Guide included in the product box and have your product license information ready for quick navigation to the proper support group.

▼ **To locate the telephone support directory on the VERITAS web site**

   1. Open `http://support.veritas.com` in your web browser.

   2. Click the **Phone Support** icon. A page that contains VERITAS support numbers from around the world appears.

▼ **To contact support using E-mail on the VERITAS web site**

   1. Open `http://support.veritas.com` in your web browser.

2. Click the **E-mail Support** icon. A brief electronic form will appear and prompt you to:

   ◆ Select a language of your preference

   ◆ Select a product and a platform

   ◆ Associate your message to an existing technical support case

   ◆ Provide additional contact and product information, and your message

3. Click **Send Message**.

Related Resources

Glossary

If you encounter unfamiliar terminology, consult the NetBackup online glossary. The glossary contains terms and definitions for NetBackup and all additional NetBackup options and agents.

The NetBackup online glossary is included in the NetBackup help file.

▼ **To access the NetBackup online glossary**

1. In the NetBackup Administration Console (or from the Backup, Archive, and Restore client interface), click **Help** > **Help Topics**.

2. Click the **Contents** tab.

3. Double-click **Glossary**.

4. Click **NetBackup Glossary of Terms**.

The glossary displays in a help window. Use the scroll function to navigate through the glossary.

Additional NetBackup Server and Client Installations Terms

The following terms are used in this document in reference to clustered environments.

Active node

The designated node in a clustered environment where NetBackup is installed and from which NetBackup can push software to other nodes in the cluster. In addition, the NetBackup daemons are running on an active node.

Inactive node

An inactive node in a clustered environment has NetBackup installed, however NetBackup and the NetBackup daemons are not running.

Migrating

Migrating, commonly referred to as failover, occurs when a node becomes unavailable, and the cluster resources are migrated to an available node.

Nodes

In a server cluster, two or more servers (called nodes) are linked in a network, and run cluster software that allows each node access to the shared SCSI bus to which any number of disks can connect.

Primary node or preferred node

The node in a clustered environment that is intended to be active the majority of the time.

Virtual Host name

The name of the cluster as known by the NetBackup environment. This is the name that the clients will have in their server list. It is also the name that the server uses when communicating to the client nodes.

Virtual IP address

This is the IP address of the cluster and the address that the virtual server name should resolve to.

Accessibility Features

NetBackup contains features that make the user interface easier to use by people who are visually impaired and by people who have limited dexterity. Accessibility features include:

◆ Support for assistive technologies such as screen readers and voice input (Windows servers only)

◆ Support for keyboard (mouseless) navigation using accelerator keys and mnemonic keys

For more information, see the *NetBackup System Administrator's Guide, Volume I.*

Conventions

The following section explains typographical and other conventions used in this guide.

Product-Specific Conventions

The following term is used in NetBackup documentation to increase readability while maintaining technical accuracy.

◆ Microsoft Windows, Windows

Generic terms used to describe a specific product or operating system developed by Microsoft, Inc. Some examples are, Windows 2000, Windows Server 2003, Windows servers, Windows clients, Windows platforms, or Windows GUI. For more information on the Windows operating systems that NetBackup supports, refer to the *VERITAS NetBackup Release Notes for UNIX and Windows* or go to the VERITAS support web site at `http://support.veritas.com`.

Note When a specific Windows product is identified in the documentation, only that particular product is valid in that instance.

Typographical Conventions

Here are the typographical conventions used throughout the manuals:

Conventions

Convention	Description
GUI Font	Used to depict graphical user interface (GUI) objects, such as fields, listboxes, menu commands, and so on. For example: Enter your password in the **Password** field.
Italics	Used for placeholder text, book titles, new terms, or emphasis. Replace placeholder text with your specific text. For example: Replace *filename* with the name of your file. Do *not* use file names that contain spaces.
	This font is also used to highlight NetBackup server-specific or operating system-specific differences. For example: *This step is only applicable for NetBackup Enterprise Server.*

Conventions (continued)

Convention	Description
Code	Used to show what commands you need to type, to identify pathnames where files are located, and to distinguish system or application text that is displayed to you or that is part of a code example.
Key+Key	Used to show that you must hold down the first key while pressing the second key. For example: Ctrl+S means hold down the Ctrl key while you press S.

You should use the appropriate conventions for your platform. For example, when specifying a path, use backslashes on Microsoft Windows and slashes on UNIX. Significant differences between the platforms are noted in the text.

Tips, notes, and cautions are used to emphasize information. The following samples describe when each is used.

Tip   Used for nice-to-know information, like a shortcut.

Note   Used for important information that you should know, but that shouldn't cause any damage to your data or your system if you choose to ignore it.

Caution   Used for information that will prevent a problem. Ignore a caution at your own risk.

Command Usage

The following conventions are frequently used in the synopsis of command usage.

brackets [ ]

The enclosed command line component is optional.

Vertical bar or pipe (|)

Separates optional arguments from which the user can choose. For example, when a command has the following format:

command *arg1*|*arg2*

In this example, the user can use either the *arg1* or *arg2* variable.

Navigating Multiple Menu Levels

When navigating multiple menu levels, a greater-than sign (>) is used to indicate a continued action.

The following example shows how the > is used to condense a series of menu selections into one step:

❖ Select **Start** > **Programs** > **VERITAS NetBackup** > **NetBackup Administration Console**.

The corresponding actions could be described in more steps as follows:

1. Click **Start** in the task bar.

2. Move your cursor to **Programs**.

3. Move your cursor to the right and highlight **VERITAS NetBackup**.

4. Move your cursor to the right. First highlight and then click **NetBackup Administration Console**.

NetBackup Basics 1

This chapter is designed to provide you with a basic understanding of the features and functions of your product. Included are definitions of a few key NetBackup terms to assist you in this process.

Installing NetBackup software on the server and NetBackup client software on each of your remote computers provides an easy-to-use, reliable solution for backing up and restoring data.

How does NetBackup work?

NetBackup has three primary functions:

◆ Enables users to create backup policies to back up data

◆ Saves backup catalogs and stores the data until you need to retrieve it

◆ Retrieves the data you have stored while providing a robust recovery tool should a disaster occur

What is a backup policy?

A backup policy allows you to configure how and when backups are to be performed for your group of clients, all having similar backup requirements. Your backup policy will be configured when you determine:

◆ Which computers to back up

◆ Which files and folders to back up

◆ How often and when the backup takes place

◆ How long the backup will be retained

◆ Where the backups are stored

◆ Other attributes for customizing the backup

What are Catalog Backups?

NetBackup keeps vital information about your (regular) backups in a set of files called a catalog. Catalogs can be in two formats, ASCII and binary, and contain information about configuration, status, errors, and the files and folders that have been backed up. The catalog also keeps track of the location of the backed-up data.

NetBackup provides an enhanced catalog format designed to improve the scalability and performance of catalog access in NetBackup. This binary catalog format improves catalog performance for browsing and searching on disk catalogs, and in some cases, it reduces the catalog file size. The binary catalog format is written by NetBackup on all platforms. (For more information about the catalog format feature, see the *NetBackup System Administrator's Guide, Volume I*.)

A *catalog backup* is a backup copy of the catalog, which is necessary for NetBackup operations. For example, if a disk failure results in the loss of your catalog files, the easiest way to recover is to restore the catalog from its backup copy. This copy allows you to restore previously backed up data and resume your regularly scheduled backups. The process of backing up a catalog is the same for either catalog format.

What are the functional parts of NetBackup?

The following subsections describe basic terms and features to increase your understanding of how NetBackup works.

The following diagram shows the basic architecture of a NetBackup Enterprise server configuration. The following subsections describe each of the major pieces within this configuration, the master server, media servers, and NetBackup clients.
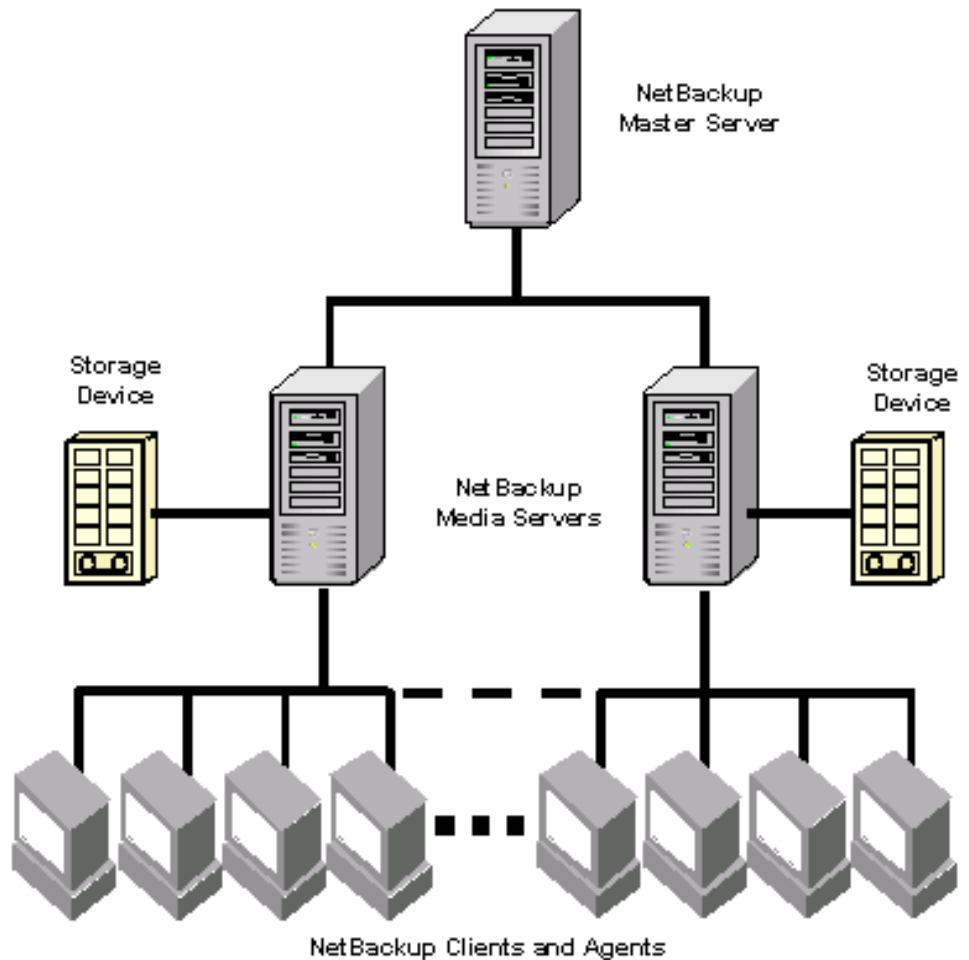
Master Server

The *Master Server* is the computer where NetBackup software is typically installed first. There can be only one Master Server per backup domain. The Master Server, with NetBackup installed, is responsible for the following functions:

◆ Contains the backup configurations and policies

◆ Runs the Scheduler that initiates the automated backups

◆ Maintains databases/catalogs that track the location and contents of all backups

◆ Communicates with Media Servers to initiate backup and restore processes

◆ Provides both a command line interface and a graphical user interface, which allow you to:

◆ Configure the backup operations.

◆ Schedule automatic, unattended backups (regular backups). For example, to prevent interference with normal daytime operations, you can schedule your automatic backups to occur only at night.

◆ Perform manual backups of any client.

◆ Allow client users to perform their own backups and restores.

◆ Control where backups are stored.

◆ Control how long backup data is retained.

◆ Restore data to any client.

◆ Run reports to verify, manage, and troubleshoot backups and restores. These reports show status or highlight problems with NetBackup servers and clients.

◆ Monitor the status of backup and restore jobs.

◆ Configure and manage your tapes and storage devices.

Media Servers

A *Media Server*, in a NetBackup Enterprise Server configuration, can be a standalone server that receives requests for backup and restore operations from the Master Server. (A master server can also be configured as a media server.) There can be multiple Media Servers in a backup domain. In a NetBackup Server configuration, the media server is the same machine as the master server.

Media Servers can:

◆ Communicate with the Media Manager (on the same system) to select media for backup and restore operations. Refer to "Media Manager" on page 7 for more information.

◆ Communicate with NetBackup Clients during a backup or restore operation

◆ Monitor the status of storage devices

NetBackup Clients

NetBackup Clients are the remote computers that have NetBackup client software installed. A NetBackup Server and a NetBackup Enterprise Server configuration can virtually have an unlimited number of clients for each backup domain. With the proper conditions set, a client can direct a user request to the Master Server to perform a backup or restore operation.

Clients can perform the following functions:

◆ Validate connection requests from the NetBackup server

◆ Support compression of the backup stream

◆ Support include and exclude lists

In general, NetBackup clients can have any combination of the following operating systems:

◆ AIX

◆ Alpha Tru64

◆ HP-UX

◆ Linux

◆ Macintosh

◆ Novell

◆ Solaris

◆ Windows NT/2000/XP (32 and 64 bit)/2003 (32 and 64 bit)

For a complete list of supported clients and corresponding version numbers, refer the *NetBackup Release Notes for UNIX and Windows*.

Storage Unit

A *storage unit* is a term that describes a storage device where NetBackup stores files and data. A storage unit can be a location on a disk, a set of drives in a robot, or one or more single tape drives of the same type that connect to the same host.
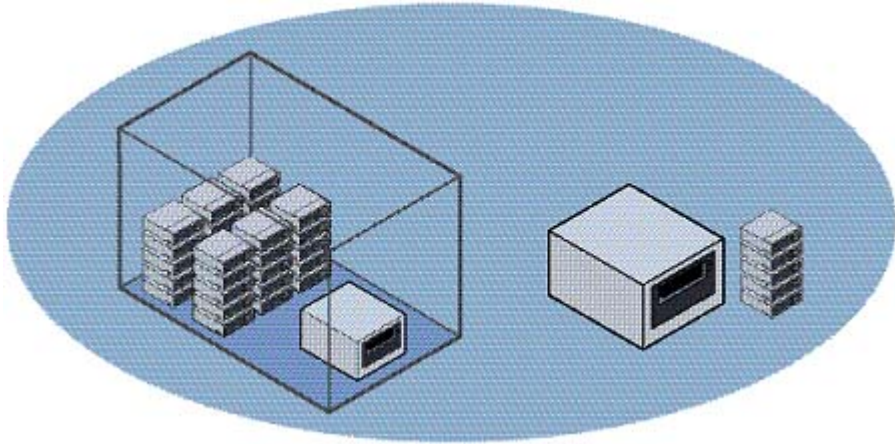
In the following diagram, the storage unit node is listed in the tree in the left window pane and the specific units will appear in the right pane.
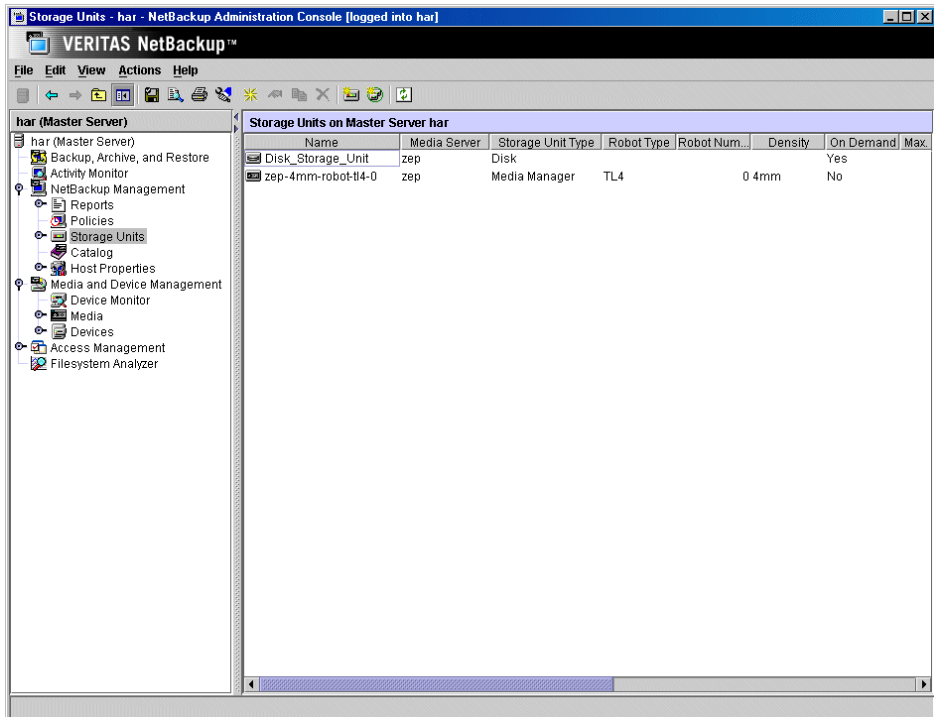
Storage units simplify administration because once they are defined the NetBackup configuration points to a storage unit rather than to the individual devices it contains. For example: if a storage unit contains two drives and one is busy, NetBackup can use the other drive without administrator intervention.

Media

Media can be physical magnetic tapes, magnetic disks (also called removable media), or optical disks. Media is where data is stored. Non-removable media, commonly referred to as *hard disk share*, is usually a directory on a hard disk.

Media Manager

Media Manager, which is part of NetBackup, manages the robots, tape drives, and removable media. Media Manager primarily uses four tools:

◆ The Device Configuration Wizard, which guides you through device configuration in a step-by-step manner.

◆ The Volume Configuration Wizard, which guides you through volume configuration in a step-by-step manner.

◆ The Media and Device Management graphical interface, which allows you to reconfigure storage devices and volumes separately.

◆ The Device Monitor graphical interface, which displays any pending requests for volumes and allows you to control and manage devices.

Graphical Interfaces

The NetBackup-Java Administration Console that is installed on a server is used for configuring, scheduling, monitoring, and managing NetBackup. The NetBackup user interface that is installed on a client can be used for starting backups, managing archives, and initiating restores for that particular computer. The following figures are examples of both of these interfaces.
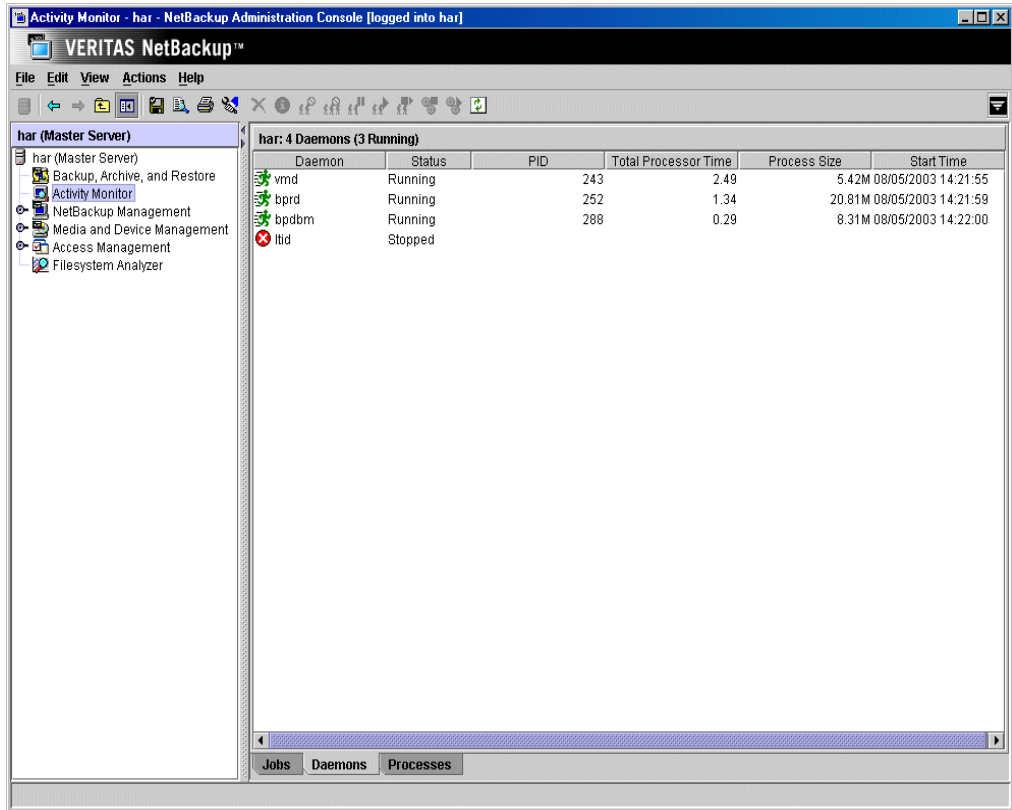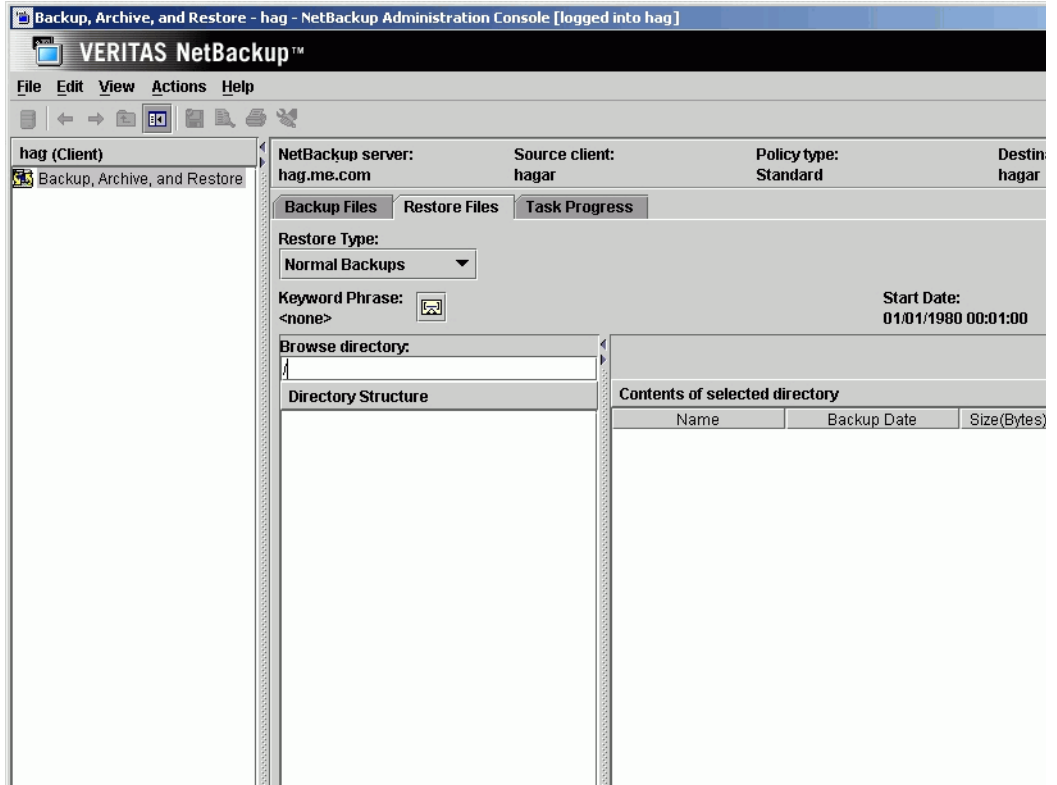
NetBackup Wizards

NetBackup provides the following wizards to assist you with installation and
configuration. Once you have completed your initial setup with the Getting Started
wizard, the individual configuration wizards allow you to reconfigure devices, volumes,
catalog backups, and backup policies separately as needed.

Wizards	Description
Getting Started	Provides step-by-step help for configuring NetBackup. By responding to a series of prompts, the Getting Started wizard guides you through the following procedures for initial setup: ◆ Device Configuration ◆ Volume Configuration ◆ Catalog Backup Configuration ◆ Backup Policy Configuration ◆ A test to verify your configuration
Configure Storage Devices	Helps you define robots and drives.
Configure Volumes	Helps you define volumes for robots and standalone drives.
Configure Catalog Backup	Helps you configure how and when the NetBackup catalog is backed up.
Create a Backup Policy	Helps you configure regular backups for a client or a set of clients.

Installation and Initial Configuration 2

NetBackup includes wizards that make installing and configuring the software easy.

Installing and configuring NetBackup involves the following steps as explained in this chapter:

1. Mounting a NetBackup CD-ROM

2. Installing NetBackup Server Software

3. Configuring Automatic Startup and Shutdown of NetBackup

4. Configuring Storage Devices for the Operating System

5. Configuring NetBackup Server Software

6. Installing Alternative Administration Interfaces

7. Installing NetBackup Agents and Options (Optional)

Mounting a NetBackup CD-ROM

Proper mounting of the NetBackup CD-ROM is essential to a successful product install. This section details how to mount the NetBackup CD-ROM on selected platforms. Use the directions as a guideline for mounting this CD-ROM on your system. You may need to use other flags or mounting options.

Note For additional support on how to mount a CD-ROM on your system, contact your hardware vendor.

Find the platform that matches your configuration, follow the provided steps to mount the CD-ROM, and then continue with the NetBackup installation procedure. The platforms covered in this section are:

◆ AIX	◆ HP-UX
◆ Alpha Tru64	◆ IRIX
◆ FreeBSD	◆ UNIXWARE

AIX

1. Login as root.

2. Mount the CD-ROM using either of the following methods:

   ◆ You can use the `smitty cdrfs` and `smitty mountfs` commands to mount the CD-ROM.

      ◆ Enter:

        `smitty cdrfs`

        OR

      ◆ Enter:

        `smitty mountfs`

        Follow the instructions to mount the CD-ROM file system.

   ◆ You can also mount the CD-ROM manually.

      ◆ Create the mount point (for example, `mkdir /cdrom`).

      ◆ Enter:

        `mount -v cdrfs -r device_path mount_point`

        For example, to mount the CD-ROM manually using `/cdrom` as the mount point, you would enter:

        `mount -v cdrfs -r /dev/cd0 /cdrom`

Alpha Tru64

1. Login as root.

2. Create the mount point (for example, `mkdir /cdrom`).

3. Enter:

```
mount -r -t cdfs -o noversion device_path mount_point
```

For an Alpha 5.x system using `/cdrom` as the mount point, you would enter:

```
mount -r -t cdfs -o noversion /dev/disk/cdrom0a /cdrom
```

FreeBSD

1. Login as root.

2. Create the mount point (for example, `mkdir /cdrom`).

3. Enter:

```
mount -r -t cd9660 device_path mount_point
```

For example, to mount the CD-ROM using `/cdrom` as the mount point, you would enter:

```
mount -r -t cd9660 /dev/acd0c /cdrom
```

HP-UX

1. Login as root.

2. Create the mount point (for example, `mkdir /cdrom`).

3. Enter:

```
nohup pfs_mountd &
```

4. Enter:

```
nohup pfsd &
```

5. Enter:

```
pfs_mount -o xlat=unix device_path mount_point
```

To find the device path, you can enter `ioscan -fn`.

For example, to mount the CD-ROM using `/cdrom` as the mount point, you would enter:

```
pfs_mount -o xlat=unix /dev/rdsk/c3t2d0 /cdrom
```

▼ **To unmount the CD-ROM:**

1. Enter:

```
pfs_umount mount_point
```

For example, to unmount the CD-ROM using `/cdrom` as the unmount point, you would enter:

```
pfs_umount /cdrom
```

2. Use the `kill` command to kill the following processes:

```
pfs_mountd
pfsd
pfs_mountd.rpc
pfsd.rpc
```

IRIX

1. Login as root.

2. You can use the `mediad` command to auto-mount the CD-ROM.

3. If `mediad` fails:

a. Create the mount point (for example, `mkdir /cdrom`).

b. Enter:

```
mount -o ro -t iso9660 device_path mount_point
```

To find the `device_path` you can run a hardware inventory with the `hinv` command and locate the CD-ROM `device_path`.

For example, to mount the CD-ROM using `/cdrom` as the mount point, you would enter:

```
mount -o ro -t iso9660 /dev/rdsk/dks0d6vol /cdrom
```

For the `device_path`, the `'s0'` refers to the SCSI controller and the `'d6'` refers to the `device_path` of the CD-ROM drive (for example, `/dev/rdsk/dks0d6vol`).

Linux

1. Login as root.

2. Create the mount point (for example, `mkdir /cdrom`).

3. Enter:

    ```
    mount /dev/cdrom /mnt/cdrom
    ```

UNIXWARE

1. Login as root.

2. Create the mount point (for example, `mkdir /cdrom`).

3. Enter:

    ```
    mount -F cdfs -o -ro device_path mount_point
    ```

    For example, to mount the CD-ROM using `/cdrom` as the mount point, you would enter:

    ```
    mount -F cdfs -o ro /dev/cdrom/c1b0t0l0 /cdrom
    ```

Installing NetBackup Server Software

Before running the NetBackup installation script, first review "What Does the Install Script Do?" and "Before Starting the Install Script" below.

Note If you are performing an upgrade, refer to "Performing an Upgrade Installation" on page 41.

Caution Before installing your NetBackup product, make sure you have the most current operating system patches and updates applied to your system. If you are not certain of your OS level, contact your OS vendor and request the latest patches and upgrades.

What Does the Install Script Do?

In addition to installing NetBackup on the server, the install script does the following:

◆ Places the name of the host in the /usr/openv/netbackup/bp.conf file on the server. In a clustered environment, it places the virtual host name in the /usr/openv/netbackup/bp.conf file on the server.

◆ For Solaris installations only: The install prompts you for the name of an alternate root path. This enables installation to an alternate boot environment which is mounted for access. For example, Host B's root, usr, and var file systems can be mounted on Host A as /alt, /alt/usr, or /alt/var. While logged on to Host A, you can specify /alt as the alternate root environment to install NetBackup on Host B. This feature applies to NetBackup only, and not add-ons or database agents.

◆ Adds entries to the /etc/services file for NetBackup and Media Manager services (for example, robotic daemons). The /etc/services file contains UNIX system information. The script shows the default port numbers and asks if you want to change them.

◆ Checks to see if your server is running Network Information System (NIS). NIS is the UNIX directory service utility. If it is running, you are instructed to add entries to your NIS services map.

◆ Adds entries to the following server file and directory to facilitate networking:

   ◆ On RedHat Linux 7.x: /etc/inetd.conf file

   ◆ On RedHat Linux 7.x: /etc/xinetd.d directory

   Entries are added for bpcd, vnetd, vopied, and bpjava-msvc. Then, the script sends inetd (or xinetd) a SIGNAL, causing it to read the updated file.

> **Note** Before you install or use NetBackup on a Linux (RedHat/SuSE) client, verify that the `inetd` (or `xinetd`) service is started on that machine. This will ensure proper communication between the NetBackup master server and the Linux (RedHat/SuSE) client.

◆ Adds automatic startup and shutdown scripts to the appropriate directories on the various supported platforms.

Before Starting the Install Script

Review this section before starting the installation.

Installation Requirements

◆ VERITAS recommends that you remove any other vendor backup software currently configured on your system before installing this product. Other vendor backup software can negatively affect how NetBackup installs and functions.

◆ Make certain that you have a server of a supported hardware type running a supported version of its operating system (with applicable patches), adequate disk space, and supported peripherals. For details on these requirements, refer to the *NetBackup Release Notes for UNIX and Windows*.

◆ For reasonable performance of the NetBackup-Java interfaces, VERITAS recommends 512 MB of RAM, of which 256 MB are available to the interface program (`jnbSA` or `jbpSA`).

◆ The NetBackup CD-ROM.

◆ The minimum screen resolution configuration is 1024X768 256 colors.

◆ The root password for the server and appropriate license keys.

◆ About 20 minutes to install the server software. Additional time is required to configure the product for your environment.

◆ For some peripherals and platforms, kernel reconfiguration is required. For more details, see the *NetBackup Media Manager System Administrator's Guide for UNIX*.

◆ NetBackup requires server networking on the RedHat Linux platform.

◆ All NetBackup servers must recognize and be recognized by their client systems. In some environments, this means that each must be defined in the other's `/etc/hosts` file. Other environments may use the Network Information Service (NIS) or Domain Name Service (DNS).

◆ Identify the devices you plan to use in your NetBackup configuration. See "Robot Type Support By Platform" in the *NetBackup Release Notes for UNIX and Windows* for a list of the robot types supported.

◆ Minimum Kernel Parameter settings on Solaris system: There are several kernel-tunable parameters, such as Message Queue, Semaphore, and Shared Memory Parameters, that can affect NetBackup performance. Adjusting these values may prevent your system performance from slowing down or even reaching a deadlock state. For additional information such as parameter definitions and examples, refer to the *NetBackup Tuning Guide for UNIX and Windows* on the VERITAS Support Web site by entering this title in the Search field.

   ◆ To avoid potential shared memory problems, the default buffer size for disk backups has been increased to 256K with this release. If you are performing multiple copies of disk and tape, the default buffer size should, at a minimum, equal the tape buffer size.

   If you encounter a `system could not allocate enough shared memory` error, you should refer to your vendor documentation for instructions on how to increase the amount of shared memory on your system. For Sun platforms, you can make the following changes to the `/etc/system` file to obtain a sufficient amount of memory.

   ```
   set shmsys:shminfo_shmmax=16777216
   set shmsys:shminfo_shmmin=1
   set shmsys:shminfo_shmmni=220
   set shmsys:shminfo_shmseg=100
   set shmsys:shminfo_semmnu=1024
   set shmsys:shminfo_semmns=1024
   ```

   After making these changes to the `/etc/system` file, reboot using the `boot -r` command. (Note, `shminfo_shmmin` must be less than or equal to 100.)

   ◆ Message Queue parameters: On some UNIX platforms with NetBackup configurations it can be necessary to increase the system's message queue resources to avoid `bpsched` hangs.

   For example, you may need to make the following changes to the `/etc/system` file:

   ```
   set msgsys:msginfo_msgmap=500
   set msgsys:msginfo_msgmnb=65536
   set msgsys:msginfo_msgssz=16
   set msgsys:msginfo_msgseg=8192
   set msgsys:msginfo_msgtql=500
   ```

   Reboot the system.

◆ Semaphore parameters: On UNIX systems, errors may occur on systems that do not have enough semaphores allocated. System requirements vary; thus, no absolute recommendations can be made. However, the following changes to the `/etc/system` file should be sufficient for an average system:

```
set semsys:seminfo_semmap=64
set semsys:seminfo_semmni=1024
set semsys:seminfo_semmns=1024
set semsys:seminfo_semmnu=1024
set semsys:seminfo_semmsl=300
set semsys:seminfo_semopm=32
set semsys:seminfo_semume=64
```

Reboot the system.

◆ Additional installation requirements for clustered environments:

◆ Make sure that each node in the cluster, on which you wish to install NetBackup, is `rsh` equivalent (on HP-UX, the command is `remsh`). As the root user you need to be able to perform a remote login to each node in the cluster without entering a password. This is only necessary for installation and configuration of the NetBackup server and any NetBackup agents and options. Once installation and configuration is complete, this is no longer required.

◆ Must have the cluster frameworks installed, configured, and started before installing NetBackup, refer to the NetBackup High Availability System Administrator's Guide for additional installation prerequisites and installation notes for installing in a clustered environment.

◆ Must have a virtual name defined using DNS, NIS, or `/etc/hosts`. The IP address is defined at the same time. (The virtual name is a label for the IP address.)

◆ Additional installation requirement for access controlled environments:

◆ The Authorization broker must reside on the Master Server.

Installation Notes

◆ *NetBackup Enterprise only:* If you are not adding any NetBackup media servers, ignore all references to them.

◆ On the NetBackup server, the install location contains the software and the NetBackup catalog and can become quite large.

If space is an issue, consider installing NetBackup on an alternate file system. The installation allows you to select an alternate install location, and creates the appropriate link from `/usr/openv`.

◆ Because the product uses file locking, VERITAS recommends that you not install NetBackup in an NFS mounted directory. File locking in NFS mounted file systems can be unreliable.

◆ For Hewlett Packard servers, install NetBackup on a file system that supports long file names.

Installing NetBackup Server

Note After installing a NetBackup server, master or media, you must enter a NetBackup product license key. On the master server, you must also enter license keys for any additional NetBackup software product options or agents used on the server or its clients.

1. Check your order to make sure that you have license keys for all the NetBackup servers, number of clients, options, and agents that you ordered.

For more information on administering NetBackup licenses, see the *NetBackup System Administrator's Guide, Volume I.*

Note After making and saving any license key updates (including adding and deleting license keys) in the NetBackup Administration Console for UNIX, you must restart the NetBackup Administration Console.

2. log on as the root user on the server.

3. Insert the CD-ROM in the drive. (Refer to "Mounting a NetBackup CD-ROM" on page 11).

4. HP-UX systems only: Because the NetBackup CD-ROM is Rockridge-formatted, it must be mounted by entering the following commands:

```
nohup pfs_mountd &
nohup pfsd &
pfs_mount -o xlat=unix /dev/dsk/device-ID /cdrom
```

Where *device_ID* is the ID of your CD-ROM drive.

5. Change your working directory to the CD-ROM directory:

```
cd cd_rom_directory
```

Where *cd_rom_directory* is the path to the directory where you can access the CD-ROM. On some platforms, it may be necessary to mount the directory. (Refer again to "Mounting a NetBackup CD-ROM" on page 11).

6. Execute the install script:

    ./install

When the menu appears, choose option 1 (NetBackup). This installs both Media Manager and NetBackup server software.

7. Follow the prompts in the installation scripts.

Note In clustered environments, during the installation, enter the virtual name for the NetBackup server and not the actual local host name

Note The installation script enables you to load the client software for each of the UNIX client types that NetBackup supports onto the server. You can then "push" this client software from the server to your UNIX clients. (Make sure you load the software for all the UNIX client types you intend to back up onto the server. Otherwise, you will not be able to add these client types to the NetBackup policy configuration.) The correct NetBackup client software is automatically installed on the master server. Do not install additional client software on any media servers.

In clustered environments, you can only push client software from the active node.

8. On HP-UX systems only: to unmount the CD-ROM, do the following:

◆ Execute the `pfs_umount` command

◆ Use the `kill` command to kill the following processes:

    pfs_mountd
    pfsd
    pfs_mountd.rpc
    pfsd.rpc

9. This step only applies to clustered environments.

a. In a clustered environment, you must repeat this installation process (Steps 1 - 8) on every node that you want NetBackup to run on. (For a TruCluster cluster, you only have to perform the install once because `/usr/openv` is shared.)

b. Execute `/usr/openv/netbackup/bin/cluster/cluster_config` on the primary node.

Note The capability to push to a client is only allowed from the primary node of the cluster.

> **Note** Robotic devices and NetBackup add-on products can be configured to fail over NetBackup if the robot or add-on product fails. Before you configure the devices to fail over, you must first configure the robots. Refer to "Configuring Storage Devices for the Operating System" on page 25 for detailed instructions. In addition, you must install and configure your add-on product before you configure the product to fail over.

Installing Access Control

The following steps outline the procedures necessary to install access control on your NetBackup system.

1. Successfully install NetBackup by performing Steps 1 through 8 in the previous section.

2. Install the VERITAS Security Services (VxSS) components on your system so that you are then able to use Access Control.

   The VxSS components reside on a clearly marked CD-ROM in your NetBackup Product package. The following table contains the minimum installation requirements as they apply to each NetBackup system where you have successfully installed NetBackup.

NetBackup System	Required VERITAS Security Services (VxSS) Components
NetBackup Master server	Authentication client and server components Authorization client and server components
NetBackup Media server	Authentication client components Authorization client components
NetBackup Client	Authentication client components

> **Note** If you want to perform a cross-platform authentication with Windows platforms, you must install an authentication broker on a Windows system. For instructions on how to install an authentication broker, refer to the *VERITAS Security Services™ Version 4.0 Administrator's Guide for Windows and UNIX*.

3. After you have finished installing NetBackup and the VxSS components applicable to the type of Netbackup system you are installing to, you will be ready to configure the access control features. For detailed information on how to configure Access Control, refer to the *NetBackup System Administrator's Guide, Vol II*.

Configure the Window Manager for Java Interface (NetBackup-Java Compatible Platforms)

Always set your window manager so windows become active only when you click inside the windows. Do not enable auto focus, which is when windows become active if you move the mouse pointer over them. The NetBackup-Java interfaces do not run properly with auto focus enabled. The following are general instructions for correctly setting up the focus.

CDE (Common Desktop Environment)

The following explains how to set up a CDE (Common Desktop Environment) window manager, which is the preferred window manager for NetBackup-Java applications.

1. On the front panel in the CDE window, click the Style Manager control icon.

   The Style Manager toolbar appears.

2. On the Style Manager toolbar, click the Window control icon.

   The Style Manager - Window dialog box appears.

3. In the Style Manager-Window dialog box, click the **Click In Window To Make Active** button.

4. Click **OK**.

5. Click **OK** when asked to "Restart the Workspace Manager".

Motif

When using the Motif window manager, set the `Mwm*keyboardFocusPolicy` X resource as follows:

```
Mwm*keyboardFocusPolicy:explicit
```

Configuring Automatic Startup and Shutdown of NetBackup

System Startup and Shutdown Scripts

You can use system startup scripts to start the Media Manager and NetBackup daemons when the system boots and shutdown scripts to terminate them at system shutdown.

Note	For servers upgrading to a new release of NetBackup, any pre-existing S77[7]netbackup,K01netbackup, or K001netbackup startup/shutdown scripts will be saved and the newly released versions of that script will be installed.

Note	In a clustered environment, all of the startup and shutdown scripts are removed from the `rc` directories.

The installation process will copy the startup/shutdown script (`/usr/openv/netbackup/bin/goodies/netbackup`) to the `init.d` directory and create links to it from the appropriate `rc` directory.

The installation process will install the links to the startup/shutdown scripts on the various platforms as follows:

AIX

```
/etc/rc.veritas.aix
```

Note	You will need to edit `/etc/inittab` to add the following entry so this script is called during a level two boot: `veritas:2:wait:/etc/rc.veritas.aix`.

Note	To shut down, add the following line to `/etc/rc.shutdown`: `/etc/rc.veritas.aix stop`.

ALPHA Tru64

```
/sbin/rc3.d/S77netbackup ->/sbin/init.d/netbackup
```

```
/sbin/rc0.d/K01netbackup ->/sbin/init.d/netbackup
```

HP-UX

```
/sbin/rc2.d/S777netbackup ->/sbin/init.d/netbackup
```

```
/sbin/rc1.d/K001netbackup ->/sbin/init.d/netbackup
```

LINUX

```
/etc/rc.d/rc2.d/S77netbackup ->/etc/rc.d/init.d/netbackup
/etc/rc.d/rc3.d/S77netbackup ->/etc/rc.d/init.d/netbackup
/etc/rc.d/rc5.d/S77netbackup ->/etc/rc.d/init.d/netbackup
/etc/rc.d/rc6.d/K01netbackup ->/etc/rc.d/init.d/netbackup
/etc/rc.d/rc0.d/K01netbackup ->/etc/rc.d/init.d/netbackup
```

SGI

```
/etc/rc2.d/S91netbackup ->/etc/init.d/netbackup
/etc/rc0.d/K01netbackup ->/etc/init.d/netbackup
```

Default (all other UNIX operating systems)

```
/etc/rc2.d/S77netbackup ->/etc/init.d/netbackup
/etc/rc0.d/K01netbackup ->/etc/init.d/netbackup
```

Configuring Storage Devices for the Operating System

Reliable use of NetBackup depends on the configuration of your storage devices. To ensure reliable backups and restores, you must configure devices for your operating system according to the instructions provided by the device and operating system vendors. This should be completed *before* you configure NetBackup itself.

Caution   An improperly configured device may lead to backup failures and/or data loss.

In a clustered environment, begin configuring all storage devices from the active node. Refer to "Configuring NetBackup Server Software" on page 27 for guidelines and instructions on configuring storage devices.

Note   For a NetBackup failover server, it is usually best to attach all of the devices to each node in the cluster on which NetBackup is installed. Refer to the clustering vendor's documentation for information on how to migrate to another node.

> **Note** To connect a device to the operating system (OS), you should read the chapter appropriate for your OS in the *NetBackup Media Manager Device Configuration Guide*. The Device Configuration Guide is available on the Netbackup CD-ROM.

▼ Preparing a newly connected storage device.

1. Consult your storage device's operating manual or front panel to learn how to set the SCSI ID (target), and then set it to an available SCSI ID.

2. Physically attach your device to a compatible host bus adapter where that SCSI ID is available. "Compatible" means that both the device and host bus adapter are of the same type (such as single-ended, high voltage differential, low voltage differential, or fibre channel).

3. This step is an optional step that applies only to clustered environments.

   Robotic devices can be configured to failover NetBackup if the robot or add-on product fails. Before you configure the devices to fail over, you must first configure the robots. Refer to the *NetBackup High Availability System Administrator's Guide* for more information.

   > **Note** Robots must be configured before performing the following instructions.

▼ To configure NetBackup to fail over if a robotic daemon fails:

a. Configure your robots on each node in the cluster.

b. Run the following script:

   ```
   /usr/openv/netbackup/bin/cluster/cluster_config -r
   ```

c. Choose **a** (Add).

d. Select your robot from the list.

   Multiple robots can be selected.

▼ To remove a robotic daemon from monitoring:

a. Run the following script:

   ```
   /usr/openv/netbackup/bin/cluster/cluster_config -r
   ```

b. Choose **d** (Delete).

    c. Select the robot type you would like to remove.

Configuring NetBackup Server Software

Once the server software and storage devices have been installed, use the Getting Started wizard on the NetBackup Administration Console to configure your product. (Refer to the *NetBackup System Administrator Guide for UNIX* for more detailed information on configuring NetBackup.)

You can configure your server at another time by starting the NetBackup Administration Console and selecting the **Getting Started** link.

Note Before configuring NetBackup, you must have the storage devices attached to the server and perform all configuration steps specified by the device and operating system vendor (including installation of any required device drivers).

Note In clustered environments, you must configure devices from every node in the cluster.

The NetBackup Administration Console, Volume I contains a group of NetBackup configuration wizards in the right window pane that enable you to do the following:

◆ Configure NetBackup for the first time using the Getting Started wizard

◆ Configure Storage Devices for NetBackup

◆ Configure Volumes

◆ Configure the Catalog Backup

◆ Create a Backup Policy

Note If you are configuring NetBackup for the first time, we recommend that you click on the **Getting Started** icon and use this set of wizards to guide you through the process. If you have already configured NetBackup and you wish to make a change to particular area, you can click on any of the remaining options.

Things to Know When Configuring Master and Media Servers

This section applies to NetBackup Enterprise Server only.

The process of configuring a master or media server is very similar, and the versatility of NetBackup enables you to install either server first. However, VERITAS recommends that you install and configure the master server before you install and configure a media

server. You can then configure the media server information (such as storage devices and volumes) on the master to ensure the master server will properly administer the media server. The following list contains some helpful tips when configuring a media server.

Note Unless otherwise noted, if a master or media server is part of a cluster, its host name should be the virtual name of the cluster. Refer to the *NetBackup High Availability System Administrator's Guide* for information on configuring an add-on product to fail over.

◆ The NetBackup Administration Console appears after you install the server. The name of the master server will appear as the Host server name in the left window pane of the NetBackup Administration Console if the master server was installed before the media server.

◆ The name of the media server will appear as the Host server name in the left window pane of the NetBackup Administration Console if any of the following conditions exist:

 ◆ The master server has not been installed.

 ◆ The media server does not have permissions set on the master server.

 ◆ A network problem exists blocking the media server from communicating with the master server.

Caution If any of these situations exist, you will still be presented with the opportunity to run the configuration wizards. Do not run these wizards. If you do, the information that you enter will not be recognized by the master server. VERITAS recommends that you correct the problem (such as installing the master server, correcting the permission settings, or solving the network problem) and run the configuration wizards from the master server.

Starting the NetBackup Administration Console

The following procedure assists you in beginning the process of opening the NetBackup Administration Console so that you can begin to configure your NetBackup product.

1. Start the NetBackup Administration Console interface.

 a. Log on to the NetBackup server machine as **root**. (Log on to the active node in a clustered environment.)

 If you need to run the user interface on a computer other than the NetBackup server, log on to that computer as root for a UNIX computer, or as the Windows administrator for a Windows computer.

    b. Execute the following command:

    /usr/openv/netbackup/bin/jnbSA &

    The login box appears.

    c. Enter the password for root.

    d. Click **Login**. The *Login* dialog closes and the *NetBackup Administration Console* appears.

2. To begin configuring your product, click on the **Getting Started** icon in the main window of the NetBackup Administration Console. The **Getting Started - Welcome to NetBackup** window appears as the beginning of the configuration wizards.

3. Click **Next**. The *Configure Storage Devices* window appears, and prompts you to begin the Configure Storage Devices wizard.

The following subsections contain information that will help you complete each of the wizards that comprise the configuration process.

Configuring Storage Devices for NetBackup

Before you can run any backups, you must define your storage devices for NetBackup. The Configure Storage Devices wizard steps you through this process. However, you must be certain that you have correctly configured your storage devices for your UNIX machine. NetBackup cannot function reliably unless devices are correctly installed and configured.

Note In a clustered environment, begin configuring all storage devices from the active node. The procedure on how to configure storage devices in a cluster, is in the *NetBackup High Availability System Administrator's Guide*. It is important that you refer to this document for step-by-step instructions.

For a NetBackup failover server, it is usually best to attach all of the devices to each node on which NetBackup is installed.

This wizard takes you through the process of:

    ◆ Scanning those hosts for backup devices

    ◆ Verifying the devices that were automatically detected

    ◆ Verifying and correcting the drive configuration

    ◆ Updating the drive configuration

    ◆ Configuring storage units

◆ Specifying device hosts (*For NetBackup Server, the host is specified as itself.*)

▼ **The following list outlines some basic tips to follow as you configure your storage units.**

◆ You must specify the hosts on which to auto-discover and configure devices.

◆ From the *Backup Devices* window, confirm the list of devices displayed in this window is complete and accurate. If a known backup device does not appear in this list, you can do the following:

  ◆ Verify that the backup device is physically attached to the host.

  ◆ Verify all installation procedures specified by the device and operating system vendor have been performed successfully.

◆ Verify that all drives correspond to the proper device. If you need to move a drive, simply select the drive and drag it to the correct location.

◆ When updating the device configurations, you may notice that this process can take a few minutes to complete.

◆ From the *Configure Storage Units* window, you will define storage units. If your system does not have a tape device, you can store data on a disk by defining disk storage units.

  When entering a path for a storage unit, the following rules apply:

  ◆ Use the correct path separators (/ and \).

  ◆ Use a colon (:) to specify a drive separation on Windows platforms.

  ◆ Use the following characters only:

    ◆ Alphabetic characters (ASCII A-Z, a-z)

    ◆ Numeric characters (0-9)

    ◆ Miscellaneous characters: plus (+), minus (-), underscore (_), or period (.)

Configuring Volumes

After you have configured your storage devices, the Getting Started wizard leads you into the Volume Configuration wizard. In this step, you initiate an inventory process of each configured robot. NetBackup automatically updates the volume database if it finds new robotic media during the inventory. You will also define new volumes for use in standalone drives. For more detailed information about volumes or configuring volumes for standalone drives, refer the to *Media Manager System Administrator's Guide.*

Note In a clustered environment, configure volumes from the active node.

Note If you only have disk storage capability, NetBackup will skip this wizard.

The Volume Configuration wizard enables you to:

◆ Select a device for volume configuration

◆ Perform an inventory of the robot

◆ Create new volumes

◆ Create new volume groups

▼ **Basic tips to follow as you step through the Volume Configuration wizard.**

◆ If you choose to inventory a standalone drive, the following is true:

◆ This wizard does not enable you to configure cleaning tapes for standalone drives.

◆ You are able to select the number of volumes for your device.

◆ If you choose to inventory a robot, the following is true:

◆ The NetBackup software conducts an inventory of the robot or device that you previously selected. This window enables you to view the results of this inventory once the inventory completes. You can view these results in the **Results:** field.

◆ After the inventory process of your device completes, the software prompts you to identify which slots within your device contain cleaning media.

If you have just upgraded NetBackup and have pre-existing bar-code rules, then the bar-code reader will automatically detect slots designated for cleaning media. Otherwise, if you do not designate a cleaning slot(s), then NetBackup will consider all media (including cleaning media) as typical media and try to overwrite it.

◆ If you identified one or more tapes as cleaning tapes on the *Identify Cleaning Media* window, then the *Robot Inventory (Cleaning Media)* window will appear. This window displays the results of NetBackup after the software updates the media manager volume configuration.

Configuring the Catalog Backup

The NetBackup Catalog contains information about your configuration and about the files and directories that have been backed up. In case a disk fails and your catalog is lost, a backup of your catalog makes it easy to restore your backed-up data and resume your backup schedule. Therefore, it is imperative that you configure a catalog backup before backing up any other data.

Note In a clustered environment, configure the catalog backup from the active node.

The *Catalog Backup* wizard enables you to:

◆ Specify one or two destinations for the catalog backup. A backup destination can be either removable media or a location on a hard drive.

◆ Specify when a backup of the NetBackup Catalog will occur.

◆ *For NetBackup Enterprise Server environments:* You can specify a media server that will perform the backup.

▼ **Basic tips on configuring a catalog backup.**

◆ *For a NetBackup Enterprise Server:*

　　◆ You must first select a media server. If you want to back up the catalog to removable media, select the media server that has the drive or drives you want to use to write the backup to the media. If you want to back up the catalog to a hard drive (not recommended), specify the computer that contains the hard drive.

　　◆ From the NetBackup Catalog Files window, you will verify that the master server's and each media server's catalogs are included in the list. Verify that the absolute pathnames are correct and are in the correct format. Follow the instructions on the page for specifying the entire list.

　　The pathnames of the catalogs on the master server are automatically added during installation and generally require no action on your part other than to ensure they are listed. However, if you have moved the location of your catalog on your master server, the new location must be specified. Pathnames to the NetBackup Catalog on the media servers are not automatically added during installation and require that you add them to the file list. For more information on specifying the pathnames, see *NetBackup System Administrator's Guide, Volume I*.

Caution Make sure there are no invalid paths in the list of catalog files to be backed up, especially after moving catalog files, deleting old paths, or adding new paths to the catalog backup configuration as explained in this chapter. If NetBackup cannot find or follow a path, the entire catalog backup fails.

Caution Do not specify a link as the final component in a UNIX path or the entire catalog backup will fail. While NetBackup follows links at other points in the path, NetBackup does not follow a link when it is the final component. If any other part of a listed path is a symbolic link, NetBackup saves the actual path during the backup.

◆ VERITAS recommends that you back up the catalog to a tape, if possible. Some of the windows in this wizard contain a **More Information...** button that you can select to obtain more detail about this wizard.

Creating a Backup Policy

When you create a backup policy, you specify when a backup will take place, the files you want to back up, the clients you want to back up, and other general attributes that define how the backup is performed. This wizard enables you to define a backup policy for a group of one or more clients.

Note When creating a backup policy in a clustered environment, configure the policy on the active node.

This wizard steps you through the process of specifying:

◆ Policy names and types

◆ Clients

◆ Files and directories to back up

◆ Backup rotations

◆ Starting times of backups

▼ **Basic tips on creating a backup policy.**

◆ The list that appears in the Client List window is the list of clients that will be backed up. You can add, change or delete computers from this list by selecting a computer and clicking the appropriate button.

◆ This wizard prompts you to choose the type of backup that you want a policy to perform. The following list summarizes your choices:

◆ Full Backup. Backs up all files specified in the file list.

◆ Incremental Backup. Backs up all changed files specified in the file list.

◆ Differential Backup

◆ Cumulative Backup

◆ User backup. Enables the user to initiate a backup on their own.

◆ You can select how often you want a backup policy to run for a full or incremental backup. In addition, you can select the retention period for the backups.

Installing Alternative Administration Interfaces

You can install a NetBackup user interface on a different computer. (This will be necessary if your server computer has no graphics display capabilities.)

System	Install this user interface
Windows	NetBackup Remote Administration Console
UNIX	NetBackup-Java Administration Console
Windows	NetBackup-Java Windows Display Console

NetBackup Remote Administration Console for Windows

You can skip this section if you do not want to remotely administer a NetBackup server from a Windows NetBackup client.

The NetBackup Remote Administration Console is a version of NetBackup for Windows that can be used to remotely administer one or more UNIX or Windows NetBackup servers. It provides all of the standard NetBackup Server for Windows interfaces and can be used to create backup policies (classes), manage volumes, view status, monitor tape drives, etc., on a remote NetBackup server. It cannot be used as a NetBackup master or media server itself—only for the remote administration of other NetBackup UNIX or Windows servers.

Note The Windows NetBackup servers that support the NetBackup Remote Administration Console are Windows NT, 2000, XP, LE, and 2003. For information about the supported platforms for the NetBackup release, refer to the Supported Platforms and Peripherals chapter in *NetBackup Release Notes for UNIX and Windows*.

Although the NetBackup Remote Administration Console cannot be used as a master or media server, in order for it to remotely administer a NetBackup server, it must be added to the server list on that server in the same way that other NetBackup servers are added to the server list to give them access to that server.

The NetBackup manuals and on-line help do not, in most cases, specifically refer to the NetBackup Remote Administration Console since, for all practical purposes, using the NetBackup Server for Windows interfaces on the NetBackup Remote Administration Console is identical to using them locally on the server that is being administered. The master server or device host shown in the interface will be the server name that is being administered instead of the local server name.

▼ **How to install the remote server:**

1. Go to the computer on which you want to install the NetBackup Remote Administration Console and insert the CD-ROM that contains the NetBackup server software.

   ◆ On Windows systems with AutoPlay enabled for CD-ROM drives, the VERITAS NetBackup installation browser starts automatically.

   ◆ On Windows systems that have AutoPlay disabled, run the Launch.exe program in the AutoRun directory on the CD-ROM.

2. On the NetBackup - Install screen, click **NetBackup Installation**.

3. Click **Start NetBackup Server Installation**.

4. Click **OK**.

5. Click **Next**.

6. Click **I Accept**.

7. Click **Next**.

8. Select the Installation Type.

9. Click **Next**.

10. Select **NetBackup Remote Administration Console**.

11. Follow the prompts to complete the installation.

Note On the *NetBackup System Names* screen, the name of the NetBackup Remote Administration Console should be in the first entry field. You must enter the name of the remote NetBackup computer in the Master Server field.

When the software is installed, a set of NetBackup documents is also installed in the following directory:

install_path\Help

By default, the NetBackup Remote Administration Console will automatically begin as soon as you click **Finish** in the installation program. (If you did not choose that default, go to the Windows **Start** menu on the NetBackup Remote Administration Console computer and select **Start > Programs > VERITAS NetBackup > NetBackup Administration Console**.)

▼ **Adding the NetBackup Remote Administration Console host to the server list of the remote server.**

Note On a UNIX system, there are two procedures that you can use to add the host to the server list; you can use the NetBackup Administration Console for UNIX (if your system is Java compatible) or you can edit the `bp.conf` file. Step 1 describes this process using the NetBackup Administration Console for UNIX and Step 2 describes how to edit the `bp.conf` file.

1. Use the NetBackup Administration Console for UNIX to specify and add the remote server to the server list. (If you perform this step, you can proceed to step 3.)

   a. In the left pane of the NetBackup Administration Console for UNIX, select **Host Properties > Master Servers**. The host server appears in the main window.

   b. Right-click on the name of the host server in the *Master servers* window in the right pane.

   c. Select **Properties**. The *Master Server Properties* window appears.

   d. In the *Master Server Properties* window, select the **Servers** icon from the tree in the left window pane.

   e. In the *Servers* window, click **Add**.

   f. Type the name of the host that is to run the NetBackup Remote Administration Console.

   g. Then click **Add**. The name of the host appears in the *Additional Servers* list.

   h. Click **Close**.

   i. Click **OK**.

2. Edit the `bp.conf` file to add the remote UNIX server to the server list. (This step applies to UNIX servers only.)

   a. Go to the remote NetBackup UNIX server.
In the `/usr/openv/netbackup/bp.conf` file, at the end of the SERVER = lines, add the following line:

```
SERVER = name-of-Administration-Console-machine
```

Where *name-of-Administration-Console-machine* is the name of the machine where the NetBackup Remote Administration Console will be installed.

3. If you have an existing NetBackup Remote Administration Console installed and you want to add a remote master server, perform the following steps.

   a. Go to the remote NetBackup Windows Server and start the NetBackup Remote Administration Console.

Note If this is a clean installation, you can add the masters that you want to administer as additional servers during the install.

---

   b. In the left pane of the NetBackup Remote Administration Console, select **Host Properties | Master Server**. The host server appears in the main window.

   c. Right-click on the name of the host server in the *Master servers* window in the right pane.

   d. Select **Properties (Read/Write)**. The *Master Server Properties* window appears.

   e. In the *Master Server Properties* window, click the **Servers** tab.

   f. In the **Global Operations** box, in the field labeled **Add to all lists**, type the name of the host that is to run the NetBackup Remote Administration Console. Then click the "+" button. (The name of the host appears in the Additional Servers list.)

   g. Click **OK**.

NetBackup-Java Administration Console

The NetBackup-Java Administration Console can be used to remotely administer one or more UNIX or Windows NetBackup servers. It provides all of the standard NetBackup Server interfaces and can be used to create backup policies, manage volumes, view status, monitor tape drives, etc., on a remote NetBackup server.

On UNIX NetBackup-Java capable hosts (servers and clients), the administration console is installed when you install NetBackup on the host. For remote administration of any Windows or UNIX NetBackup server, simply specify the server name in the Login dialog of the administration console.

NetBackup-Java Windows Display Console

The NetBackup-Java Windows Display Console enables you to run the NetBackup Java (UNIX) interfaces on any supported Windows server platforms. This interface provides the same capabilities as the NetBackup Administration Console for Windows or UNIX.

You can skip this section if you do not want to remotely administer your UNIX NetBackup servers using the NetBackup-Java Windows Display Console on a Windows server.

Note You can install the NetBackup-Java Windows Display Console from the NetBackup CD-ROM (for Windows).

Requirements

For the computer on which you want to run the NetBackup-Java Windows Display Console, VERITAS recommends 512 MB of physical memory.

▼ **To install the NetBackup Java Windows Display Console:**

   1. On the system where you are performing the install, insert the CD-ROM that contains the NetBackup server software.

     ◆ On Windows systems with AutoPlay enabled for CD-ROM drives, the NetBackup install program starts automatically.

     ◆ On Windows systems that have AutoPlay disabled, run `Launch.exe` in the top-level directory on the CD-ROM.

   2. On the NetBackup Install browser, click the **Windows Display Console** link. A welcome dialog box appears.

   3. Continue the installation by following the prompts to install the NetBackup Java Administration Console.

   4. When the software is installed, see the following document for information on using the display console (this document is installed with the software):

     install_path`\Java\Readme.txt`

Installing NetBackup Agents and Options

After your initial installation is complete, you can install any other NetBackup agents and options (such as NetBackup for Oracle) by following the instructions in the NetBackup guide that comes with that product.

Performing an Upgrade Installation 3

This section explains how to upgrade your UNIX server to this version of NetBackup.

Note In a clustered environment, the following applies:
- Converting an existing non-failover NetBackup server to a highly available failover NetBackup server is not supported.
- Cluster environments are only supported with NetBackup Enterprise Server.
- During an upgrade, the name you enter for the NetBackup server is the virtual server name, not the actual local host name.
- The steps to upgrade a NetBackup 4.5 cluster to a NetBackup 5.0 cluster are located in the *NetBackup High Availability System Administrator's Guide*. Please refer to this document for detailed instructions when performing this type of upgrade procedure.

Requirements

You should ensure that the NetBackup release level on each server is at least equal to that on the clients. Older versions of server software can encounter problems with newer clients.

Caution   Back up your NetBackup databases before upgrading NetBackup software on the master server.

You can upgrade to this version of NetBackup only if you currently have NetBackup 4.5, 4.5 FPx, or 4.5 MPx software installed. If you have a previous version of NetBackup software installed, for example 3.4 or 3.4.1, you cannot upgrade directly to this version of NetBackup. You must first upgrade to at least NetBackup 4.5 and then upgrade to this version of NetBackup.

Note If you have NetBackup 4.5 or 4.5 FP3 and greater clients that are unsupported for NetBackup 5.0 and encounter problems with using the new features of 5.0, move those clients to a separate policy.

◆ Review the installation requirements listed on page 17 before upgrading NetBackup. Many of these requirements apply to upgrading NetBackup.

◆ For Solaris installations only: The install prompts you for the name of an alternate root path. This enables you to perform an upgrade installation to an alternate boot environment which is mounted for access. For example, Host B's `root`, `usr`, and `var` file systems can be mounted on Host A as `/alt`, `/alt/usr`, and `/alt/var`. While logged on to Host A, you can specify `/alt` as the alternate root environment to install NetBackup on Host B. This feature applies to NetBackup only, and not add-ons or database agents.

◆ Additional upgrade requirements for clustered environments:

◆ Make sure that each node in the cluster, on which you wish to install NetBackup, is `rsh` equivalent (on HP-UX, the command is `remsh`). As the root user you need to be able to perform a remote login to each node in the cluster without entering a password. This is only necessary for installation and configuration of the NetBackup server and any NetBackup agents and options. Once installation and configuration is complete, this is no longer required.

◆ Must have the cluster frameworks installed, configured and started by now. For more information about clustering NetBackup, refer to the *NetBackup High Availability System Administrator's Guide*.

◆ Must have virtual name defined using DNS, NIS, or `/etc/hosts`. The IP address is defined at the same time. (The virtual name is a label for the IP address.)

Allowing for Reinstallation of Earlier Versions of NetBackup

If you ever intend to reinstall a previous version of NetBackup after you have performed an upgrade, you must perform the following steps before you do any upgrade. The following steps remind you to back up all databases, patches, etc. Then, if you need to reinstall a previous version, you will have saved the most current data.

Note The reinstallation of an earlier version of NetBackup in a cluster is not supported.

▼ **To allow for installing previous versions of NetBackup**

1. Back up all databases (media, volume, configuration, device) and catalogs on the master and remote media servers.

2. Back up all NetBackup patches, scripts, and `bp.conf` entries that are specific to the earlier version of NetBackup.

3. You do not have to upgrade your clients at this time, only the master and remote media servers.

Supporting Mixed Media Server Revisions

This version of NetBackup supports mixed versions between master and media servers. In addition, with this product you can upgrade NetBackup one server at a time with minimal impact on the overall system performance.

This capability, being transparent to the end user, enables servers to pull and push their version information between master and media servers. The version of NetBackup that you have installed on your server will determine if the version information can be pushed. A media server that is upgraded with NetBackup 5.0 will utilize the `vmd` daemon to push its version information to all servers in its master server list after start-up is initiated. In addition, every 24 hours an automatic update occurs at which time, servers with this feature will push their version information out to the servers again.

Servers running a version of NetBackup that is earlier than NetBackup 4.5 FP3 (NetBackup 4.5GA, 4.5 MPx) cannot push their version information to other servers. You can use the `vnetd` deamon on the master server to query the media servers and determine their relative version information. (This information is then stored in the file `install_directory/netbackup/remote_version`.) If the query of a particular server times out, then it is classified as a "pre-4.5" version of NetBackup, in which case, this version of NetBackup will continue to support the interoperability of the earlier version of NetBackup.

Upgrading NetBackup on UNIX Servers and Clients

This section describes how to upgrade NetBackup from previous versions, or from NetBackup Server to NetBackup Enterprise Server. It also describes how this version can handle media servers with different versions of NetBackup running.

Note Converting an existing non-failover NetBackup server to a highly available failover NetBackup server is not supported.

▼ **Upgrading the Software**

As the root user, install the NetBackup server software first on the master server. Then you can install the software on all remote media servers (*NetBackup Enterprise only*). On the master server, you must also enter license keys for any additional NetBackup software product options or agents used on the server or its clients. The steps for each server are as follows:

Note *NetBackup Enterprise only:* When installing a NetBackup server, master, or media, you must enter a NetBackup Enterprise-base product license key.

Caution If you are upgrading a clustered environment from NetBackup 4.5, 4.5 FPx, or 4.5 MP3 and greater to NetBackup 5.0, refer to the *NetBackup High Availability System Administrator's Guide*.

1. This step applies to Solaris only.

   a. If you are upgrading to this version of NetBackup or reinstalling it, remove the current SUN packages.

      ```
      pkgrm VRTSnetbp
      ```

Note You cannot upgrade directly from NetBackup 3.4 and 3.4.1 to NetBackup 5.0. If you currently have one of these versions of NetBackup installed, you must upgrade to NetBackup 4.5, 4.5 FPx, or 4.5 MPx first and then upgrade to this version of NetBackup.

Caution This step will remove all/any NetBackup scripts you may have modified.

   b. When asked:

      ```
      Are you doing this pkgrm as a step in an upgrade process?
      ```

      Answer y for yes and continue with the installation.

2. On AIX, uninstall the ovpass driver:

   ```
   /usr/openv/volmgr/bin/driver/remove_ovpass
   ```

Note In a clustered environment, you must run this step on all nodes in the cluster.

Caution This will delete any robotic control paths, that will need to be created again. For more information about the robotic control paths, see the *NetBackup Media Manager Device Configuration Guide for UNIX* manual.

3. Check your order to make sure that you have license keys for all the NetBackup servers, clients, options, and agents that you ordered.

   For more information on administering NetBackup licenses, see the *NetBackup System Administrator's Guide, Volume I.*

4. Log on as the root user on the server.

5. Insert the CD-ROM in the drive.

HP-UX systems only: Because the NetBackup CD-ROM is Rockridge-formatted, the mounting instructions are a little different. Refer to "Mounting a NetBackup CD-ROM" on page 11 for specific instructions.

6. Change your working directory to the CD-ROM directory:

   ```
   cd cd_rom_directory
   ```

   Where `cd_rom_directory` is the path to the directory where you can access the CD-ROM. On some platforms, it may be necessary to mount the directory.

7. Execute the install script:

   ```
   ./install
   ```

8. When the menu appears, choose option 1 (NetBackup). This installs both Media Manager and NetBackup software on the server.

   Option 2 (NetBackup Client Software) is for local installation on UNIX clients (see "Install Client Software Locally" on page 68) or for reinstalling client software without disturbing the NetBackup and Media Manager installation.

9. Follow the prompts in the installation script.

   If you did not upgrade all clients at the time of installation, see "Upgrading Clients After the Installation" on page 47.

   ◆ If this is a remote media server, install only the Media Manager and the server software for NetBackup. The correct NetBackup client software is automatically installed. Do not install the other client software on a remote media server.

   ◆ The installation script can push client software to up to 30 clients simultaneously. If you have more than 30 UNIX clients to upgrade, VERITAS suggests that you respond to the installation script as explained in "Upgrading More Than 30 Clients," in the next section. In a clustered environment, the capability to push client software is only available from the active node.

Note On Solaris, if you have done the `pkgrm`, you will not be prompted to update your NetBackup clients.

Note For information on how to install NetBackup Access Control after you have finished your upgrade, refer to "To install NetBackup Access Control on your NetBackup system" on page 23.

Upgrading Clients

This section describes how to upgrade NetBackup on more than 30 clients.

▼ **Upgrading More Than 30 Clients**

Note In a clustered environment, the capability to push client software is only available from the active node.

When asked:

```
Do you want to update the NetBackup software on the clients?
(y/n) [y]
```

Answer **y**.

The script proceeds as follows:

```
Starting update_clients script.
There are N clients to upgrade.
Do you want the bp.conf file on the clients updated to list this
server as the master server? (y/n) [y]
```

Answer either **y** or **n** here.

```
Enter the number of simultaneous updates you wish to take place.
[1 - 30] (default: 15):
```

Press **Enter** (**Return**).

```
The upgrade will likely take Y to Z minutes.
Do you want to upgrade clients now? (y/n) [y]
```

Answer **n**.

```
You will need to upgrade clients later with install_client_files
or update_clients -ClientList filename.
The complete list of UNIX clients can be found in
/tmp/NB_CLIENT_LIST.04-29-1533.13195.
```

(04-29-1533.13195 is a date-time.pid that changes with each execution)

After the install, edit the file /tmp/NB_CLIENT_LIST.04-29-1533.13195 appropriately for your site.

Note If you are pushing the client software to clients located in a cluster, specify the hostnames of the individual nodes (not virtual names) in the list of clients.

◆ You can delete clients and change OS levels. The format of each entry in the file is:

```
hardware_type os_level client_name
```

Where *hardware_type*, *os_level*, and *client_name* are as defined for the clients in the NetBackup policy configuration.

◆ For more than 30 clients, you can divide the list into multiple files and execute `update_clients` for each file.

◆ You can also upgrade only one client by creating an entry for just that client in the `-ClientList` file.

▼ **Upgrading Clients After the Installation**

If you did not update the NetBackup client software on all currently configured UNIX client systems when running the installation script, do so now by performing the following steps as root user on the NetBackup master server.

Note In a clustered environment, the capability to push client software is only available from the active node.

1. As a root user on the NetBackup master server, check whether `bprd` is running by executing:

`/usr/openv/netbackup/bin/bpps`

2. If only one `bprd` shows up in the `bpps` output, there are no active backups or restores. You can terminate the `bprd` daemon by executing:

`/usr/openv/netbackup/bin/admincmd/bprdreq -terminate`

3. Update UNIX client software by executing the `update_clients` script with one of the following commands:

Note If you are pushing the client software to clients located in a cluster, specify the hostnames of the individual nodes (not virtual names) in the list of clients.

◆ If you are using a `-ClientList` file (as explained in "Upgrading More Than 30 Clients") execute the following (all on one line):

`/usr/openv/netbackup/bin/update_clients -ClientList`
file_name

◆ If you are not using a `-ClientList` file, execute:

`/usr/openv/netbackup/bin/update_clients`

4. After all of the servers and clients have been updated, start NetBackup and Media Manager daemons as the root user on the master server by entering the commands:

`/usr/openv/volmgr/bin/ltid`

```
/usr/openv/netbackup/bin/initbprd
```

This completes the UNIX server and UNIX client updates.

5. Once you have upgraded the NetBackup software, read through the following additional steps. Perform those that apply to your system.

Upgrading a NetBackup Server to NetBackup Enterprise Server

This subsection explains how to upgrade a NetBackup Server to a NetBackup Enterprise Server.

Note Cluster environments are only supported with NetBackup Enterprise Server.

Note When installing a NetBackup Enterprise server, master or media, you must enter a NetBackup Enterprise server-based product license key. On the master server, you must also enter license keys for any additional NetBackup software product options or agents used on the server or its clients.

1. Check your order to make sure that you have license keys for all the NetBackup servers, clients, options, and agents that you ordered.

For more information on administering NetBackup licenses, see the *NetBackup System Administrator's Guide, Volume I.*

Note After making and saving any license key updates (including adding and deleting license keys) in the NetBackup Administration Console for UNIX, you must restart the console.

2. Reinstall NetBackup, using the instructions from the previous section, "Upgrading NetBackup on UNIX Servers and Clients" on page 43.

3. When prompted, enter the license key.

This will install NetBackup Enterprise.

4. Once you have upgraded the NetBackup software, read through the following additional steps. Perform those that apply to your system.

Completing Your System Update After an Upgrade

1. Upgrade any separately-priced options (such as NetBackup for Oracle) on clients that have been upgraded. Separately-priced options should be at the same level as the NetBackup client.

2. If you made changes to NetBackup scripts prior to the upgrade, apply those changes to the new, upgraded versions of the scripts.

   During installation, NetBackup overwrites the following files. Before overwriting the files, it appends the version to the name and copies the renamed files to a file or directory.

   ◆ All files in the `/usr/openv/netbackup/bin/goodies` directory and the `/usr/openv/netbackup/help` directory.

   ◆ Some files and directories in `/usr/openv/volmgr`.

   ◆ The following scripts from the `/usr/openv/netbackup/bin` directory:

   ```
   backup_notify
   backup_exit_notify
   bpend_notify (present only if used)
   bpend_notify_busy (present only if used)
   bpps
   bpstart_notify (present only if used)
   dbbackup_notify
   diskfull_notify
   initbpdbm
   initbprd
   restore_notify
   session_notify
   session_start_notify
   userreq_notify
   ```

   For example, an upgrade from NetBackup 4.5 GA to this version would result in changing:

   ```
   /usr/openv/netbackup/bin/goodies
   ```

   to

   ```
   /usr/openv/netbackup/bin/goodies.4.5GA
   ```

   and changing

   ```
   /usr/openv/netbackup/bin/initbprd
   ```

   to

   ```
   /usr/openv/netbackup/bin/initbprd.4.5GA
   ```

3. If this is a master server upgrade installation and the site had previously allowed nonroot users to administer NetBackup, the default permissions and group on the newly installed files allow only a root user to perform NetBackup administration.

Installing NetBackup Agents and Options After an Upgrade

After your upgrade is complete, you can install any other NetBackup agents and options (such as NetBackup for Oracle) by following the instructions in the NetBackup guide that comes with that product.

Uninstall NetBackup Server Software 4

This chapter gives instructions for uninstalling NetBackup 5.0 software from your current server system. In addition, all add-on products (including Storage Migrator) and associated databases will be removed. During each procedure you will be given the opportunity to save any data that you want, and uninstall the add-on product before completing the uninstall of NetBackup.

Uninstalling NetBackup on Solaris Servers

Caution The following procedures uninstall NetBackup, any add-on products, and associated databases that are installed on this machine, including VERITAS Storage Migrator. VERITAS recommends that you save the data that you require and uninstall any add-on products before you uninstall NetBackup.

The information in this section explains how to uninstall NetBackup from a Solaris server.

Note Before you begin this procedure, if you have installed NetBackup in a cluster, you must remove NetBackup from the cluster application before uninstalling NetBackup. Follow the instructions in your cluster documentation for removing a group, then continue with the uninstall.

Note If you identified an alternate root path in your last 5.0 install or upgrade and decide to uninstall NetBackup, the uninstall process will prompt you with the alternate boot path, enabling you to use the pkgrm -R command on the alternate root location. The pkgrm -R command has been implemented in the 5.0 VRTSnetbp (NetBackup server) package only. You cannot use pkgrm -R with VRTSnetbp packages released prior to 5.0.

1. Log on as the root user on the server.

2. Perform a catalog backup.

3. Remove add-on products, by performing the following steps:

a. **Important** - Save all important data from any add-on products installed. For instructions on how to migrate files to a secondary storage device, refer to the *NetBackup Storage Migrator for UNIX System Administrator's Guide*.

b. Uninstall each add-on product. For instructions on uninstalling VERITAS Storage Migrator, refer to the *NetBackup Storage Migrator Installation Guide for UNIX*.

Note Remove any add-on NetBackup products that you have installed. To find out which NetBackup packages are installed on your system, run `pkginfo(1).`

4. Stop the NetBackup/Media Manager daemons:

`/usr/openv/netbackup/bin/goodies/bp.kill_all`

5. Execute the following command:

`pkgrm VRTSnetbp`

6. Answer **no** to the "Is this an upgrade?" prompt.

7. Answer **yes** to the "Remove references to NetBackup/Media Manager from services and `inetd` config files?" prompt.

8. Answer **yes** to remove non-empty directories.

9. Remove the following files:

`rm -f /etc/rc2.d/S77netbackup`

`rm -f /etc/rc0.d/K01netbackup`

`rm -f /etc/init.d/netbackup`

10. Execute the following commands to remove the NetBackup-Java application state data for the root account:

`/bin/rm -rf /.nbjava`

`/bin/rm -rf /.java/.userPrefs/vrts`

Note There should be no space between the slash "/" and the period "." of "/.nbjava". Adding a space between these characters removes all of your files starting from the root level.

11. Inform NetBackup-Java users that they can remove their `$HOME/.nbjava` and portions of `$HOME/.java` directories.

The $HOME/.nbjava and $HOME/.java directories contain application state information (for example, table column order and size) that is saved when the user exits NetBackup-Java applications. The uninstall process removes this directory for the root user only.

The common subdirectory in $HOME/.java/.userPrefs/vrts can be removed.

12. If NetBackup Access Control is enabled, NetBackup creates several new files on clients and servers. For more information on NetBackup Access Control, please see the *NetBackup System Administrator's Guide Volume II*. For more information on the VERITAS Security Services, including how to properly uninstall, please see the *VERITAS Security Subsystem Administrators Guide*.

These files can be divided into two separate categories: individual user files, and NetBackup application temporary files. NetBackup application temporary files were removed with NetBackup in a previous step. Users' cache files exist in their home directories, for example: $HOME/.vxss

Inform those users that they can remove their $HOME/.vxss directory.

Note Files are generated in the /.vxss directory by a single sign-on operation of the NetBackup Administration Console on the host upon which the console is run. NetBackup Administration Console cleans these files when an exit function is performed. (It is common to have no temporary files in this directory.) If a system crash were to occur, these files may be left behind. With the console shutdown, you can delete these files safely with no data loss.

NetBackup also creates cached certificates for client and server NetBackup applications. These files reside within the /.vxss directory. These files will typically have a name that is consistent with a DNS entry for a network interface that is readable by a human, for example, machine.company.com.

Example directory entries for Windows;

/usr/openv/var/vxss/credentials/machine.company.com

/usr/openv/var/vxss/credentials/dhcp

These files are created with the command bpnbat -LoginMachine. If considering a reinstallation of NetBackup at a later date on the machine in question, you should preserver the certificates in the vxss/credentials directory or be prepared to provide the machine identity password as originally set on the Root+AB broker. As an alternative, one may reset the password on the Root+AB broker at reinstall time. For more information on Root+AB brokers please see the *VERITAS Security Subsystem Administrators Guide*.

Uninstalling NetBackup on all Other UNIX Servers

The information in this section explains how to uninstall NetBackup from a non-solaris UNIX server.

Note Before you begin this procedure, if you have installed NetBackup in a cluster, you must remove NetBackup from the cluster application before uninstalling NetBackup. Follow the instructions in your cluster documentation for removing a group, then continue with the uninstall.

Caution The following procedure uninstalls NetBackup, any add-on products, and associated databases that are installed on this machine, including VERITAS Storage Migrator. VERITAS recommends that you save the data that you require and uninstall any add-on products before you uninstall NetBackup.

1. Log on as the root user on the server.

2. Perform a catalog backup.

3. Stop the NetBackup/Media Manager daemons:

   `/usr/openv/netbackup/bin/goodies/bp.kill_all`

4. Remove add-on products, by performing the following steps:

   a. **Important** - Save all important data from any add-on products installed. For instructions on how to migrate files to a secondary storage device, refer to the *VERITAS Storage Migrator for UNIX System Administrator's Guide*.

   b. Uninstall each add-on product. For instructions on uninstalling VERITAS Storage Migrator, refer to the *VERITAS Storage Migrator Installation Guide for UNIX*.

5. To remove references to `NetBackup/Media Manager` from `/etc/services` and the `[x]inetd` configuration files, run the `edit_services` script located in the `/usr/openv/netbackup/bin/goodies` directory.

6. Remove the `/usr/openv` directory:

   - If `/usr/openv` is a physical directory, execute:

     `rm -rf /usr/openv`

   - If `/usr/openv` is a link, execute:

a. `cd /usr/openv`

Note Make sure you are at the proper location and verify that the subdirectories are what you would expect them to be before continuing to Step b. You do not want to remove the wrong directories. To verify your current location and the contents of that location, perform the following two steps before proceeding to Step b.

```
pwd
ls
```

b. `rm -rf *`

c. `cd /`

d. `rm -f /usr/openv`

Caution The `rm -f /usr/openv` command will also uninstall any add-on products installed on this machine.

---

7. For Linux systems only. If you modified the startup and shutdown scripts as described in "Configuring Automatic Startup and Shutdown of NetBackup" on page 24, execute:

```
/sbin/chkconfig --del netbackup
```

8. Remove the following links and files:.

System	Additional Files
AIX	`/etc/rc.veritas.aix`

Alpha Tru64	`/sbin/rc3.d/S77netbackup`
	`/sbin/rc0.d/K01netbackup`
	`/sbin/init.d/netbackup`

HP-UX	`/sbin/rc2.d/S777netbackup (note three 7s)`
	`/sbin/rc1.d/K001netbackup`
	`/sbin/init.d/netbackup`

Linux	`/etc/rc.d/rc2.d/S77netbackup`
	`/etc/rc.d/rc3.d/S77netbackup`
	`/etc/rc.d/rc5.d/S77netbackup`
	`/etc/rc.d/rc6.d/K01netbackup`
	`/etc/rc.d/rc0.d/K01netbackup`
	`/etc/rc.d/init.d/netbackup`

System	Additional Files (continued)

SGI	`/etc/rc2.d/S91netbackup`
	`/etc/rc0.d/K01netbackup`
	`/etc/init.d/netbackup`

Other servers	`/etc/rc2.d/S77netbackup`
	`/etc/rc0.d/K01netbackup`
	`etc/init.d/netbackup`

9. Remove any NetBackup entries from the following files.

System	File	NetBackup Entry
AIX	`/etc/inittab`	`/etc/rc.veritas.aix`

10. Execute the following commands to remove the NetBackup-Java application state data for the root account:

`/bin/rm -rf /.nbjava`

`/bin/rm -rf /.java/.userPrefs/vrts`

> **Note** There should be no space between the slash "/" and the period "." of "/.nbjava". Adding a space between these characters removes all of your files starting from the root level.

11. Inform NetBackup-Java users that they can remove their `$HOME/.nbjava` directory.

The `$HOME/.nbjava` directory contains application state information (for example, table column order and size) that is saved when the user exits NetBackup-Java applications. The uninstall process removes this directory for the root user only.

The `common` subdirectory in `$HOME/.java/.userPrefs/vrts` can be removed.

Installing NetBackup Client Software   **5**

This chapter discusses how to install NetBackup client software for the following NetBackup clients:

◆ Microsoft Windows clients

◆ UNIX clients

◆ NetWare Target and NonTarget - (The installation procedures for these PC clients have been moved to a new document. For more information on how to install NetWare Target and Non Target clients, refer to the *NetBackup Administration Guide for Novell NetWare Client*.)

Installing NetBackup on Microsoft Windows Clients

By definition, your NetBackup server is also a NetBackup client. When you installed the NetBackup server software, both the NetBackup *server* and NetBackup *client* software were installed on the server.

This chapter contains the following topics on installing this version of the NetBackup client software for Microsoft Windows clients:

◆ Installation Overview

◆ System Requirements

◆ Local Installation Instructions

◆ Remote Installation Instructions

◆ Silent Installation Instructions

◆ NetBackup Client Configuration

◆ Uninstalling NetBackup Client Software

Installation Overview

The NetBackup client setup program for Microsoft Windows allows you to select appropriate setup and installation options from a series of windows. Once the options have been selected, the NetBackup client setup program displays a window that enables you to verify your selections before continuing with the actual install.

While the installation is in progress, a dialog window provides details of the installation and setup progress. When complete, a final window indicates the results of the installation.

Note You cannot install NetBackup client software on PCs that currently have NetBackup server software installed. In these cases, you must first uninstall the NetBackup server software.

VERITAS Volume Snapshot Provider

If installing on a Windows client, during the installation process you have the option of installing VERITAS Volume Snapshot Provider (VSP). VSP establishes a point-in-time view, or snapshot, of the data that is selected for backup on the volumes (that is, drives). NetBackup then backs up the selected files as they existed at the time of the snapshot, regardless of file system activity. VSP uses a file system cache to store changes that occur during the backup. Each volume for which a snapshot is created will have a corresponding VSP cache file.

For information on the VSP parameters, please refer to the "VSP Parameter Information" section in *NetBackup User's Guide for Windows*.

User-Directed Operations for Windows Systems

On Windows 2000, Windows XP, or Windows 2003 Server systems the `Program Files` folder, by default, is not writable by users other than the administrator. NetBackup writes log files and progress files to the `Program Files\VERITAS\NetBackup\Logs` folder, by default. Users without write permission to the `Logs` folder will receive an error message when attempting a backup or restore and the operation will be aborted. If users other than the administrator will be using the Backup, Archive, and Restore interface to perform backups and restores, make sure they have write permission to the `Logs` directory.

Local and Remote Installations

The NetBackup client setup program can be used in either of the following ways:

◆ Local installations - the setup program installs the client software only on the PC where the installation is started.

◆ Remote installations - the setup program scans your network for available clients where you can install the client software. The source PC (or primary node) must have Windows NT, Windows 2000, Windows XP, or Windows 2003 server installed. In addition, a remote installation requires system administrator privileges and is only available for Windows NT, Windows 2000, 32-bit Windows XP, and32-bit Windows 2003 machines.

> **Note** You cannot remote install from a UNIX system to Windows NT, Windows 2000, Windows XP, or Windows 2003 machines.

Local and remote installations can be either new or upgrade installations, depending on whether there is any existing NetBackup client software installed on the client PCs.

Silent Installations

A silent installation is one where the installation process does not require interactive input. It does, however, require input in the form of editing the `silentclient.cmd` file before execution.

New and Upgrade Installations

The NetBackup client setup program recognizes two types of installations:

◆ New installations - the setup program does not detect an existing version of NetBackup client software on the client PC.

◆ Upgrade installations - using Windows registry information, the setup program detects an existing version of NetBackup client software.

New Installations

NetBackup setup enables you to specify one set of configuration options to be used for all new installations. These options include:

For typical and custom installations:

◆ Specifying master and media server names

For custom installations only:

◆ Specifying an installation directory (local install only)

◆ Entering `bpcd` and `bprd` port numbers

◆ Starting the NetBackup Client Service automatically or manually

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◆   Starting the NetBackup Client Service on the client after installation is complete

◆   Starting the NetBackup Client Job Tracker automatically

◆   Installing VSP

◆   Installing debug symbols

◆   Installing the NetBackup documentation

Upgrade Existing Installations of NetBackup

The setup program enables you to specify the same options previously defined for new installations, except that you cannot change the location of the installation. These options can be applied to the upgrade installations as well as to new installations.

System Requirements

This section describes the hardware and software that is required for successful installation of NetBackup software.

Clients Installation Requirements

To install NetBackup client software on a PC workstation, the workstation must meet the following configuration requirements.

◆   Microsoft Windows (NT, 2000, XP (32 and 64 bit), and 2003 Server (32 and 64 bit))

  ◆   Windows NT 4.0 (service pack 6A) or Windows 2000 (service pack 2) installed.

◆   An Intel Pentium or Itanium processor

◆   Internet Explorer 5.5 or greater

◆   Any TCP/IP transport that is Windows Sockets Compliant. (Use of the TCP/IP transport that comes with the server or operating system is recommended.)

◆   A network adapter supported by your TCP/IP transport.

Remote Installation Requirements

In addition to the previous requirements:

◆   The source PC must have Windows NT, Windows 2000, Windows XP, or Windows 2003 Server installed.

◆   The destination PC must have Windows NT, Windows 2000, 32-bit Windows XP, or 32-bit Windows 2003 client installed.

◆ The person performing the remote installation must have administrator privileges on all of the client PCs.

NetBackup Server

◆ This version of the NetBackup server software or later must be installed.

Local Installation Instructions

Follow these instructions to install the NetBackup client software on your Windows PC. You can stop the installation process at any time by clicking **Cancel** or clicking **Back** to return to the previous window.

1. Log in as Administrator on the server where you will be installing NetBackup.

2. Insert the NetBackup CD-ROM into the drive.

   ◆ On systems with AutoPlay enabled for CD-ROM drives, the NetBackup install program starts automatically.

   ◆ On systems that have AutoPlay disabled, run the `Launch.exe` program in the root directory on the CD-ROM.

3. The NetBackup browser displays the following information and options:

   ◆ Links on the left side of the browser that display information relating to **NetBackup**, **Database Agents**, and **Additional Products**.

   ◆ Browse the CD

   ◆ The NetBackup link selected (by default) and these available options:

      ◆ Begin NetBackup Installation

      ◆ View available documentation

      ◆ Link to VERITAS Technical Support

      ◆ Link to VERITAS e-Learning

4. Click **NetBackup Installation**.

5. Click **Start NetBackup Client Installation.**

6. When prompted to choose where you want to install the NetBackup client software, select **Install to this computer only**.

Note You cannot do a remote install to or from any 64-bit system.

7. Select either a typical or custom installation.

   If you choose a typical installation, the default port numbers and default service startup settings are used.

   If you choose a custom installation, you can choose the desired service startup settings, change the port numbers, select the installation location, and whether or not to install NetBackup documentation, debug symbols, and VSP.

8. Click **Next**.

9. Follow the instructions provided with the program wizard.

10. Click **Install** to initiate the installation and **Finish** when the install is complete.

Note You may need to reboot your PC for the changes to take effect.

Remote Installation Instructions

Note Review the installation requirements for remote installations on page 60 before starting this procedure.

Follow these instructions to install the NetBackup client software on selected Windows NT, Windows 2000, 32-bit Windows XP, or 32-bit Windows 2003 Server clients on your network (one of these clients can be your local PC). You may stop the installation process at any time by clicking **Cancel**.

Notes on Remote Installations

◆ During installation, the client name is written to the registry in lower case. If the policies on the NetBackup server do not specify the client names in lower case, backups will fail because the names do not match.

◆ You must have administrator privileges on the remote client for the NetBackup install to complete successfully.

◆ The NetBackup client setup program cannot clean an aborted install. Therefore, if you stop Setup while it is copying files to a client, the files that have been successfully installed are not uninstalled.

▼ **To install the NetBackup on remote computers**

1. Insert the NetBackup CD-ROM into the drive.

   ◆ On systems with AutoPlay enabled for CD-ROM drives, the NetBackup install program starts automatically.

   ◆ On systems that have AutoPlay disabled, run the `Launch.exe` program in the root directory on the CD-ROM.

2. Click **NetBackup Installation**.

3. Click **Start NetBackup Client Installation**.

4. When prompted to select where you want to install the NetBackup client software, choose **Select from available computers on the network**.

Note If you choose **Select from available computers on the network**, the client will not be installed on the local machine unless it is added to the list of systems to which you are going to install.

5. Select either a typical or custom installation.

   If you choose a typical installation, the default port numbers and default service startup settings are used.

   If you choose a custom installation, you can choose not to install, debug symbols, VSP, and can change the port numbers.

6. Click **Next**.

7. Follow the instructions provided with the program wizard.

8. Click **Install** to initiate the installation and **Finish** when the install is complete.

Note Clicking the **Cancel** button anytime after you have clicked the **Install** button and started the remote install process will not cancel the install on the remote system that is in progress at the time **Cancel** is clicked. The installation will continue until it is finished. Any remote installs that remain will not be performed, and any remote installs that were successful to that point will continue to be successful.

Note You may need to reboot your PC or the remote systems for the changes to take effect.

Silent Installation Instructions

> **Note** Silent installations of NetBackup client software are not supported if you want to run the NetBackup services as a user rather than the local system. If you want to install NetBackup under this circumstance, you must go through the interactive installation described earlier in this document.

A silent installation is one where the installation process does not require interactive input. It does, however, require input in the form of editing the `silentclient.cmd` file before execution.

Follow these instructions to perform a silent installation of the NetBackup client software on selected Windows clients on your network (one of these clients can be your local PC).

▼ **To perform a silent installation**

1. Start the Windows Installer from the following locations:

   ◆ Windows NT systems

     `PC_Clnt\X86\instmsiw.exe`

   ◆ Windows 2000, Windows XP, or Windows 2003 Server

     Insert the NetBackup CD-ROM into the drive.

     On systems with AutoPlay enabled for CD-ROM drives, the NetBackup install program starts automatically. Exit out of the NetBackup install program.

   > **Note** Do not run `instmsiw.exe` on Windows 2000, Windows XP, or Windows 2003 Server systems.

2. Using Microsoft Windows Explorer, navigate to the CD-ROM drive.

3. Copy the contents of the `PC_Clnt\` directory to a temp folder on your hard drive (for example, `C:\temp`).

4. The files contained on the CD-ROM are read-only. Change the permissions for these files on the hard drive to allow the update.

5. In the temporary directory, use a text editor to edit the `silentclient.cmd` file so the script will install the client software as you wish.

> **Note** Be sure to update the client, master server, and additional servers to the minimum required version level of NetBackup.

6. Run the script (`silentclient.cmd`).

7. Check the `NetBackup Install.log` log file to verify that the install was successful. The following procedures will help you locate the proper log file.

▼ **Locating the NetBackup Installation log file for Windows 2000 and newer systems**

    a. Select **Start > Programs > Accessories > Command Prompt**. A *Command Prompt* window appears.

    b. Enter `echo %TEMP%` and press the **Return** key on your keyboard. The location of your TEMP directory will display.

▼ **Locating the NetBackup Installation log file for Windows NT systems**

    a. Select **Start > Settings > Control Panel**. The *Control Panel* window appears.

Note Make sure you can view all hidden files and folders. To set this option, select **Tools > Folder Options...** in the *Control Panel* window. Then click the **View** tab; set the **Show hidden files and folders** option, and click the **OK** button.

    b. Double-click the **System** icon. The *System Properties* window appears.

    c. Click the **Environment** tab. The *Environment Variables* including the TEMP variable will appear along with the corresponding paths for each variable.

Note You may need to reboot the PCs for the changes to take effect.

NetBackup Client Configuration

You can further configure the NetBackup client after installation by doing one of the following:

◆ To add servers or media servers, start the Backup, Archive, and Restore interface and from the **File** menu choose **Specify NetBackup Machines**.

◆ To display and change the client properties, start the Backup, Archive, and Restore interface and from the **File** menu, choose **NetBackup Client Properties**.

◆ To display and change the server properties, start the NetBackup Administration Console. Expand **Host Properties** and click on **Clients**. In the right pane, right-click on the client, and choose **Properties**.

All NetBackup servers that require access to your Windows PC client must be listed on the **Servers** tab in the above dialog boxes.

For more information, refer to the *NetBackup User's Guide for Windows*.

Uninstalling NetBackup Client Software

▼ **To uninstall the NetBackup client software on Microsoft Windows clients:**

1. Open the Windows Control Panel (select **Start**, **Settings**, and then **Control Panel**).

2. Select **Add/Remove Programs**.

3. Select **VERITAS NetBackup Client**.

4. Click the **Remove** button.

Installing UNIX NetBackup Client Software

You can install UNIX NetBackup client software either locally at the client computer or remotely from your UNIX NetBackup server. To have the ability to include a client in a policy, the software for the client type must first be loaded on the UNIX Server.

> **Note** If you are running NetBackup on a Windows NT, Windows 2000, Windows 2003 Server computer, or if there is a firewall that prevents remote installation, you cannot push an install to a UNIX client. You must install UNIX clients locally.
>
> The Macintosh OS X10.2.x clients are UNIX-based clients and as such, you should follow the UNIX client installation procedures that follow.

◆ Locally: you must install the client software locally if remote installation is not possible. Remote installation is not possible if your NetBackup server is a Windows NT, Windows 2000, or Windows 2003 computer or if there is a firewall that prevents remote installation.

To install NetBackup locally on IBM zSeries Linux clients, you must transfer the contents of the NetBackup CD-ROM image to a location that is readable by the virtual Linux environment. This can be done by using FTP or NFS mounting commands.

◆ Remotely: you can "push" the client software from your UNIX NetBackup server to your UNIX client computers. This is the preferred method of installing. To push a UNIX client, the software for that type of UNIX computer must first be loaded onto your UNIX server. If you did not choose to do this during the installation of your UNIX server, do so now by following the instructions provided in "Adding a UNIX Client Type After Initial Server Installation" on page 73 . Clients such as NetBackup to the IBM zSeries Linux, may not have a locally mounted CD-ROM device, making it impossible to perform a standard local install. To install NetBackup to clients with no local CD-ROM drive, you must push the NetBackup installation from a UNIX master server. For instructions on how to install NetBackup on a secure client, refer to "Installing NetBackup Software on Secure UNIX Clients" on page 72. For instructions on how to install NetBackup on an unsecure client, refer to "Installing NetBackup Software on Trusting UNIX Clients" on page 69.

> **Note** In a clustered environment, the capability to push client software is only available from the active node.

To initiate a backup or a restore from a UNIX client computer, the following graphical interfaces are available:

◆ Clients that are compatible with NetBackup-Java will use the NetBackup-Java interface (jbpSA). Refer to the *NetBackup Release Notes* for a list of NetBackup-Java capable hosts.

◆ Clients that are not compatible with NetBackup-Java will use the xbp interface (except the Macintosh OS X 10.2.x). Refer to the *NetBackup Release Notes for UNIX and Windows* for a list of clients with xbp installed. In addition, for instructions on how to use the xbp interface, see the *NetBackup System Administrator's Guide, Volume I.*

Note For this release, the IBM zSeries Linux clients (Linux SuSe and Linux RedHat) do not support the NetBackup-Java Administration Console or the xbp interface.

Note Macintosh OS X 10.2.x and FreeBSD are available through the bp interface or from a Solaris, HP-UX, AIX, Tru64, or Linux NetBackup client console using the jbpSA command.

Install Client Software Locally

1. Insert the NetBackup CD-ROM into the drive on the client computer.

   a. HP-UX systems only: Because the NetBackup CD-ROM is Rockridge-formatted, the mounting instructions are slightly different. Refer to "Mounting a NetBackup CD-ROM" on page 11 for specific instructions.

   b. Macintosh OS X 10.2.x systems only: you can access the CD-ROM from:

      ◆ /volumes/<cd name>

2. Change your working directory to the CD-ROM directory:

   ```
   cd cd_rom_directory
   ```

   Where *cd_rom_directory* is the path to the directory where you can access the CD-ROM. On some platforms, it may be necessary to mount the directory.

3. Start the install program.

   ```
   ./install
   ```

4. Choose option 2, **NetBackup Client Software**.

Note The binaries provided for the client OS levels represent the OS levels on which the binaries were compiled. Often the binaries will function perfectly on newer versions of the operating system. For example, Solaris 7 binaries also are used on the

Solaris 8 level of the operating system.

The install script attempts to load the appropriate binaries for your system. If the script does not recognize the local OS, it will present choices to the user.

5. Follow the prompts to complete the installation.

6. On HP-UX systems only: to unmount the CD-ROM:

- ◆ Execute the `pfs_umount` command
- ◆ Use the `kill` command to kill the following processes:

```
pfs_mountd
pfsd
pfs_mountd.rpc
pfsd.rpc
```

Install Client Software Remotely

The following sections describe how to "push" the client software from your UNIX NetBackup server to your UNIX NetBackup clients. You can push the client software to either a trusting client or a secure client.

▼ **Installing NetBackup Software on Trusting UNIX Clients**

> **Note** In a clustered environment, the capability to push client software is only available from the active node.

A *trusting* UNIX client is one that has an entry for the server in its `/.rhosts` file. The `/.rhosts` entries enable software installation, but are not necessary for correct operation of NetBackup software.

> **Note** Add the trusting clients to a backup policy, if this has not already been done.

> **Note** *For Macintosh OS X 10.2.x users*: By default, Macintosh OS X 10.2.x does not enable the remote shell daemon (`rshd`). You must enable this daemon to perform the following procedure successfully. You can enable `rshd` by removing the commenting in the "shell" line in the `/etc/inetd.conf` file and sending an HUP signal to the `inetd` process.

1. Start the NetBackup Administration Console.

In the Login dialog box, type the name of the NetBackup server that has the policy configuration with the clients.

You can install the client software only from the NetBackup server that you specify in the Login dialog box when starting the interface. The clients must be defined in a policy on this NetBackup server.

2. In the NetBackup Administration Console window, click on the **NetBackup Management** icon to show the available options.

3. Click the **Policies** icon in the left window pane. The **All Policies** window pane populates with a list of available policies.

4. Select the master server in the **All Policies** window pane.
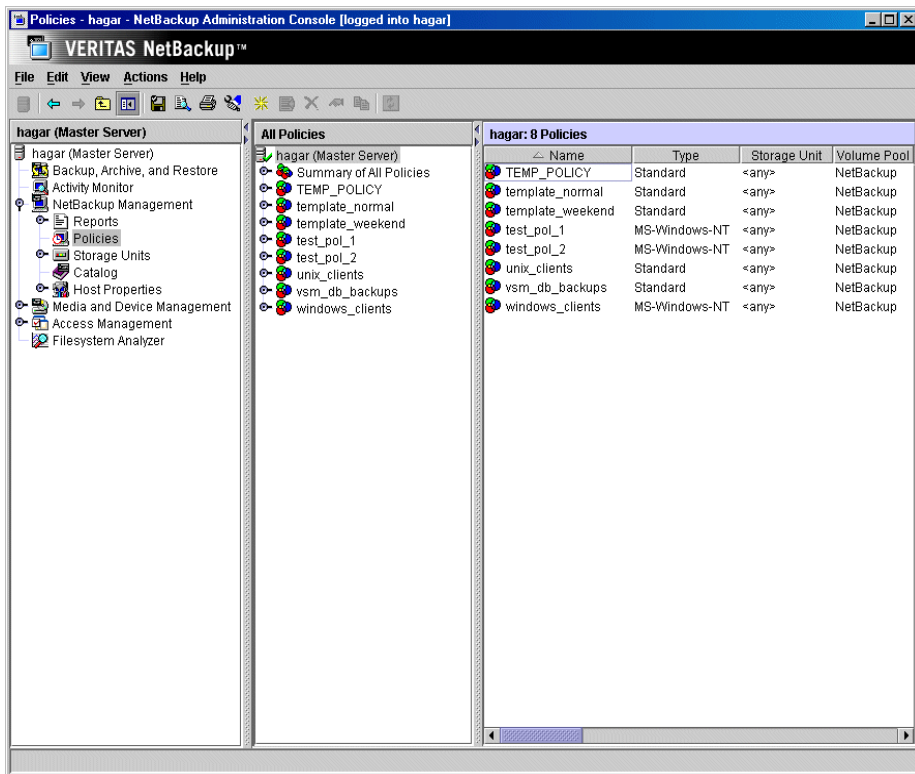
5. Select **Install UNIX Client Software** from the **Actions** menu.

The *Install UNIX Client Software* dialog window appears.
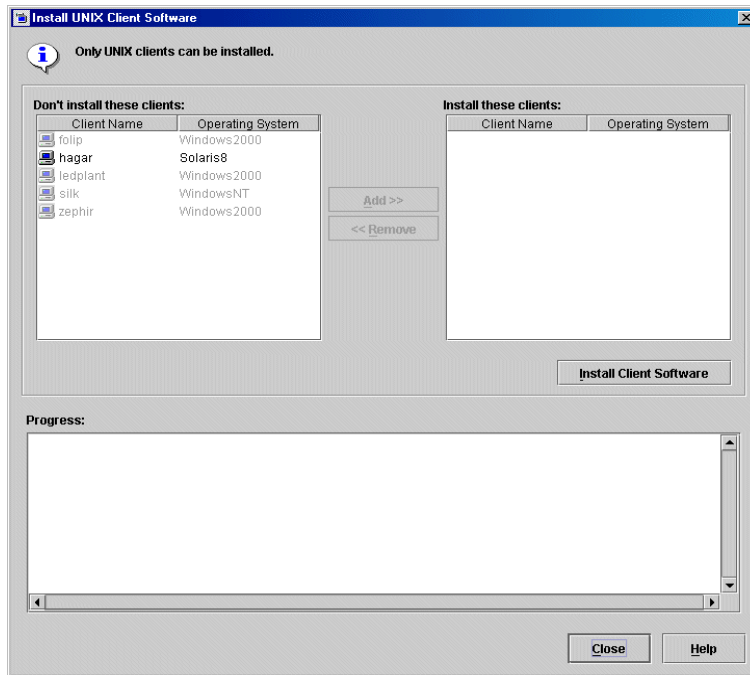
6. In the **Don't install these clients** window, select the clients you want to install and click the **Add >>** button.

The clients are moved to the **Install these clients** window.

7. Click the **Install Client Software** button to start the installation.

Client software installation can take a minute or more per client. NetBackup writes messages in the **Progress** box as the installation proceeds. If the installation fails on a client, NetBackup notifies you but keeps the client in the policy. You cannot stop the installation once it has started.

During installation, NetBackup does the following:

◆ Copies the client software from the `/usr/openv/netbackup/client` directory on the server to the `/usr/openv/netbackup` directory on the client.

◆ Adds the required entries to the client's `/etc/services` and `inetd.conf` files or `xinetd.d` directory as appropriate.

The only way to install client software to a different location on the client is to create the directory where you want the software to reside and then create `/usr/openv/` as a link to that directory prior to installing software.

8. When the install is complete, click **Close**.

▼ **Installing NetBackup Software on Secure UNIX Clients**

As defined here, a *secure* UNIX client is one that does not have an entry for the NetBackup server in its `/.rhosts` file.

Note Add the secure clients to a backup policy, if this has not already been done.

Note *For Macintosh OS X 10.2.x users*: By default, Macintosh OS X 10.2.x does not enable the FTP daemon (`ftpd`). You must enable this daemon to perform the following procedure successfully. You can enable `ftpd` by checking **Allow FTP access** in the sharing pane of the **System Preferences** application.

1. Move software from the server to temporary space in the `/tmp` directory on the client by executing the `install_client_files` script from the NetBackup server. To execute this script, you must have a login ID and password that you can use to access the clients through ftp.

To move software to only one client at a time, execute:

`/usr/openv/netbackup/bin/install_client_files ftp client user`

To move software to all clients at once, execute:

`/usr/openv/netbackup/bin/install_client_files ftp ALL user`

Where the options are defined as follows:

◆ *client* is the hostname of the client.

◆ *user* is the login id required by ftp on the client.

◆ `ALL` specifies that you want to install all clients which are configured in any backup policy on the server.

The `install_client_files` script prompts you for a password for each client if you do not have a `.netrc` file set up.

Note In a clustered environment, the capability to push client software is only available from the active node.

2. After the `install_client_files` script is done, the root user on each of the clients must execute the `client_config` script to complete the installation:

```
sh /tmp/bp/bin/client_config
```

The `client_config` script installs the binaries and updates the `/etc/services` and `inetd.conf` files on the client or `xinetd.d directory` as appropriate.

Adding a UNIX Client Type After Initial Server Installation

If you add a new UNIX client type to your backup environment or forgot to select a UNIX client platform during your NetBackup installation, you must first load the NetBackup client software onto the NetBackup server as described below.

▼ **To add a UNIX client type after initial server installation**

Note In a clustered environment, the following steps should be performed on the active node.

1. Insert the NetBackup CD-ROM into the drive on the server.

HP-UX systems only: Because the NetBackup CD-ROM is Rockridge-formatted, the mounting instructions are slightly different. Refer to "Mounting a NetBackup CD-ROM" on page 11 for specific instructions.

2. Change your working directory to the CD-ROM directory:

```
cd cd_rom_directory
```

Where `cd_rom_directory` is the path to the directory where you can access the CD-ROM. On some platforms, it may be necessary to mount the directory.

3. Use the install program to load the client software onto the NetBackup server.

```
./install
```

4. Choose option 2, NetBackup Client Software.

5. Follow the prompts, selecting the additional client platforms that you want.

Note The binaries provided for the client OS levels represent the OS levels on which the binaries were compiled. Often the binaries will function perfectly on newer versions of the operating system. For example, Solaris 7 binaries also are used on the Solaris 8 level of the operating system.

6. Follow the prompts to complete the installation.

> **Note** If your master server is NetBackup-Java capable and the client being added is
> NetBackup-Java capable, then you will receive a message during this process
> informing you to run option 3, to install the NetBackup client Java software.

7. On HP-UX systems only: to unmount the CD-ROM:

- ◆ Execute the `pfs_umount` command

- ◆ Use the `kill` command to kill the following processes:

  ```
  pfs_mountd
  pfsd
  pfs_mountd.rpc
  pfsd.rpc
  ```

8. You must now install the NetBackup client software on these additional client
computers, as described earlier in this chapter. Refer to "Install Client Software
Remotely" on page 69).

Uninstalling UNIX NetBackup Client Software

If you are uninstalling NetBackup from a machine on which you have installed the NetBackup-Java Display Console, the Console will be also be removed when uninstalling NetBackup. You will need to reinstall the Console in order to continue using it on the machine.

1. Log on to the client system as the root user.

2. Remove the /usr/openv directory.

   If /usr/openv is a physical directory, execute:

   ```
   rm -rf /usr/openv
   ```

   If /usr/openv is a link, execute:

   ```
   cd /usr/openv
   rm -rf *
   cd /
   rm -f /usr/openv
   ```

   Caution The rm -f /usr/openv command will also uninstall any add-on products installed on this machine.

3. Remove NetBackup entries in the /etc/services file, as follows.

   a. Edit the client's /etc/services file.

   b. Locate the lines marked by the following and remove them:

   ```
   # NetBackup services#

   .....

   # End NetBackup services #

   # Media Manager services #

   ....

   # End Media Manager services #
   ```

   Note For Macintosh OS X 10.2.x systems, the NetBackup installer updates the /services directory of the Netinfo database with these entries. To uninstall NetBackup and its services from one of these clients, you must use the NetManager utility to remove bpcd, bpjava-msvc, bprd, vnetd, and vopied from the /services directory in the Netinfo database.

4. Remove the NetBackup entries in the `/etc/inetd.conf` file.

    a. Edit the client's `/etc/inetd.conf` file.

    b. Delete the lines for `bpcd`, `vnetd`, `vopied`, and `bpjava-msvc`.

5. Execute the following two shell commands to cause `inetd` to read the updated `inetd.conf` (or `inetd.local`) file.

    a. Enter the following.

        For most UNIX clients:

```
ps -ea | grep inetd
```

        For MacOS X 10.2.x and FreeBSD:

```
ps -ax | grep inetd
```

    b. Run the `kill` command as follows. The process ID is the first number displayed in the output from the `ps` command.

```
kill -1 process_ID
```

        The `ps` command options may vary from one client platform to another.

6. For NetBackup-Java capable clients running the NetBackup Administration Console for UNIX, remove the NetBackup-Java state data by executing the following:

```
/bin/rm -rf /.nbjava
```

```
/bin/rm -rf /.java/.userPrefs/vrts
```

> **Note** There should be no space between the slash "/" and the period "." of "/.nbjava". Adding a space between these characters removes all of your files starting from the root level.

7. Inform users of this machine that they can remove their `$HOME/.nbjava` and portions of `$HOME/.java` directories.

The `$HOME/.nbjava` and `$HOME/.java` directories contain application state information (for example, table column order and size) that is saved when the user exits NetBackup-Java applications.

The `common` subdirectory in `$HOME/.java/.userPrefs/vrts` can be removed.

8. If NetBackup Access Control is enabled, NetBackup creates several new files on clients and servers. For more information on NetBackup Access Control, please see the *NetBackup System Administrator's Guide Volume II*. For more information on the VERITAS Security Services, including how to properly uninstall, please see the *VERITAS Security Subsystem Administrators Guide*.

These files can be divided into two separate categories: individual user files, and NetBackup application temporary files. NetBackup application temporary files were removed with NetBackup in a previous step. Users' cache files exist in their home directories, for example: `$HOME/.vxss`

Inform those users that they can remove their `$HOME/.vxss` directory.

Installing Mac OS X 10.2.x Clients

The Macintosh OS X 10.2.x clients are UNIX-based clients that have the same installation requirements. To install these clients, you should follow the UNIX client installation procedures. Refer to "Installing UNIX NetBackup Client Software" on page 67.

NetBackup License Keys   6

This chapter contains basic information of entering license keys and also provides some questions and answers in regards to license keys. For detailed information and procedures on how to administer license keys, refer to the *NetBackup System Administration Guide for UNIX, Volume I*.

NetBackup 5.0 Licenses

In previous versions of NetBackup there were separate licenses for both NetBackup DataCenter and NetBackup BusinesServer, for the server licenses, and the database agents and options. NetBackup 5.0 enables all existing permanent license keys, being used by customers today, to remain valid for use with this release of NetBackup. However, it is important to understand how the previous NetBackup products, specifically NetBackup BusinesServer and NetBackup DataCenter, map to both of the server licenses as well as the database agents and options of NetBackup 5.0.

NetBackup 5.0 offers a NetBackup Enterprise Server and a NetBackup Server product. The NetBackup Enterprise Server is the next generation of the DataCenter product and the NetBackup Server is the evolution of the BusinesServer product. Therefore, the DataCenter and BusinesServer keys will, for the server licenses, turn on their respective next generation product. DataCenter server licenses, when used with NetBackup 5.0 media provides a NetBackup Enterprise Server product. The BusinesServer server licenses will update the customer into the Server product, when used with NetBackup 5.0 media.

As for the database agents and options license keys, the compatibly between NetBackup 3.4, 4.5 and 5.0 is a little different. The NetBackup 5.0 product line changes include a single database agent and options offering for both the NetBackup Enterprise Server and NetBackup Server offerings. In other words, there will not be separate license keys or separate pricing for each database agent or option in NetBackup 5.0. For example, there is just one Oracle Agent available for purchase to use with either the NetBackup Enterprise Server or NetBackup Server product.

Therefore, the NetBackup 3.4 and NetBackup 4.5 license keys for each database agent or option will turn on the same database agent or option when used with NetBackup 5.0 media. Using the Oracle Agent as an example, the NetBackup 4.5 DataCenter Oracle

Agent license key will turn on the NetBackup 5.0 Oracle Agent in a NetBackup 5.0 Enterprise Server environment. And a NetBackup 4.5 BusinesServer Oracle agent will turn on the NetBackup 5.0 Oracle agent in the NetBackup Server environment.

Entering License Keys

During the installation of NetBackup on a master server, you are prompted to enter your product license key. During the installation procedure, you are directed to enter all of the license keys that you have. VERITAS recommends that you enter all of your license keys when you are prompted by the install script. However, if you did not enter all of your license keys, you can open the NetBackup Administration Console and select **Help > License Keys...** and then enter your keys at a later time, or use get_license_key on UNIX systems.

One of the most frequently asked questions that a users asks is, "which server should they enter their license keys on if they did not enter all of their keys in during installation process?" All product license keys must be entered on the master server. However, some features and products require the keys to also be installed on the media server. The following list identifies features that require keys to be installed on the media servers in addition to the master servers.

◆ NetBackup SAN Shared Storage Option (SSO)

◆ Library-based Tape Drives Feature

◆ NetBackup Offhost Data Mover Feature

Finally, customers can view, enter, and administer licenses from almost any server within a system. Because of this, if you are attempting to administer license keys remotely, you must be sure you are viewing the licenses of the system you intend to change to avoid adding or changing a license on the wrong server.

The following section contains some common questions that may help you understand how to manage your license keys.

Frequently Asked Questions

The following list contains questions that VERITAS customers have asked about managing license keys. If you are viewing this list using an online media format, you can click on a question and jump directly to that question and answer.

◆ "Is NetBackup's licensing the same as the licensing in other VERITAS products?"

◆ "Can I use NetBackup if all I have is a media/doc kit?"

◆ "What does the license key look like? What information does it contain?"

◆ "Is the license key serialized?"

◆ "Can I see reports on what keys I have?"

◆ "How do I enable options and agents?"

◆ "Should I save keys after they have been entered?"

◆ "What should I do if I have lost my license key(s)?"

◆ "How will large volume orders be handled?"

◆ "What about license keys for customers with site licenses?"

◆ "Will I need a license key to enable remote administrative consoles?"

◆ "Can a key be used multiple times?"

◆ "How will existing customers get keys?"

◆ "What if I do not get the right keys?"

◆ "What does an evaluation key enable?"

◆ "Will I be notified when an evaluation is about to expire?"

◆ "What happens when an evaluation key expires?"

◆ "Will backup configuration and catalog information be saved?"

◆ "How do I upgrade from an evaluation license to a permanent license?"

Is NetBackup's licensing the same as the licensing in other VERITAS products?

NetBackup is implementing the common licensing system that will eventually be used by all VERITAS products. This licensing system was developed in-house; it is not from a third party. However, please note that different VERITAS products have different requirements and our common licensing system provides considerable flexibility in what licensing features will be implemented in each product. For example, NetBackup will not have a node-locked licensing system, but some other VERITAS products will.

Can I use NetBackup if all I have is a media/doc kit?

No. The media/doc kit by itself does not allow any access to NetBackup. You will always need a license key (either permanent or evaluation) to get up and running. License keys should always be delivered with the media/doc kit, so you should never find yourself with a media/doc kit and no key.

What does the license key look like? What information does it contain?

The key is a multi-digit alphanumeric string (for example:, 8EPP-ABCD-9XYZ-XYZ9-8881-VCF4-OIUF-AJDC). It contains information on whether the key is for NetBackup Server or NetBackup Enterprise Server, whether it is for a server, client, agent, or option (and which one), whether it is a permanent or evaluation, and information about how and where the key was generated.

Is the license key serialized?

Yes, there is serialization information embedded in the key.

Can I see reports on what keys I have?

Yes, information about the keys is stored at the master server and can be accessed using a command line program (UNIX) or the NetBackup Administration Consoles (Windows and UNIX).

How do I enable options and agents?

You will be prompted to enter all keys for options and agents at the time you install NetBackup. If you purchase an agent or option at a later date, you can enter new license keys using the command line and NetBackup Administration Consoles referenced above.

Many options and agents will require you to have your original NetBackup distribution CDs because additional binaries will need to be installed. You should always keep your NetBackup CDs in a safe or accessible place.

Should I save keys after they have been entered?

Yes, copies of the keys should always be stored in a secure place.

What should I do if I have lost my license key(s)?

VERITAS will have a record of all keys issued to VERITAS customers. Customers who lose their license key(s) can call Order Management to get copies of their keys.

> For Americas, Japan, PacRim, Australia:
> Tel: 650.318.4265   FAX: 650.335.8428
> For Europe, Middle East and Africa:
> Tel: 00.353.61.365232 FAX: 00.353.61.365223

If you have purchased NetBackup from a VERITAS partner, you will need to contact that partner for information on your key.

How will large volume orders be handled?

We recognize that many NetBackup installations are very large, and entering long license keys multiple times can be tedious and time-consuming. Therefore we have provided the option for customers who are placing volume orders to request a single key for each type of NetBackup component purchased. For example, a customer who is ordering 50 Lotus Notes agents can get a single key, with a certificate stating that the key may be used for 50 Lotus Notes licenses. Even site licenses, with unrestricted use for specific NetBackup agents or options, can be handled in this manner.

> **Note** You will still need a unique key for each type of NetBackup component purchased - NetBackup server, Lotus Notes agent, NDMP option, UNIX client, and so forth.

What about license keys for customers with site licenses?

Site licenses will be handled the same way that large volume orders are, however, instead of the certificate stating that the license key is good for X number of copies of, for example, the Lotus Notes agent, the certificate will state that the license key is good for unlimited copies of the Lotus Notes agent.

Will I need a license key to enable remote administrative consoles?

NetBackup enables customers to install remote administrative consoles. There is no special license key for them.

Can a key be used multiple times?

Yes. The keys may be used multiple times, however you are still legally bound to only install and use the number of NetBackup servers, clients, agents, and options that you have purchased licenses for.

How will existing customers get keys?

All NetBackup customers who have current maintenance contracts with VERITAS will receive the latest version NetBackup automatically. You will receive the NetBackup Enterprise Server or NetBackup Server media/doc kit, and you will receive license keys for every NetBackup component that our records indicate you have purchased licenses for.

If your maintenance is through a VERITAS partner, you will be upgrading through the partner. Contact the partner for more details.

What if I do not get the right keys?

If you believe you are entitled to a key that you did not receive, you should contact the Order Management number provided on your license key certificate.

> **Note** VERITAS Technical Support will *not* issue permanent keys, this can only be done through VERITAS Order Management. However, Technical Support is prepared to provide temporary one-month keys to you to keep you up and running while any issue regarding permanent license keys is resolved.

What does an evaluation key enable?

The evaluation key enables unrestricted use of NetBackup Server or NetBackup Enterprise Server, as well as any of their options and agents, for a predetermined period of time.

Will I be notified when an evaluation is about to expire?

You can find information about when a key expires in the *About* box in the NetBackup Administration Console, by using the get_license_key command, or you'll find it in your system logs.

What happens when an evaluation key expires?

The daemons are all shut down, and when you attempt to use the product you will be informed that its evaluation period has expired.

Will backup configuration and catalog information be saved?

Yes. Customers who add a permanent license key to an evaluation version of NetBackup will have immediate access to their catalog and configuration information.

How do I upgrade from an evaluation license to a permanent license?

It is easy. When you purchase a permanent license, you will just add that license to NetBackup and you will be ready to go. All the configuration information and catalog data from your evaluation version will be retained.

Related Documents

A

This appendix lists and describes the technical manuals that realate to NetBackup.

The CD-ROM for each NetBackup product has a copy of the related manuals in Adobe Portable Document Format (PDF). The PDF files are either in the root directory or the `Doc` directory on the CD-ROM.

To view the PDF copies of the manuals, you need an Adobe Acrobat reader, which you can download from the Adobe web site at http://`www.adobe.com`. VERITAS assumes no responsibility for the correct installation or use of the reader.

Release Notes

◆ *VERITAS NetBackup Release Notes for UNIX and Windows*

NetBackup_Release_Notes.pdf

Provides important information about NetBackup on UNIX- and Windows-based servers, such as the platforms and operating systems that are supported and operating notes that may not be in the NetBackup manuals or the online help.

Installation Guides

◆ *VERITAS NetBackup Installation Guide for UNIX*

NetBackup_Install_UNIX.pdf

Explains how to install NetBackup software on UNIX-based platforms.

◆ *VERITAS Security Services Installation Guide*

VxSS_InstallGuide.pdf on the VERITAS Security Services CD-ROM.

Explains install and configure the VERITAS Security Services.

System Administrator's Guides - Basic Product

◆ *VERITAS NetBackup System Administrator's Guide for UNIX, Volume I*

   NetBackup_AdminGuideI_UNIXServer.pdf

   Explains how to configure and manage NetBackup on a UNIX server, including managing storage units, backup policies, catalogs, and host properties.

◆ *VERITAS NetBackup System Administrator's Guide for UNIX, Volume II*

   NetBackup_AdminGuideII_UNIXServer.pdf

   Explains additional NetBackup features such as access control and enhanced authorization and authentication. The guide also discusses using NetBackup with AFS and Intelligent Disaster Recovery (IDR).

◆ *VERITAS NetBackup Media Manager System Administrator's Guide for UNIX*

   MediaMgr_AdminGuide_Unix.pdf

   Explains how to configure and manage the storage devices and media on UNIX servers running NetBackup. Media Manager is part of NetBackup.

◆ *VERITAS Security Services Administrator's Guide*

   VxSS_AdminGuide.pdf on the VERITAS Security Services CD-ROM.

   Explains how to configure and manage core security mechanisms, including authentication, protected communications, and authorization.

System Administrator's Guides - Agents and Options

◆ *VERITAS NetBackup Advanced Client System Administrator's Guide*

   NetBackup_AdminGuide_AdvancedClient.pdf

   Explains how to install, configure, and use NetBackup Advanced Client. Advanced Client includes the features of FlashBackup, instant recovery, and frozen image and offhost backup.

◆ *VERITAS NetBackup Database Archiver System Administrator's Guide for UNIX*

   NetBackup_AdminGuide_DatabaseArchiver.pdf

   Explains how to install, configure, and use NetBackup for Database Archiver for Oracle on UNIX.

◆ *VERITAS NetBackup for DB2 System Administrator's Guide*

   NetBackup_AdminGuide_DB2_Unix.pdf

   Explains how to install, configure, and use NetBackup for DB2.

◆ *VERITAS NetBackup Encryption System Administrator's Guide*

NetBackup_AdminGuide_Encryption.pdf

Explains how to install, configure, and use NetBackup encryption software to provide file-level encryption of backups and archives.

◆ *VERITAS NetBackup for Informix System Administrator's Guide*

NetBackup_AdminGuide_Informix.pdf

Explains how to install, configure, and use NetBackup for Informix to back up and restore Informix databases that are on a UNIX NetBackup client.

◆ *VERITAS NetBackup for Lotus Notes System Administrator's Guide for UNIX*

NetBackup_AdminGuide_LotusNotes_Unix.pdf

Explains how to install, configure, and use NetBackup for Lotus Notes to back up and restore Lotus Notes databases and transaction logs.

◆ *VERITAS NetBackup for NDMP System Administrator's Guide*

NetBackup_AdminGuide_NDMP.pdf

Explains how to install, configure, and use NetBackup for NDMP to control backups on an NDMP host.

◆ *VERITAS NetBackup for Oracle System Administrator's Guide for UNIX*

NetBackup_AdminGuide_Oracle_Unix.pdf

Explains how to install, configure, and use NetBackup for Oracle to back up and restore Oracle databases that are on a UNIX NetBackup client.

◆ *VERITAS NetBackup for SAP System Administrator's Guide for UNIX*

NetBackup_AdminGuide_SAP_Unix.pdf

Explains how to install, configure, and use NetBackup for SAP on UNIX.

◆ *VERITAS NetBackup for SYBASE System Administrator's Guide for UNIX*

NetBackup_AdminGuide_Sybase_Unix.pdf

Explains how to install, configure, and use NetBackup for SYBASE to back up and restore Sybase databases that are on a UNIX NetBackup client.

◆ *VERITAS NetBackup Global Data Manager System Administrator's Guide for UNIX and Windows*

NetBackup_AdminGuide_GDM.pdf

Explains how to install, configure, and use Global Data Manager (GDM) for NetBackup on UNIX and Windows-based operating systems.

◆ *VERITAS NetBackup Vault System Administrator's Guide for UNIX and Windows*

NetBackup_AdminGuide_Vault.pdf

Describes how to configure and use logical vaults and profiles to duplicate backups, perform catalog backups, eject media, and generate reports.

◆ *VERITAS NetBackup Advanced Reporter System Administrator's Guide for UNIX and Windows*

NetBackup_AdminGuide_AdvancedReporter.pdf

NetBackup Advanced Reporter (NBAR) is a backup and storage management monitoring tool designed to simplify the task of monitoring and reporting on an organization's VERITAS NetBackup activities.

◆ *VERITAS NetBackup SAN Shared Storage Option System Administrator's Guide for UNIX and Windows*

MediaMgr_AdminGuide_SSO.pdf

Provides information on installing and configuring the NetBackup Shared Storage Option (SSO) on UNIX and Windows-based servers. SSO is an extension to tape drive allocation and configuration for NetBackup Media Manager.

User's Guides

◆ *VERITAS NetBackup User's Guide for UNIX*

NetBackup_UserGuide_Unix.pdf

Explains how to use NetBackup on a UNIX client to perform backups, archives, and restores.

◆ *VERITAS NetBackup Vault Operator's Guide for UNIX and Windows*

NetBackup_OperGuide_Vault.pdf

Describes procedures for sending tapes offsite, receiving tapes on site, and running reports on offsite media and vault jobs.

Device Configuration Guide - Media Manager

◆ *VERITAS NetBackup Media Manager Device Configuration Guide for UNIX and Windows*

MediaMgr_DeviceConfig_Guide.pdf

Explains how to add device drivers and perform other system-level configurations for storage devices and media servers (or SAN media servers) that are supported by NetBackup Media Manager.

Troubleshooting Guide

◆ *VERITAS NetBackup Troubleshooting Guide for UNIX and Windows*

NetBackup_Troubleshoot_Guide.pdf

Provides troubleshooting information for UNIX- and Windows-based NetBackup products, including Media Manager.

NetBackup Commands

◆ *VERITAS NetBackup Commands for UNIX*

NetBackup_Commands_UNIX.pdf

Describes NetBackup and Media Manager commands and processes that can be run from a UNIX command line.

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