

Symantec NetBackup™ Installation Guide

Windows

Release 7.1

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Symantec Corporation
350 Ellis Street
Mountain View, CA 94043

<http://www.symantec.com>

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- Operating system
- Version and patch level
- Network topology
- Router, gateway, and IP address information
- Problem description:
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Asia-Pacific and Japan customercare_apac@symantec.com

Europe, Middle-East, and Africa semea@symantec.com

North America and Latin America supportsolutions@symantec.com

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Preparing for installation

This chapter includes the following topics:

- [About changes in NetBackup 7.1](#)
- [About changes in NetBackup 7.0](#)
- [About NetBackup mixed version support](#)
- [About NetBackup 7.1 availability](#)
- [Requirements for Windows NetBackup server installation](#)
- [Requirements for upgrading Windows servers to NetBackup 7.1](#)
- [About the NetBackup preinstallation Environment Checker](#)
- [About storage device configuration](#)
- [About replacing NetBackup server types not supported in NetBackup 7.x](#)
- [How to install NetBackup](#)

About changes in NetBackup 7.1

The following describes some important changes to NetBackup version 7.1. For complete details, see the *NetBackup Release Notes* for version 7.1.

Note: If you currently use NetBackup 6.x and plan to upgrade to version 7.1, be aware that NetBackup version 7.0 contained many changes and enhancements. Before you upgrade from any 6.x version to 7.1, refer to the *NetBackup Release Notes* for 7.1 for complete details. You can also refer to the following topic for a summary of changes in NetBackup 7.0: See [“About changes in NetBackup 7.0”](#) on page 13.

NetBackup Access Control	<p>Starting with NetBackup 7.1, this option is installed with the NetBackup server and the client packages (if the platform supports the product). A separate installation or upgrade procedure is no longer required. However, the option must be configured to be used.</p> <p>The components have been renamed to NetBackup Product Authentication and Authorization.</p>
UNIX systems	<ul style="list-style-type: none">■ Native packaging for NetBackup clients NetBackup 7.1 delivers the following NetBackup clients in their native package formats: AIX, HP-UX, Linux, and Solaris. Installation on these systems is unchanged, therefore the packages are not standalone. However, removal of NetBackup from these systems now requires the use of native commands. All other UNIX client packages are delivered in the same format as previous versions.
Windows systems	<ul style="list-style-type: none">■ New preinstallation Environment Checker feature This feature lets you check those computers where you plan to install or upgrade to NetBackup 7.1. After you run the Environment Checker, a summary of the results identifies any potential issues that may prevent a successful installation or upgrade. Also, a log is generated that describes the complete results and identifies which areas to address before you install or upgrade to NetBackup 7.1. See “About the NetBackup preinstallation Environment Checker” on page 24.■ Improved integrated cluster installation and upgrade process The process to install and upgrade cluster installations has been improved to provide feedback to customers, and to validate cluster environments before configuration takes place. See “Installing or upgrading servers in clustered environments” on page 65.

Upgrade note for OpenStorage optimized duplication

Two features in NetBackup that use OpenStorage may conflict if you use both of them and do not configure them correctly. If the features are configured incorrectly, unpredictable duplication results may occur.

Table 1-1 describes the two features.

Table 1-1 OpenStorage duplication features

Feature	Description
Duplication to a remote master server domain	<p>Duplication to a remote master server is a new feature in NetBackup 7.1. With this feature, you can duplicate backup images to a different master server domain.</p> <p>For information about duplication to a remote master server domain, see the <i>NetBackup Administrator's Guide, Volume I</i>.</p>
Optimized duplication	<p>OpenStorage optimized duplication copies backup images to different storage within the same NetBackup master server domain.</p> <p>For information about OpenStorage optimized duplication, see the <i>NetBackup Shared Storage Guide</i>.</p> <p>For information about optimized duplication of deduplicated data, see the <i>NetBackup Deduplication Guide</i>. NetBackup deduplication uses the OpenStorage framework.</p>

If you use both features, the critical configuration detail is when you select the target storage server or servers. For duplication to a remote master server, a target storage server must not also be a storage server for the source domain. Therefore, choose the target storage server or servers carefully.

These duplication features are supported in the following environments:

- From a disk appliance to a disk appliance.
 The disk appliances must support the Symantec OpenStorage API.
- From a NetBackup **Media Server Deduplication Pool** to another **Media Server Deduplication Pool**.

About changes in NetBackup 7.0

If you currently use NetBackup 6.x and plan to upgrade to version 7.1, be aware that version 7.0 contained many changes and enhancements. The following describes some important changes to NetBackup version 7.0. For complete details, see the *NetBackup Release Notes* for version 7.0.

Veritas Storage Migrator (VSM)	This product has reached its end of life and is no longer supported.
--------------------------------	--

NetBackup Operations Manager (NOM)

Starting with NetBackup 7.0, NOM has been replaced with OpsCenter.

If your current 6.x NetBackup environment includes NOM 6.x, you can upgrade NOM to OpsCenter with an upgrade to NetBackup 7.0.

Platform and operating system support changes

Starting with NetBackup 7.0, the following platform support changes apply:

- Except for FreeBSD clients and Mac clients, all UNIX 32-bit system support has been discontinued.
To upgrade these systems to NetBackup 7.0, you must first migrate your current NetBackup 6.x catalogs and databases to a system with a supported 64-bit platform. However, 32-bit media servers and the clients that use NetBackup 6.x are compatible with NetBackup 7.0 64-bit master servers.
Also, NetBackup requires OpenStorage vendor plug-ins to be 64-bit. When you upgrade a media server that is used for OpenStorage to NetBackup 7.0, you also must update the vendor plug-in to a 64-bit version.
For details about how to replace the servers that currently use these unsupported platforms, refer to the following section:
[See “About replacing NetBackup server types not supported in NetBackup 7.x” on page 30.](#)
- IRIX and Tru64 are no longer supported.
Servers and clients with these operating systems that use NetBackup 6.x are compatible with NetBackup 7.0 servers.
- All 64-bit platforms are supported except for FreeBSD clients and Mac clients.
- Windows IA64 is supported only as a client.
- Linux SUSE and Linux RedHat Itanium are no longer supported for use as master or media servers. These platforms are only supported as a client.
- HP-UX PA-RISC is no longer supported as a master server. This platform is supported only as a true media server (media server without the EMM server) or a true client.
- Novell NetWare is no longer supported for use as a media server. This platform is only supported as a client.

UNIX package consolidation Starting with NetBackup 7.0, most of the add-on products and database agents are now installed with the NetBackup server or the client package. Separate installation for these products is no longer needed.

The following products are now included in the NetBackup server package (if the platform supports the product):

- BMR master server
- NDMP
- NetBackup Vault

The following products are now included in the NetBackup client package (if the platform supports the product):

- BMR Boot server
- DB2
- NetBackup Encryption
- Informix
- LiveUpdate agent
- Lotus Notes
- Oracle
- SAP
- Snapshot Client
- Sybase

The binaries for the listed products are laid down with the server or the client package. A valid license is still required to enable the product. If product configuration was required previously (such as `db2_config`), configuration is still required.

Note: For Solaris server upgrades, the older versions of any listed products here must be removed before an upgrade to NetBackup 7.0. For example, `VRTSnbdb2`, `SYMCnbdb2`, `VRTSnbenc`, `SYMCnbenc`, and others. The installation script displays a list of the packages it finds that must be removed.

The French, Japanese, and the Chinese language packages remain as separate add-ons. The process to install and upgrade these products remains the same.

NetBackup Product Authentication and Authorization (NetBackup Access Control)

Starting with NetBackup 7.0, this feature is included and installed with NetBackup. A valid license is still required to enable the product. Configuration is also required to use this feature.

Clustered media server support changes

New NetBackup 7.0 media server installations cannot be clustered. However, existing 6.x clustered media servers can be upgraded to version 7.0 and remain clustered.

See [“About NetBackup mixed version support”](#) on page 16.

See [“About NetBackup 7.1 availability”](#) on page 17.

About NetBackup mixed version support

You can run mixed versions of NetBackup between master servers, media servers, and clients. This back-level support lets you upgrade NetBackup one server at a time, which minimizes the effect on overall system performance. Symantec supports only certain combinations of servers and clients.

[Table 1-2](#) lists the supported mixed version configurations for NetBackup 7.1.

Table 1-2 Supported NetBackup mixed version configurations

Configuration	Master server version	Media server version	Client version
1	7.1	7.1	7.1
2	7.1	7.1	6.5.x, 6.0.x, or 7.0.x
3	7.1	6.5.x, 6.0.x, or 7.0.x	6.5.x, 6.0.x, or 7.0.x Clients in this configuration must use a version that is equal to or earlier than media server versions.

NetBackup versions 7.0 and later do not support Windows 2000 systems. However, you can still use NetBackup version 6.x on Windows 2000 clients with your NetBackup 7.x servers.

The following describes what type of action to take if you have any clients that run Windows 2000:

Existing NetBackup customers with Windows 2000 clients at NetBackup version 6.x:

No action is required. These clients are compatible with NetBackup version 7.x master and media servers.

However, it is recommended that you replace these systems with clients that use a more current operating system to ensure future compatibility.

New NetBackup customers with Windows 2000 systems:

You must install NetBackup version 6.x client software on your Windows 2000 systems.

To obtain NetBackup version 6.x, contact your Symantec NetBackup representative or call technical support.

For complete information on mixed version support, see the *NetBackup Release Notes* for version 7.1. Refer to the section "NetBackup backward compatibility".

See "[About changes in NetBackup 7.1](#)" on page 11.

See "[About changes in NetBackup 7.0](#)" on page 13.

See "[About NetBackup 7.1 availability](#)" on page 17.

About NetBackup 7.1 availability

NetBackup 7.1 is available in the following formats:

- DVD media kit
 All necessary software and documentation files are provided on several DVDs.
 See "[About the NetBackup media kit](#)" on page 17.
- Electronic Software Distribution (ESD) images
 The DVD image files are posted and available for download on the **FileConnect** Website.
 See "[About the NetBackup Electronic Software Distribution \(ESD\) images](#)" on page 19.

About the NetBackup media kit

The media kit includes a DVD for each supported UNIX platform or operating system and one DVD for Windows. The label on each DVD provides a brief description of its contents.

NetBackup documentation is also included. All documentation for the NetBackup software products in this release is included.

Printed materials include a getting started guide. Documentation on the DVDs is in Portable Document Format (PDF). You can use Acrobat Reader to open, view, and print the files.

If Autorun is enabled on your Windows system, you see a Web page that lists the documents that you can select to view. On UNIX or Linux systems, or if Autorun is disabled on the Windows system, navigate to the DVD drive to view the DVD contents. From that drive, you can select the documents to view or copy them to a local drive.

The following table describes the contents of each DVD.

Table 1-3 NetBackup 7.1 DVD contents

DVD No.	Platform OS	Contents
1	AIX 64-bit	<ul style="list-style-type: none"> ■ Server and supported options ■ NetBackup documentation
2	HP-UX IA64	<ul style="list-style-type: none"> ■ Server and supported options ■ NetBackup documentation
3	HP-UX PA-RISC	<ul style="list-style-type: none"> ■ Server and supported options ■ NetBackup documentation
4	Linux RedHat x86_64	<ul style="list-style-type: none"> ■ Server and supported options ■ NetBackup documentation
5	Linux SUSE x86_64	<ul style="list-style-type: none"> ■ Server and supported options ■ NetBackup documentation
6	Solaris SPARC64	<ul style="list-style-type: none"> ■ Server and supported options ■ NetBackup documentation
7	Solaris x86-64	<ul style="list-style-type: none"> ■ Server and supported options ■ NetBackup documentation
8	Windows x86 and x64	<ul style="list-style-type: none"> ■ Server and supported options ■ All x86, x64, and IA64 clients ■ NetBackup documentation
9	Linux zSeries RedHat x64	<ul style="list-style-type: none"> ■ Server and supported options ■ NetBackup documentation
10	Linux zSeries SUSE x64	<ul style="list-style-type: none"> ■ Server and supported options ■ NetBackup documentation

Table 1-3 NetBackup 7.1 DVD contents (*continued*)

DVD No.	Platform OS	Contents
11	UNIX clients	<ul style="list-style-type: none"> ■ All UNIX clients ■ NetBackup documentation
12	Clients in LiveUpdate format	<ul style="list-style-type: none"> ■ All UNIX and Windows clients in LiveUpdate format ■ Readme document
13	OpsCenter (1 of 3)	<ul style="list-style-type: none"> ■ All Windows platforms ■ ICS (NBAC)
14	OpsCenter (2 of 3)	<ul style="list-style-type: none"> ■ RedHat ■ SUSE ■ Solaris x86 ■ ICS (NBAC)
15	OpsCenter (3 of 3)	<ul style="list-style-type: none"> ■ AIX ■ HP-UX IA64 ■ Solaris SPARC ■ ICS (NBAC)

In addition to NetBackup DVDs, the media kit also includes the following items:

- OpenVMS Client (CD)
- RealTime 7.1 (DVD)

See [“About the NetBackup Electronic Software Distribution \(ESD\) images”](#) on page 19.

See [“About NetBackup 7.1 availability”](#) on page 17.

About the NetBackup Electronic Software Distribution (ESD) images

The ESD images for NetBackup 7.1 are available for download from the **FileConnect** Web page. The images adhere to a 1.8G size limitation.

The following describes how the images for each platform can be downloaded:

UNIX	<p>Compressed <code>.tar</code> files (<code>gzip</code>) are posted.</p> <p>A <code>Readme</code> file on FileConnect describes the following points:</p> <ul style="list-style-type: none">■ The images you must download to install NetBackup or OpsCenter.■ How to create a local file share with a directory structure that allows installation of NetBackup, OpsCenter, and clients on multiple platforms.
Windows	<p>The DVD image is broken down into smaller files.</p> <p>You must download all files that are associated with the Windows image.</p> <p>A <code>Readme</code> file on FileConnect describes how to assemble these files into a single <code>.zip</code> file.</p>

See [“About NetBackup 7.1 availability”](#) on page 17.

See [“About the NetBackup media kit”](#) on page 17.

Requirements for Windows NetBackup server installation

Before you install NetBackup, make sure that your backup environment meets the following requirements:

Other backup software	Remove any other vendor’s backup software currently configured on your system. The backup software of another vendor can negatively affect how NetBackup installs and functions.
OS updates	Before you install your NetBackup product, make sure that you have applied the most current operating system patches and updates. If you are not certain that your operating system is current, contact your operating system vendor and request the latest patches and upgrades.
Storage devices	Devices such as robots and stand-alone tape drives must be installed according to the manufacturers’ instructions and recognized by the Windows software.
Backup environment communication	<p>Make sure that your network configuration allows all servers and clients to recognize and communicate with one another.</p> <p>Generally, if you can reach the clients from a server by using the ping command, the setup works with NetBackup.</p>

Server configuration	<p>The server system configuration should comply as follows:</p> <ul style="list-style-type: none">■ Operating system Windows 2003 Server/XP, Windows 2008 Server/Vista, or Windows 2008 R2 Server/Windows 7.■ Memory As a general rule, the minimum memory requirement for master servers is 2GB RAM per processor. For additional information about memory requirements, refer to the <i>NetBackup Backup Planning and Performance Tuning Guide</i>.■ Screen resolution Should be configured for at least 1024x768, 256 colors.
Disk space requirements	<ul style="list-style-type: none">■ An NTFS partition.■ At least 1 GB of storage space to accommodate the server software (512 MB) and NetBackup catalogs (at least 512 MB). NetBackup catalogs contain information about your backups, which become larger as you use the product. The catalog disk space requirements depend primarily on the aspects of your backup configuration. For example, the number of files that are backed up, the frequency of your backups, and how long you retain your backup data.■ For upgrades, you must have an additional 500 MB of disk space on the drive where Windows is installed. After the upgrade is complete, this additional space is not needed.
General requirements	<p>Make sure that you have all of the following items:</p> <ul style="list-style-type: none">■ NetBackup installation DVDs or ESD images■ Appropriate license keys■ Administrator account and password for all servers <p>Note: To install NetBackup on Windows 2008/Vista and Windows 2008 R2/Windows 7 UAC-enabled environments, you must log on as the official administrator. Users that are assigned to the Administrators Group and are not the official administrator cannot install NetBackup in UAC-enabled environments. To allow users in the Administrators Group to install NetBackup, disable UAC.</p>
Server names	<p>When you are prompted for server names, always enter the appropriate host names. Do not enter IP addresses.</p>

Mixed versions	Make sure to install NetBackup servers with a release level that is at least equal to the latest client version that you plan to use. Earlier versions of server software can encounter problems with later versions of client software.
CIFS-mounted file systems	Symantec does not support installation of NetBackup in a CIFS-mounted directory. File locking in CIFS-mounted file systems can be unreliable.
Installations on Windows 2008 Server Core	NetBackup can be installed on these systems only by using the silent installation method. See “Installing or upgrading NetBackup servers silently” on page 81.
NetBackup communication	NetBackup services and port numbers must be the same across the network. Symantec suggests that you use the default port settings for NetBackup services and Internet service ports. If you modify the port numbers, they must be the same for all master servers, media servers, and clients. The port entries are in the following file: <code>%SYSTEMROOT%\system32\drivers\etc\services</code> To change the default settings, you must perform a NetBackup custom installation of NetBackup or edit the <code>services</code> file manually.
Remote Administration Console installation	You must provide the names of Remote Administration Console hosts during master server installation.
Remote and cluster installations	In addition to all previously stated installation requirements, the following guidelines apply to remote installations and cluster installations: <ul style="list-style-type: none">■ The source system (or primary node) must run Windows 2003/2008/2008 R2 Server.■ The destination PC (or clustered nodes) must have Windows 2003/2008/2008 R2 Server.■ The installation account must have administrator privileges on all the remote systems or on all nodes in the cluster.■ All nodes in a cluster must run the same operating system, service pack level, and version of NetBackup. You cannot mix versions of server operating systems.

Requirements for upgrading Windows servers to NetBackup 7.1

The following describes the general requirements for Windows server upgrades:

Supported upgrade paths	<ul style="list-style-type: none"> ■ Direct upgrades to NetBackup 7.1 You can upgrade directly to NetBackup 7.1 from any 6.x versions or 7.0 versions. This installation guide includes the procedures for upgrading from 6.x or 7.0 to 7.1. ■ Upgrades from 5.x versions If you currently use NetBackup 5.x versions, you cannot upgrade directly to 7.1. You must first upgrade to NetBackup 6.0 or 6.5. Symantec recommends that you upgrade to 6.5. An upgrade guide is posted on the upgrade portal at the following location: http://seer.entsupport.symantec.com/docs/290185.htm. After you upgrade to 6.5, you can upgrade to 7.1.
Back up databases	Before you proceed with any upgrade procedure, always back up your existing NetBackup database. If an error occurs during the upgrade, you can restore the previous version and still retain your information from the database backup.
Review installation requirements	<p>Many of the NetBackup server installation requirements also apply to NetBackup upgrades. Review these requirements before you upgrade.</p> <p>See “Requirements for Windows NetBackup server installation” on page 20.</p>
Upgrades on Windows 2008 Server Core	<p>NetBackup can be upgraded on these systems only by using the silent installation method.</p> <p>See “Installing or upgrading NetBackup servers silently” on page 81.</p>
Converting master servers to be media servers	When you perform an upgrade, a master server cannot be changed to a media server. To make this change, you must first uninstall the earlier version of NetBackup, then perform an installation of the new version.
Converting non-failover servers to be NetBackup failover (clustered) servers	For NetBackup Enterprise upgrades, you cannot convert an existing non-failover server to a highly available NetBackup failover (clustered) server.

Version support between servers and clients	Make sure that the NetBackup version on each server is at least equal to the version on any clients. Earlier software versions on servers can encounter problems with later software versions on clients. See “About NetBackup mixed version support” on page 16.
Add-on product versions	Add-ons must be at the same version as the NetBackup server or the client where the add-on is installed.
NetBackup Access Control (NBAC)	Starting with NetBackup 7.1, NetBackup Access Control (NBAC) is installed with NetBackup. A separate upgrade is no longer required. An upgrade to version 7.1 installs new NBAC files that are embedded within NetBackup. If you currently use NBAC with products other than NetBackup, the existing NBAC files are located in a shared directory. These files are not upgraded when you upgrade to NetBackup 7.1 so that you can continue to use NBAC with those products.
Conflicts with older clients and new features	If you have NetBackup clients that are unsupported for NetBackup 7.x, you may encounter problems with new features in this release. If you do not plan to upgrade these earlier version clients, move them to a separate policy.
NetBackup Administration Console	The NetBackup Administration Console must be closed when you upgrade NetBackup. Otherwise, NetBackup may cause a failure that forces you to restart the procedure.

About the NetBackup preinstallation Environment Checker

Starting with NetBackup 7.1, an Environment Checker is included to help identify any problems that may prevent a successful NetBackup server installation or upgrade.

The Environment Checker is available as a link on the DVD browser and is a standalone function that you run before an installation or an upgrade.

The Environment Checker provides you with the following abilities:

- Assess a system to determine if it is ready for a new NetBackup installation or upgrade.
- Perform the assessment on local and remote Windows systems.

- Create a list of remote computers to check, either manually or by browsing the network.
- Run the Environment Checker on all supported Windows platforms that support NetBackup as a master server or a media server (x86 and x64).
- Generate HTML reports for immediate viewing.

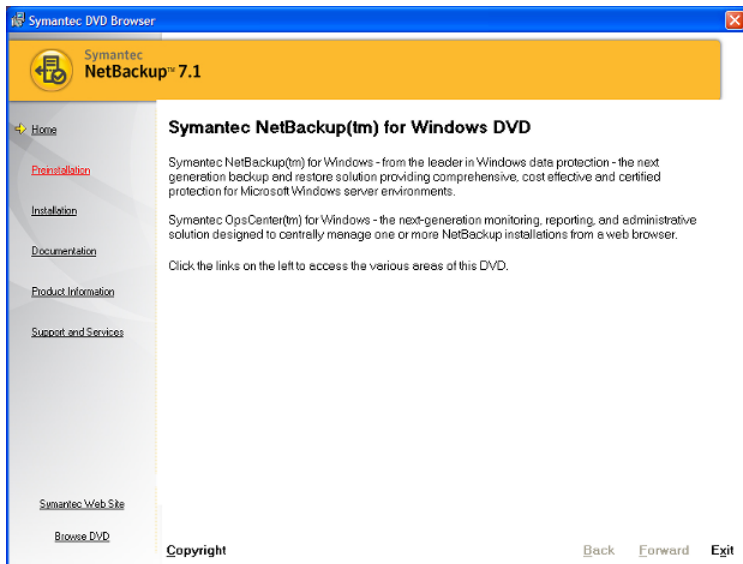
See “ [Running the preinstallation Environment Checker](#)” on page 25.

Running the preinstallation Environment Checker

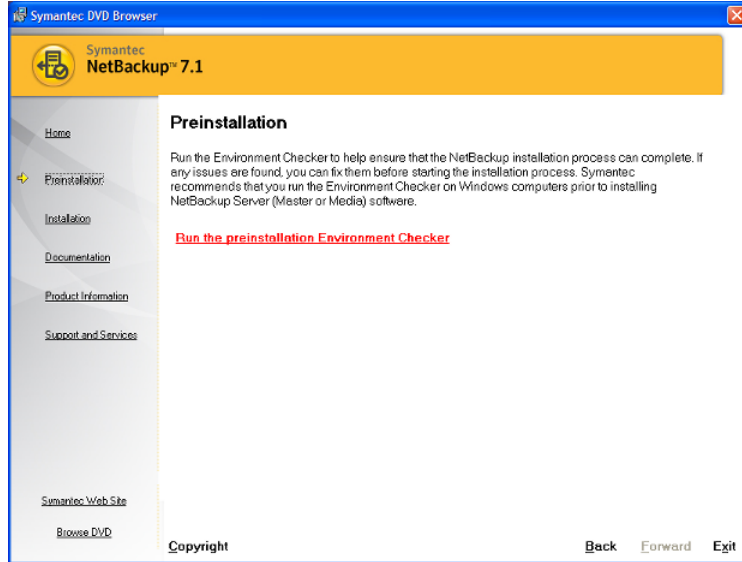
Use the following procedure to run the Environment Checker and assess whether computers are ready for NetBackup installation.

To run the Environment Checker

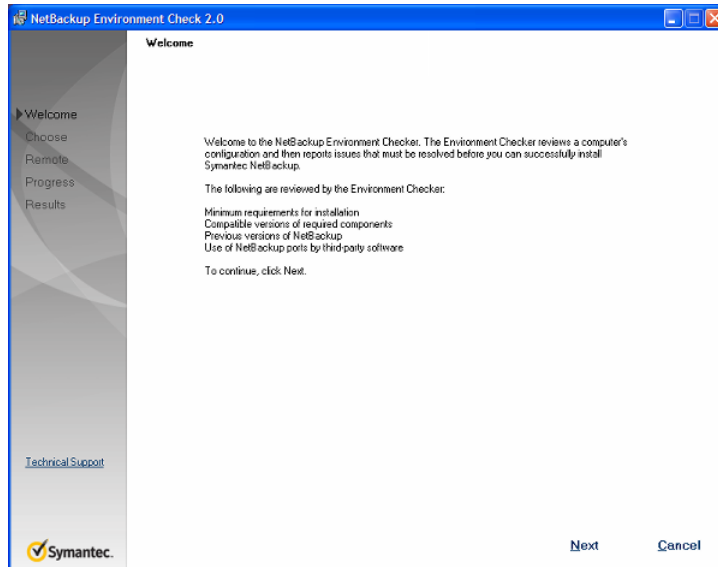
- 1 Start the NetBackup Installation Wizard with one of the following methods:
 - **DVD media**
 Insert the NetBackup for Windows DVD in the drive. If Autorun is disabled, navigate to the DVD drive and run `Browser.exe`.
 - **ESD images (downloaded files)**
 Navigate to the directory where the images reside and run `Browser.exe`.
- 2 On the **Home** screen, click **Preinstallation**.



- 3 On the **Preinstallation** screen, click **Run the preinstallation Environment Checker**.



- 4 On the **Welcome** screen, review the content and click **Next**.



5 On the **Choose** screen, select the systems to check as follows:

- Local Environment Check** (default) To check the local computer only, leave this option checked and click **Next**.
 After the computer check has completed, a summary page appears that describes the results.
- Remote Environment Check**
- To check one or more remote computers, select this option and click **Next**.
Note: You can keep the **Local Environment Check** option to include the local computer. You can also deselect this option to exclude it.
 - On the **Remote** screen, add or remove computers to check as follows:
 - **Add Server From List**
 Click this option to select a computer from a list of available systems on your network. Then click **Next**.
 Enter the appropriate **User Name** and **Password** for the selected computer, then click **OK**.
 - **Add Server Manually**
 Click this option to add computer names manually.
 On the **Manual Remote Computer Selection** dialog box, enter the appropriate **Domain Name** and the **Server Name**, then click **OK**.
 On the **Remote Computer Login Credentials** dialog box, enter the appropriate **User Name** and **Password**, then click **OK**.
 - **Remove**
 To remove a computer from the **Remote Computers** list, select the computer from the list and click **Remove**.
 - After all computers that you want to check are added to the **Remote Computers** list, click **Next**. The Environment Checker performs a validation process for each remote computer. After all have been completed, click **Next** to start the check on all listed computers.

- 6 When all computers have been checked, the **Results** screen displays a list of the checked systems with a brief result under each computer name. Click on a computer name to see the complete results for that computer. The following describes the symbols that may appear in a summary:

Green check mark	Indicates that the item meets the requirements for a NetBackup installation or an upgrade.
Yellow exclamation point	Indicates that a potential issue has been detected that may, or may not cause a problem for a NetBackup installation or an upgrade.
Red X	Indicates that the item does not meet the NetBackup installation requirements. Any summary report items with a red X must be corrected before you attempt a NetBackup installation or an upgrade.

Note: Symantec recommends that you address all items that are marked with a yellow exclamation point and a red X. Then run the Environment Checker again.

- 7 To save the results file, do one of the following:
- To save the results file to the default location, leave the check mark for the **Save Results To** check box.
 - To save the results file to a different location, click **Change Path**, enter the appropriate location, then click **Save**.
- If you do not want to save the results file, click the **Save Results To** check box to remove the check mark.
- 8 To exit from the Environment Checker, click **Finish**.

See [“About the NetBackup preinstallation Environment Checker”](#) on page 24.

About storage device configuration

Reliable use of NetBackup depends on the proper configuration of your storage devices. To ensure reliable backups and restores, you must first install and configure devices to work with the operating system.

Before you install or upgrade to NetBackup 7.1, use the following guidelines to configure storage devices to work with the operating system:

New installations and upgrades	Before you install or upgrade to NetBackup 7.1, Symantec recommends that you install and configure your devices with the latest version of drivers.
Connections and settings	<p>To prepare and connect new devices, perform the following tasks:</p> <ul style="list-style-type: none"> ■ Set the SCSI ID (target). Make sure that it is set it to an available SCSI ID. ■ Physically attach your device to a compatible host bus adapter where that SCSI ID is available. Compatible means that both the device and the host bus adapter are of the same type. For example, single-ended, high voltage differential, low voltage differential, or Fibre Channel.
Configuration	<p>To configure storage devices to work with the operating system, refer to the following documentation:</p> <ul style="list-style-type: none"> ■ The instructions from the device and the operating system vendors. ■ The <i>NetBackup Device Configuration Guide</i>. See the chapter that is appropriate for your operating system.
NetBackup installation	After all storage devices are installed, configured, and verified to work with the operating system, you can install NetBackup.

Warning: An improperly configured device can lead to backup failures, data loss, or both.

See [“Locating supported robot types”](#) on page 29.

See [“Requirements for Windows NetBackup server installation”](#) on page 20.

Locating supported robot types

You can find a list of the supported robot types in the *Symantec NetBackup Server/Enterprise Server 7.x Hardware Compatibility List*.

For your convenience, Symantec periodically updates this document on the Symantec support Web site.

To find the latest robot types that this release supports

- ◆ Click on the following link to access the *Symantec NetBackup Server/Enterprise Server 7.x Hardware Compatibility List*:

<http://www.symantec.com/docs/TECH76495>

About replacing NetBackup server types not supported in NetBackup 7.x

Certain hardware support and operating system support has been discontinued in NetBackup 7.x. These systems must be replaced with supported systems before an upgrade to NetBackup 7.x.

For complete details about hardware and operating system support in NetBackup 7.x versions, refer to the following documents:

- *NetBackup Release Notes for 7.1*
<http://www.symantec.com/docs/DOC3412>
Refer to the sections "About platform and operating system support changes" and "About NetBackup Compatibility Lists".
- *NetBackup Enterprise Server and Server 7.x OS Software Compatibility List*
<http://entsupport.symantec.com/docs/337048>
- NetBackup server 7.x hardware compatibility list
<http://www.symantec.com/docs/TECH76495>

The following describes the general guidelines to replace unsupported servers before an upgrade to NetBackup 7.x:

About replacing NetBackup server types not supported in NetBackup 7.x**Platform and operating system**

The platform and the architecture of the new system can be different than the system that you replace, provided that you observe the following rules:

- An unsupported Windows server (hardware or operating system) should be replaced with a supported Windows server.
- An unsupported UNIX or Linux server (hardware or operating system) should be replaced with any other supported UNIX or Linux server platform and operating system. However, Red Hat Linux master servers are an exception (see the following item).
- An unsupported Red Hat Linux master server must be replaced by another Red Hat Linux master server. The version of Red Hat Linux and the server architecture may be different.

For complete details on replacing NetBackup servers in regard to platforms and operating systems, refer to the following documents on the Symantec support Web site:

- For Windows master servers:
<http://entsupport.symantec.com/docs/337969.htm>
- For UNIX master servers:
<http://entsupport.symantec.com/docs/337970.htm>
- For media servers:
<http://entsupport.symantec.com/docs/338425.htm>
- OpenStorage users should also refer to the following document for details about specific considerations in regard to upgrades to NetBackup 7.x:
<http://entsupport.symantec.com/docs/338426.htm>

NetBackup version

The new supported system must use the exact same version of NetBackup as the old system. You cannot migrate catalogs and databases from one NetBackup version to a different version.

For example, the old server uses NetBackup 6.5.2. You must install this same version on the new server before you can upgrade.

Hot catalog backup

On the old system, you must create a hot catalog backup. This backup is then used to restore the catalog to the new supported system and complete the migration.

The method that you use to create the catalog backup can make a difference in how you restore it on the new system. For example:

- Whether you back up the catalog to tape or disk
- Whether you back up the catalog to a master server or a media server

For complete details on how to create a hot catalog backup, see the *NetBackup Troubleshooting Guide*.

How to replace unsupported NetBackup master servers

The following steps describe only the primary tasks to replace an unsupported master server.

For complete detailed instructions, refer to the following documents on the Symantec support Web site:

<http://entsupport.symantec.com/docs/337969.htm>

<http://entsupport.symantec.com/docs/337970.htm>

OpenStorage users should also refer to the following document for details about specific considerations in regard to upgrades to NetBackup 7.x:

<http://entsupport.symantec.com/docs/338426.htm>

To replace an unsupported master server

- 1 Configure a new supported master server with the same name as the old unsupported master server.
See “[About replacing NetBackup server types not supported in NetBackup 7.x](#)” on page 30.
- 2 Install the same version of NetBackup on the new master server that is used on the old master server.
You must install NetBackup to the exact same path and location as the old server.
- 3 On the old master server, create a hot catalog backup.
For complete details on how to create a hot catalog backup, see the *NetBackup Troubleshooting Guide*.
- 4 Shut down the old master server and remove it from your backup environment.

- 5 Install the new master server in your backup environment.
- 6 Restore the catalog backup.
- 7 Run some test backups and restores to verify successful operation.

After you verify successful operation, you can upgrade to NetBackup 7.x.

How to replace unsupported NetBackup media servers

The following steps describe only the primary tasks to replace an unsupported media server.

For complete detailed instructions, refer to the following document on the Symantec support Web site:

<http://entsupport.symantec.com/docs/338425.htm>

OpenStorage users should also refer to the following document for details about specific considerations in regard to upgrades to NetBackup 7.x:

<http://entsupport.symantec.com/docs/338426.htm>

To replace an unsupported media server

- 1 Deactivate the old media server through the NetBackup Administration Console, or by running the following command:

```
nbemmcmd -updatehost -machinename <Media Server> -machinestateop  
set_admin_pause -machinetype media -masterserver <Master Server>
```
- 2 Shut down the old media server.
- 3 Configure a new supported media server with the same name and IP address as the old media server.

Note: To use a new IP address, make sure that you update the DNS.

- 4 Connect all backup storage devices to the new media server.
- 5 Install the same version of NetBackup on the new media server that is used on the old media server. You must install NetBackup to the exact same path and location as the old server.

Also, make sure that you specify the same list of additional servers that were identified on the old server.
- 6 Install the new media server in your backup environment.

- 7 Activate the new media server through the NetBackup Administration Console, or by running the following command:

```
nbsmmcmd -updatehost -machinename <Media Server> -machinestateop  
clr_admin_pause -machinetype media -masterserver <Master Server>
```

- 8 Run the device discovery on the new media server so that all connected backup storage devices are recognized.
- 9 Run some test backups and restores to verify successful operation.

After you verify successful operation, you can upgrade to NetBackup 7.x.

How to install NetBackup

For new NetBackup installations, install the software in the following order:

- | | |
|--------|--|
| Step 1 | Install master server software. |
| Step 2 | Install media server software (NetBackup Enterprise only). |
| Step 3 | Install the NetBackup Remote Administration Console. |
| Step 4 | Install client software. |
| Step 5 | Install any NetBackup add-on products (such as language packages). |

Before you proceed with any installation procedure, be sure to review the installation requirements.

See [“Requirements for Windows NetBackup server installation”](#) on page 20.

NetBackup licenses

This chapter includes the following topics:

- [About NetBackup license key requirements](#)

About NetBackup license key requirements

To install NetBackup master server or media server software, you must enter a NetBackup product license key.

To obtain license keys, you must order a license SKU when you order your NetBackup products.

After you place your order, Symantec sends you an email with a license certificate that includes the following information:

List of NetBackup licenses purchased

This list includes all of the licenses for the products that you ordered.

Keep this list in a secure location. You may be asked for a product license key if you ever need to contact technical support for assistance.

Serial number for access to download NetBackup products

Instead of a DVD media kit, you can use this serial number to download the Electronic Software Distribution (ESD) images for NetBackup product installation.

Go to the following Web site and enter this serial number to download the ESD images to your system:

<https://fileconnect.symantec.com/LangSelection.jsp>

When you install NetBackup, Symantec recommends that you enter all other product license keys on the master server when you are prompted. Although you can add these license keys later, it is easier to enter them when you install the master server software.

For detailed information on how to administer NetBackup license keys, refer to the *NetBackup Administration Guide, Volume I*.

See “[About NetBackup license compatibility](#)” on page 36.

See “[Frequently asked questions about license keys](#)” on page 38.

About NetBackup license compatibility

To use your current NetBackup license keys to upgrade servers, add-on products, and database agents to NetBackup 7.1, the following are required:

- NetBackup versions 6.x or 7.0.x must already be installed.
- You must have a valid maintenance contract for all licensed NetBackup products.

Note: You cannot upgrade to NetBackup 7.1 if your current installed version is NetBackup 5.x. You must first upgrade to NetBackup 6.0 or 6.5, and then you can upgrade to NetBackup 7.1. Any 6.x version can be upgraded directly to 7.1.

Upgrade licenses and software may be obtained from the Symantec Licensing Portal at the following Web site:

<https://licensing.symantec.com/acctmgmt/index.jsp>

For detailed information and procedures on how to administer license keys, refer to the *NetBackup Administrator's Guide, Volume I*.

See “[About license key entry](#)” on page 36.

About license key entry

License keys for all NetBackup SKUs must be entered on the master server. License keys for some SKUs must also be entered on the media server, depending on the capabilities that you require for the media server.

[Table 2-1](#) describes the license keys that must be entered on each server.

Table 2-1 Required license keys for NetBackup media servers

Media server type	Required licenses (based on media server capabilities)
Enterprise media servers	<ul style="list-style-type: none"> ■ NetBackup Enterprise Server 7.1 UNX ■ NetBackup Enterprise Server 7.1 WIN/LNX/SOLX64 ■ NetBackup Standard Infrastructure 7.1 XPLAT1 Front End TBYTE ■ NetBackup Enterprise Infrastructure 7.1 XPLAT1 Front End TBYTE ■ NetBackup Platform Base ■ NetBackup Option Library Based Tape Drive 7.1 XPLAT ■ NetBackup Option Shared Storage Option 7.1 XPLAT ■ NetBackup Option NDMP 7.1 XPLAT ■ NetBackup Media Server Encryption Option for Enterprise Server 6.1 UNX ■ NetBackup Media Server Encryption Option for Enterprise Server 6.1 WIN/LNX/SOLX64
SAN media servers	<ul style="list-style-type: none"> ■ NetBackup Enterprise Client, UNX ■ NetBackup Enterprise Client, WIN/LNX/SOLX64 ■ Media Server Encryption Option for SAN Media Server (Enterprise Client), UNX ■ Media Server Encryption Option for SAN Media Server (Enterprise Client), WIN/LNX/SOLX64

Enter license keys by using one of the following methods:

- **During NetBackup master server and media server installation (recommended)**
 The installation script prompts you to enter the license keys for all NetBackup products that you plan to install.
- **NetBackup Administration Console**
 After NetBackup master server or media server installation, open the console and click **Help > License Keys**.
- **Command-line interface (UNIX only)**
 After NetBackup master server or media server installation, use the following command:

```
/usr/opensv/netbackup/bin/admincmd/get_license_key
```

Note: You can log on to a NetBackup server from almost any server in a system to view, enter, and administer license keys. When you administer license keys remotely, make sure that you view the licenses of the system you intend to change. You do not want to add or change a license key on the wrong server.

See [“Frequently asked questions about license keys”](#) on page 38.

See [“About NetBackup license key requirements”](#) on page 35.

Frequently asked questions about license keys

Symantec customers have asked the following questions about how to manage license keys.

Is the license system for NetBackup the same as the license system in other Symantec products?

NetBackup uses a common license system that other Symantec products also use. Please remember, however, that the common license system provides flexibility in the license features that each product implements. For example, NetBackup does not have a node-locked license system, but some other products do.

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

No. The media kit by itself does not allow any access to NetBackup. You always need a license key (either permanent or evaluation). License keys should always be delivered with the media kit, so you should never find yourself with a media 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). The key contains information on the following:

- Whether the key is for NetBackup Server or NetBackup Enterprise Server
- Whether the key is for a server, a client, an agent, or an option (and which one)
- Whether the key is a permanent key or an evaluation key
- Information about how and where the key was generated

Is the license key serialized? Yes, serialization information is embedded in the key.

Can I see reports on what license keys I have?	<p>Yes. Information about license keys is stored on the master server.</p> <p>To access the information, open the NetBackup Administration Console and select Help > License Keys.</p> <p>On UNIX servers, you can also run the following command:</p> <pre data-bbox="670 418 1233 440">/usr/opensv/netbackup/bin/admincmd/get_license_key</pre> <p>For more information on how to view reports, refer to the <i>NetBackup Administrator's Guide, Volume I</i>.</p>
How do I enable options and agents?	<p>When you install NetBackup, you are prompted to enter the license keys for all options and agents.</p> <p>If you purchase an agent or other add-on product at a later date, you can enter its license key manually. Open the NetBackup Administration Console and select Help > License Keys.</p> <p>On UNIX servers, you can also run the following command:</p> <pre data-bbox="670 788 1233 810">/usr/opensv/netbackup/bin/admincmd/get_license_key</pre> <p>Some options require that you have your original NetBackup DVDs, because additional binaries must be installed. You should always keep your NetBackup DVDs in a safe place.</p>
Should I save license keys after they have been entered?	<p>Yes. Always store copies of your license keys in a secure place.</p>
What should I do if I have lost my license key(s)?	<p>Symantec has a record of all license keys that are issued to customers. Customers who lose their license key(s) can call Order Management to get copies of their license keys.</p> <ul data-bbox="670 1124 1099 1246" style="list-style-type: none">■ For Americas, Japan, PacRim, Australia: 650.318.4265 FAX: 650.335.8428■ For Europe, Middle East and Africa: 00.353.61.365232 FAX: 00.353.61.365223 <p>If you have purchased NetBackup from a Symantec partner, you need to contact that partner for information on your key.</p>

How are large volume orders handled?	<p>Many NetBackup installations are very large, and the license keys are long. License keys that you enter multiple times can be time-consuming. You can request a single license key for each type of NetBackup component you purchase. For example, you can obtain one license key for use with 50 Oracle agents. Site licenses enable unrestricted use for specific NetBackup agents or options.</p> <p>You still need a unique license key for each type of NetBackup component that you purchase. Separate license keys are required for components like NetBackup Server, a Lotus Notes agent, or any NDMP option.</p>
What about license keys for customers with site licenses?	<p>Site licenses are handled much like large volume orders are. The certificate for a site license states that the license key is good for unlimited copies.</p>
Do I need a license key to enable NetBackup Remote Administration Consoles?	<p>No. NetBackup Remote Administration Consoles do not require special license keys. You can install them on any computer with access to the master server.</p>
Can a license key be used multiple times?	<p>Yes. You can use your license keys multiple times. You are, however, legally bound to install and use only the number of NetBackup servers, clients, agents, and options for which you purchase licenses.</p>
How do existing customers get license keys?	<p>All NetBackup customers who have current maintenance contracts with Symantec automatically receive the latest version of NetBackup. You receive the NetBackup media kit and license keys for every component for which you purchased licenses.</p> <p>If your maintenance is through a Symantec partner, you upgrade through the partner. Contact the partner for more details.</p>
What if I do not get the right license keys?	<p>If you believe that you received an incorrect license key, contact Order Management using the number on your license key certificate. Technical support does not issue permanent license keys. You can obtain license keys only through Order Management. Technical support can provide temporary one-month license keys to you while issues regarding permanent license keys are resolved.</p>
What does an evaluation license key enable?	<p>The evaluation license key enables unrestricted use of NetBackup, its agents, and its options for a predetermined period of time.</p>

Am I notified when an evaluation is about to expire? To find out when a license key expires, open the NetBackup Administration Console and select **Help > License Keys**.

On UNIX servers, you can also run the following command:

```
/usr/opensv/netbackup/bin/admincmd/get_license_key
```

What happens when an evaluation license key expires? The NetBackup services or daemons are shut down. When you attempt to use the product you are informed that its evaluation period has expired.

Does NetBackup save the backup configuration and catalog information when evaluation license keys expire? Yes. Customers who add a permanent license key to an evaluation version of NetBackup have immediate access to their catalog information 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 add that license to NetBackup. All the configuration information and catalog data from your evaluation version is retained.

To enter your permanent license key, open the NetBackup Administration Console and select **Help > License Keys**.

On UNIX servers, you can also run the following command:

```
/usr/opensv/netbackup/bin/admincmd/get_license_key
```

See [“About NetBackup license key requirements”](#) on page 35.

See [“About NetBackup license compatibility”](#) on page 36.

See [“About license key entry”](#) on page 36.

Installing or upgrading server software

This chapter includes the following topics:

- [Installing or upgrading servers locally](#)
- [Installing or upgrading servers remotely](#)
- [Requirements for Windows cluster installations and upgrades](#)
- [About automatic file changes from an upgrade](#)
- [Installing or upgrading NetBackup servers silently](#)
- [Upgrading NetBackup Servers to NetBackup Enterprise Servers](#)

Installing or upgrading servers locally

Use the following procedure to install or upgrade to NetBackup 7.1 on a local computer.

To install NetBackup server software locally on Windows

- 1 Log on to the system where you want to install NetBackup. Be sure to log on with administrator privileges.
- 2 This step applies only to upgrades. For new installations, skip to the next step.
 - Deactivate all NetBackup policies and storage lifecycle policies as follows:

Note: For upgrades from NetBackup versions earlier than 6.5, there are no storage lifecycle policies to deactivate.

For NetBackup
Administration Console users

- On the master server, open the NetBackup Administration Console.
- From the tree on the left, select **Policies**.
- In the right pane, select all of the NetBackup policies that appear.
- Right-click on the highlighted policies and select **Deactivate**.

To deactivate storage lifecycle policies, see the following command-line instruction.

For command-line users

Enter the following commands for the appropriate policies:

- For NetBackup policies, enter the following command:

```
install_path\NetBackup\bin\admincmd\  
bpplinfo policy_name -modify -inactive
```

- For storage lifecycle policies, enter the following command:

```
install_path\NetBackup\bin\admincmd\nbstlutil  
inactive -lifecycle policy name
```

- Deactivate disk staging storage units as follows:

For NetBackup
Administration Console users

- On the master server, open the NetBackup Administration Console.
- From the tree on the left, expand **NetBackup Management > Storage Units**.
- In the right pane, double-click on a disk staging storage unit.
- When the **Change Storage Unit** window appears, select **Staging Schedule**.
- When the **Disk Staging Schedule** window appears, click the **Exclude Dates** tab.
- Select the date in the calendar that matches the date of the system upgrade.
- Repeat these tasks for each disk staging storage unit.

For command-line users

- Enter the following command:

```
install_path\netbackup\bin\admincmd\  
bpschedulerep schedulename -excl  
mm/dd/yyyy
```

- Deactivate all media servers as follows:

For NetBackup Administration Console users

- On the master server, open the NetBackup Administration Console.
- From the tree on the left, select **Media and Device Management > Devices > Media Servers**.
- In the right pane, select all media servers that appear.
- Right-click on the highlighted servers and select **Deactivate**.

For command-line users

- Enter the following command:

```
install_path\Volmgr\bin\vmopr cmd  
-deactivate_host -h device_host
```

- If the NetBackup Administration Console is open, you must close it now.

3 Start the NetBackup Installation Wizard with one of the following methods:

- DVD media

Insert the NetBackup for Windows DVD in the drive. If Autorun is disabled, navigate to the DVD drive and run `Browser.exe`.

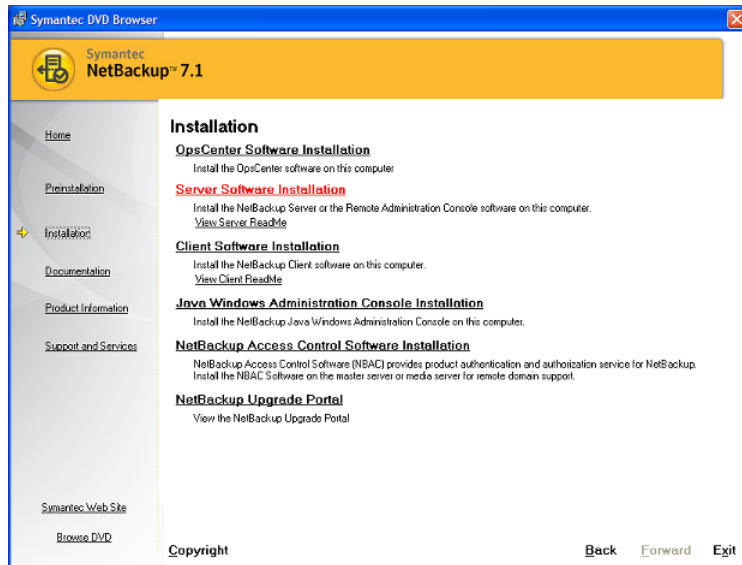
- ESD images (downloaded files)

Navigate to the directory where the images reside and run `Browser.exe`.

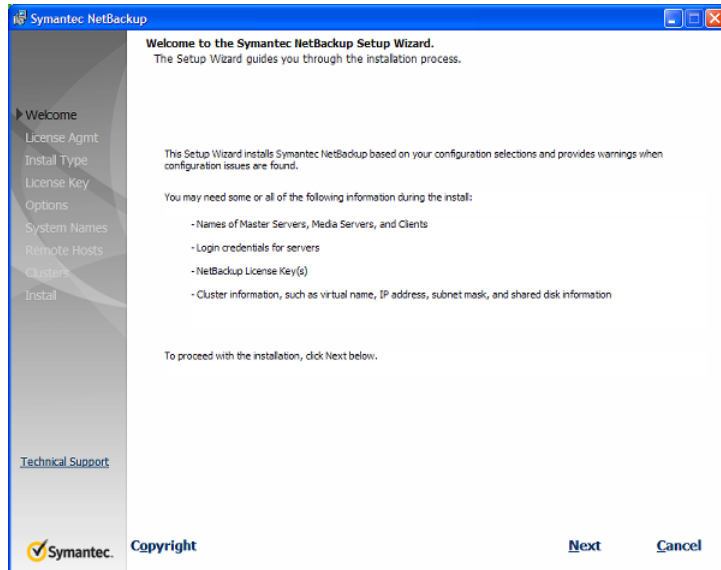
4 On the initial browser screen (**Home**), click **Installation**.



5 On the **Installation** screen, click **Server Software Installation**.



6 On the **Welcome** screen, review the content and click **Next**.



7 On the **License Agreement** screen, accept the license agreement and click **Next**.

8 On the **Symantec NetBackup Installation Type** screen, provide the following information:

- | | |
|-------------------------|--|
| Where to install | For a local installation, select Install to this computer only . |
| Typical | Select this option to install NetBackup default features and settings. |
| Custom | Select this option to choose the NetBackup features to install and the settings that you want. |

Click **Next**.

- 9 On the **NetBackup License Key and Server Type** screen, provide the following information:

License Key	Enter the base product license key that you received with your product. For new installations, the license key that you provide determines which components you can select. For example, you can click the icon next to NetBackup Master Server only if you enter a master server license key. For upgrades, the license for the existing installation type determines which components you can select.
NetBackup Master Server	Click this icon to install master server software.
NetBackup Media Server	Click this icon to install media server software.

- 10 This step applies only to **Custom** installations. For **Typical** installations, skip to the next step.

This step describes how to select and configure the **NetBackup Features**, **NetBackup Port Numbers**, and the **NetBackup Services**.

■ **NetBackup Features**

On this screen, you can select the features to install and where the NetBackup files are installed.

Feature List	Click the icon next to any feature and a drop-down menu appears. Select Install or Do not install .
Destination Folder	By default, NetBackup files are installed to the following location: C:\Program Files\VERITAS To change the folder destination where NetBackup is installed: ■ Click Change . ■ Browse to the preferred location and designate a new or an existing folder. ■ Click Next . Note: For upgrades, you cannot change the destination.

Click **Next**.

■ NetBackup Port Numbers

On this screen, you can change port numbers, if it is necessary in your configuration.

You may need to change a port number if you encounter conflicts when NetBackup and another industry product try to share the same port. Another example is if a port conflict occurs with a firewall, which may cause security issues.

To change a port number, select the port number that you want to replace and type the new number.

Click **Next**.

■ NetBackup Services

On this screen, provide the following startup account and startup type information for NetBackup services:

Use the built-in system account

By default, this box is checked so that NetBackup uses the built-in system account. When this box is checked, the fields below it are disabled.

To specify a different system account:

- Click this box to remove the check mark.
- Enter the account information in the following fields:

Username

Password

Domain

Startup

This option determines whether NetBackup services start automatically if you need to restart the NetBackup host. The default is **Automatic**.

To start NetBackup services manually after a restart, select **Manual**.

Start NetBackup Server Services After Install

Check this box if you want NetBackup services to start automatically after the installation has completed.

You can leave the box unchecked to prevent services from starting after installation.

Terminate NetBackup processes

Check this box to prevent a reboot while you perform a remote installation. When you check this box, processes that use the NetBackup executables and DLLs are stopped.

Warning: For Oracle users, if you select this option, you must take down your database before you continue the installation.

Abort install if a reboot is required

This option determines how the installation proceeds if a restart is required as part of the installation or upgrade.

If you select this option and the installation process determines that a restart is required, the installation (or upgrade) stops. The system is then rolled back to its original state.

If you do not select this option, the installation (or upgrade) proceeds even if the installation process determines that a restart is required.

Click Next.

11 On the **NetBackup System Names** screen, provide the following information:

Master Server Name

For master server installations, enter the name of the local computer.

For media server installations, you must change the name to the master server name to which the media server is configured.

Additional Servers

Enter the names of any additional NetBackup master servers and media servers that you want to communicate with this server. Include the names of computers where you plan to install NetBackup later.

To enter more than one name, separate each name with a comma or press **Enter** after each name.

Media Server Name

This field appears only for NetBackup Enterprise media server installations.

When you install media server software, this field defaults to the local server name.

Enterprise Media Manager Server The EMM server contains all of the information about NetBackup volume configuration and device configuration.

By default, NetBackup installs the EMM server on the master server (this field is populated automatically when you enter the **Master Server Name**). This configuration is preferred and is the most efficient.

Note: Although the EMM server can be located on a media server, Symantec recommends that you keep it on the master server. To locate the EMM server on a media server requires that you perform another procedure. After all NetBackup server software (master and media) is installed, you must move the NetBackup database and the EMM server to the designated media server. For complete details, refer to the *NetBackup Administration Guide for Windows, Volume I*. See the section "Moving the NetBackup Database from one host to another".

Consider the following in regard to the EMM server:

- Symantec does not support EMM server installation on a CIFS-mount.
- If the NetBackup system shares drives by using the Shared Storage Option (SSO), all NetBackup servers must use the same host to store device information.

For more information on EMM servers and EMM databases, refer to the *NetBackup Administrator's Guide for Windows, Volume I*.

OpsCenter Server OpsCenter replaces NetBackup Operations Manager (NOM).

If you have an OpsCenter server or plan to install one, enter the server name or the IP address for that server here.

Click **Next**.

12 On the **Ready to Install the Program** screen, review the **Installation Summary** that shows your selections from the previous steps. Then select one of the following options:

- Click **Install** to start the installation.
- Click **Back** to view the previous screens and make any changes, then return to this screen and click **Install**.

- Click **Cancel** to cancel the installation.

After you click **Install**, the installation process begins and a screen appears that shows you the installation progress. This process may take several minutes.

13 On the **Installation Complete** screen, select from the following options:

Add Keys

Symantec recommends that you enter additional license keys now for any other NetBackup products you plan to install.

- To enter additional license keys, click **Add Keys**.
- When the list of **Current License Keys** appears, click **Add Key** to enter a new license key, then click **Add**.
- After all license keys are entered, close the **Current License Keys** window.

View Log

An installation log file provides detailed installation information and shows whether any errors occurred.

Examine the installation log at the following location:

`%ALLUSERSPROFILE%\Symantec\NetBackup\InstallLogs\`

Search the installation log for the following error indications:

- Strings that include `Return Value 3`.
- Starting with NetBackup 7.0, important log messages are color coded as follows:
Yellow = warning.
Red = error.

Finish

Select one of the following to complete the installation:

- If you are done installing software on all servers, click the box next to **Launch NetBackup Administration Console now** and click **Finish**. The NetBackup Administration Console starts a Configuration Wizard so that you can configure your NetBackup environment.
- If you have more server software to install, click **Finish**. You can move on to the next computer and install the necessary server software.

14 Repeat the steps in this procedure for any other servers.

- 15 For upgrades, after all servers are upgraded, reactivate the following in the order as shown:
 - All media servers
 - All disk staging storage units
 - All NetBackup policies
 - All storage lifecycle policies
- 16 After all server software is installed or upgraded, you are ready to install or upgrade client software.
See the chapter "Installing client software".

Installing or upgrading servers remotely

Use the following procedure to install or upgrade to NetBackup 7.1 on multiple computers within your network.

To install or upgrade NetBackup servers remotely

- 1 Log on to a system with network access to all of the hosts where you want to install NetBackup. Be sure to log on with administrator privileges.
- 2 This step applies only to upgrades. For new or initial installations, skip to the next step.
 - Deactivate all NetBackup policies and storage lifecycle policies as follows:

Note: For upgrades from NetBackup versions earlier than 6.5, there are no storage lifecycle policies to deactivate.

For NetBackup Administration Console users

- On the master server, open the NetBackup Administration Console.
- From the tree on the left, select **Policies**.
- In the right pane, select all of the NetBackup policies that appear.
- Right-click on the highlighted policies and select **Deactivate**.

To deactivate storage lifecycle policies, see the following command-line instruction.

For command-line users Enter the following commands for the appropriate policies:

- For NetBackup policies, enter the following command:

```
install_path\NetBackup\bin\admincmd\  
bpplinfo policy_name -modify -inactive
```

- For storage lifecycle policies, enter the following command:

```
install_path\NetBackup\bin\admincmd\nbstlutil  
inactive -lifecycle policy name
```

- Deactivate disk staging storage units as follows:

For NetBackup Administration Console users

- On the master server, open the NetBackup Administration Console.
- From the tree on the left, expand **NetBackup Management > Storage Units**.
- In the right pane, double-click on a disk staging storage unit.
- When the **Change Storage Unit** window appears, select **Staging Schedule**.
- When the **Disk Staging Schedule** window appears, click the **Exclude Dates** tab.
- Select the date in the calendar that matches the date of the system upgrade.
- Repeat these tasks for each disk staging storage unit.

For command-line users ■ Enter the following command:

```
install_path\netbackup\bin\admincmd\  
bpschedulerep schedulename -excl  
mm/dd/yyyy
```

- Deactivate all media servers as follows:

For NetBackup Administration Console users

- On the master server, open the NetBackup Administration Console.
- From the tree on the left, select **Media and Device Management > Devices > Media Servers**.
- In the right pane, select all media servers that appear.
- Right-click on the highlighted servers and select **Deactivate**.

For command-line users

- Enter the following command:

```
install_path\Volmgr\bin\vmopr cmd
-deactivate_host -h device_host
```

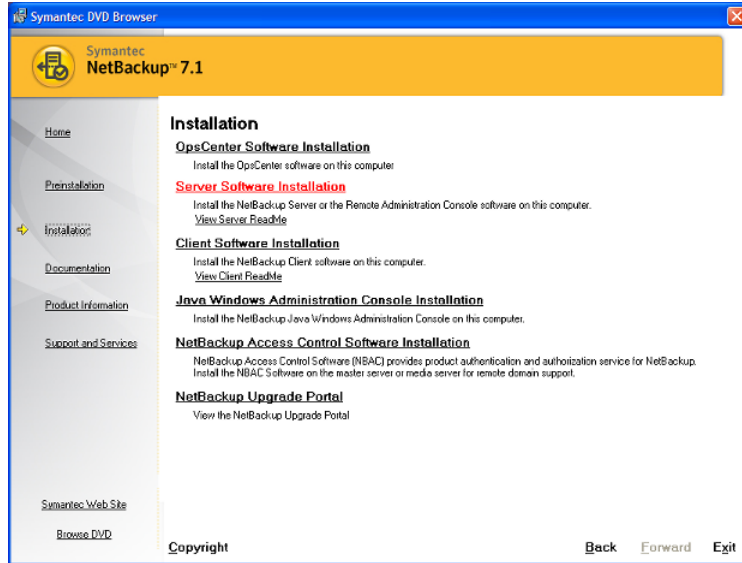
3 Start the NetBackup Installation Wizard with one of the following methods:

- **DVD media**
 Insert the NetBackup for Windows DVD in the drive. If Autorun is disabled, navigate to the DVD drive and run `Browser.exe`.
- **ESD images (downloaded files)**
 Navigate to the directory where the images reside and run `Browser.exe`.

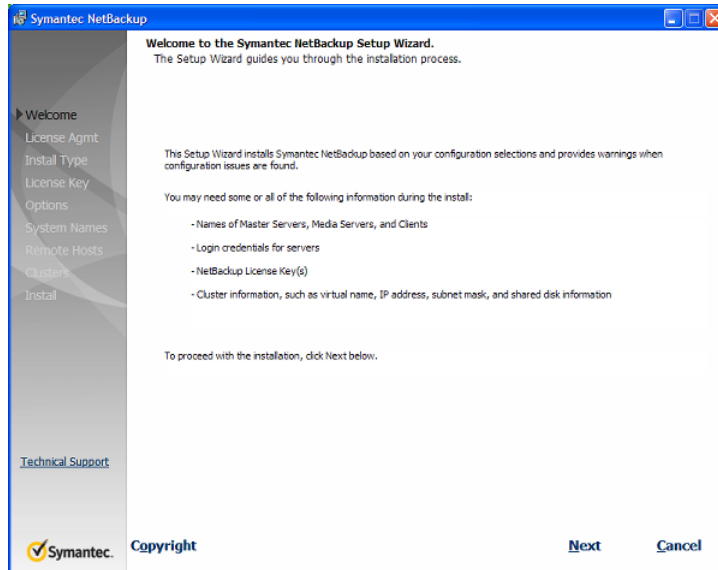
4 On the initial browser screen (Home), click **Installation.**



5 On the **Installation** screen, click **Server Software Installation**.



6 On the **Welcome** screen, review the content and click **Next**.



- 7 On the **License Agreement** screen, accept the license agreement and click **Next**.
- 8 On the **Symantec NetBackup Installation Type** screen, provide the following information:

Where to install	For a remote installation, click Install to multiple computers on your network .
Typical	Select this option to install NetBackup default features and settings.
Custom	Select this option to choose the NetBackup features to install and the settings that you want.

Click **Next**.

- 9 On the **NetBackup License Key and Server Type** screen, provide the following information:

License Key

Enter the base product license key that you received with your product.

For new installations, the license key that you provide determines which components you can select. For example, you can click the icon next to **NetBackup Master Server** only if you enter a master server license key.

For upgrades, the license that was used for the existing installation type determines which components you can select.

Note: The license key that you enter here gets pushed to the other nodes. Your license key may enable add-on products. If you push NetBackup to nodes that have an add-on product already installed, your key works for the add-on product(s).

During this installation process, the following occurs to verify that you have proper credentials to perform remote installations:

- When you select a clustered system for installation, NetBackup determines if you have proper administrator credentials on all nodes in the cluster. If you do not have the proper credentials, the system is not added to the list.
- If you have the proper credentials, NetBackup performs a second check to determine if a license key is needed. If a key is needed and one was not entered, the system cannot be added to the list. You must enter a valid license key to install on that node. If you enter an invalid license key, this screen remains visible until a valid key is entered.

NetBackup Master Server Click this icon to install master server software.

NetBackup Media server Click this icon to install media server software.

10 This step applies only to **Custom** installations. For **Typical** installations, skip to the next step.

This step describes how to select and configure the **NetBackup Port Numbers** and the **NetBackup Services**.

■ NetBackup Port Numbers

On this screen, you can change port numbers, if it is necessary in your configuration.

You may need to change a port number if you encounter conflicts when NetBackup and another industry product try to share the same port. Another example is if a port conflict occurs with a firewall, which may cause security issues.

To change a port number, select the port number that you want to replace and type the new number.

Click **Next**.

■ NetBackup Services

On this screen, provide the following startup account and startup type information for NetBackup services:

Use the built-in system account

By default, this box is checked so that NetBackup uses the built-in system account. When this box is checked, the fields below it are disabled.

To specify a different system account:

- Click this box to remove the check mark.
- Enter the account information in the following fields:

User name

Password

Domain

Startup

This option determines whether NetBackup services start automatically if you need to restart the NetBackup host. The default is **Automatic**.

To start NetBackup services manually after a restart, select **Manual**.

Start NetBackup Server Services After Install

Check this box if you want NetBackup services to start automatically after the installation has completed.

You can leave the box unchecked to prevent services from starting after installation.

Terminate NetBackup processes

Check this box to prevent a reboot while you perform a remote installation. When you check this box, processes that use the NetBackup executables and DLLs are stopped.

Warning: For Oracle users, if you select this option, you must take down your database before you continue the installation.

Abort install if a reboot is required

This option determines how the installation proceeds if a restart is required as part of the installation or upgrade.

If you select this option and the installation process determines that a restart is required, the installation (or upgrade) stops. The system is then rolled back to its original state.

If you do not select this option, the installation (or upgrade) proceeds even if the installation process determines that a restart is required.

Click **Next**.

11 On the **NetBackup System Names** screen, enter the following:

Additional Servers

Enter the names of any additional NetBackup servers that you want to communicate with all of the servers that you want to install. Include the names of computers where you plan to install NetBackup later.

To enter more than one name, separate each name with a comma or press **Enter** after each name.

Enterprise Media Manager Server

The EMM server name is populated automatically. You may need to change it based on the type of server that you want to install.

Specify the EMM server as described in the following server installation types:

■ For master server installations:

To assign all master servers to use the same EMM server, select **Each system uses the EMM specified above**.

To allow each master server to use its own EMM server, leave the option **Each system uses its own EMM server** selected (default).

■ For media server installations:

Specify the EMM server to be used by these media servers.

OpsCenter Server

OpsCenter replaces NetBackup Operations Manager (NOM).

If you have an OpsCenter server or plan to install one, enter the server name or the IP address for that server here.

Click **Next**.

- 12 On the **Symantec NetBackup Remote Hosts and Features** screen, specify the hosts where you want NetBackup and any selected features installed.

■ **Windows Destination Systems**

Right-click **Windows Destination Computers** and select from the drop-down menu, or use the following methods:

Browse

Click here to search the network for the hosts where you want to install NetBackup.

- On the **Available Systems** dialog box, select the computer to add and click **Next**.
- On the **Remote Computer Login Credentials** dialog box, enter the **User Name** and the **Password** of the account to be used to perform the installation on the remote computers.
- If you plan to install to multiple remote computers, click the box next to **Remember User Name and Password**. Selecting this option prevents the need to enter this information for each remote computer.
- Click **OK**.
- On the **Remote Destination Folder** dialog box, verify or change the **Destination Folder** where NetBackup is installed.

The default location is `C:\Program Files\Veritas`.

If you plan to install to multiple remote computers and you want to use the same location, click the box next to **Use this folder for subsequent systems**. Selecting this option prevents the need to enter the location for each remote computer.

Import

Click here to import a text file that contains a list of host names. When you create the text file, the host names must be defined in the following format:

`Domain\ComputerName`

Add

Click here to add a host manually.

- On the **Manual Remote Computer Selection** dialog box appears, enter the **Domain** and the **Computer Name**, then click **OK**.
- On the **Remote Computer Login Credentials** dialog box, enter the **User Name** and the **Password** of the account to be used to perform the installation on the remote computers.
If you plan to add and install to multiple remote computers, click the box next to **Remember User Name and Password**. Selecting this option prevents the need to enter this information for each remote computer.
- Click **OK**.
- On the **Remote Destination Folder** dialog box, verify or change the **Destination Folder** where NetBackup is installed.
The default location is C:\Program Files\Veritas\
If you plan to install to multiple remote computers and you want to use the same location, click the box next to **Use this folder for subsequent systems**. Selecting this option prevents the need to enter the location for each remote computer.
- Click **OK**.

Remove

To remove a host from the **Destination Systems** list, select the host and click here.

Change

Click here to change the destination for NetBackup file installation on the selected remote host.

■ Features

Click a feature icon and select either **Install** or **Do not install** from the drop-down menu .

■ Click Next.

- 13** On the **Ready to Install the Program** screen, review the **Installation Summary** that shows your selections from the previous steps. Then select one of the following options:

- Click **Install** to initiate the installation.
- Click **Back** to view the previous screens and make any changes, then return to this screen and click **Install**.

- Click **Cancel** to cancel the installation.

After you click **Install**, the installation process begins and a dialog box appears that shows you the installation progress for each computer. Right-click on a system in the dialog box to see the installation status.

Up to five installations occur simultaneously. When an installation is completed, another one begins so that a maximum of five installations are in progress.

14 When all remote installations have completed, click **Finish**

15 Examine the installation log on the following location:

```
%ALLUSERSPROFILE%\Symantec\NetBackup\InstallLogs\
```

An installation log file provides detailed installation information and shows whether any errors occurred.

Note: When you perform a remote installation to multiple computers, this option only lets you view the log for the local computer. Each computer that you selected for installation contains its own installation log file. To view the log file of a remote computer, open a Windows Explorer window and enter \\<COMPUTERNAME>.

Search the installation log for the following error indications:

- Strings that include `Return Value 3`.
 - Starting with NetBackup 7.0, important log messages are color coded as follows:
 - Yellow = warning.
 - Red = error.
- 16** For upgrades, after all servers are upgraded, reactivate the following in the order as shown:
- All media servers
 - All disk staging storage units
 - All NetBackup policies
 - All storage lifecycle policies
- 17** After all server software is installed or upgraded, you are ready to install or upgrade client software.

See the chapter "Installing client software".

Requirements for Windows cluster installations and upgrades

In addition to the normal server requirements, NetBackup cluster installations require special considerations.

The following describes the guidelines for NetBackup cluster installations and upgrades on Windows systems:

Server operating system	The source and the destination systems must run Windows 2003, 2008, or 2008 R2 Server.
Privileges	To perform clustered installations, you must have administrator privileges on all of the remote nodes in the cluster. Symantec recommends that you keep a record of all nodes in the cluster and what software exists on each node.
NetBackup virtual name and IP address	Have the virtual name and IP address for NetBackup available. You must provide this information during installation.
Operating system on nodes	All clustered nodes must use the same operating system version, service pack level, and NetBackup version. You cannot run mixed server versions in a clustered environment.
Cluster support changes for media servers	New NetBackup 7.1 media servers cannot be clustered. However, you can upgrade existing 6.x clustered media servers to 7.1 and still keep them clustered.
MSCS clusters	<ul style="list-style-type: none">■ The shared disk that the NetBackup Group uses must already be configured in the cluster and online on the active node.■ Install NetBackup from the node with the shared disk (that is, the active node).■ Computer or host names cannot be longer than 15 characters.

VCS clusters

- For SFW-HA 4.1 and SFW-HA 4.2:
Make sure that you install the patch from the following Web site before you install versions 7.x or upgrade from versions 6.x:
<http://entsupport.symantec.com/docs/278307>
- All NetBackup disk resources must be configured in Veritas Enterprise Administrator (VEA) before you install NetBackup.

Cluster node device configuration and upgrades

When you upgrade clusters, the `ltid` and the robotic daemons retrieve the device configuration for a particular cluster node from the EMM database. The cluster node name (provided by `gethostname`) stores or retrieves the device configuration in the EMM database. The cluster node name is used when any updates are made to the device configuration, including any drive status that is made by `ltid`. The cluster node name is only used to indicate where a device is connected. The NetBackup virtual name is employed for other uses, such as the robot control host.

Installing or upgrading servers in clustered environments

Use the following procedure to install or upgrade clustered environments to NetBackup 7.1.

To install or upgrade NetBackup servers in clustered environments

- 1 Log on to the active node (the node with the shared disk). Be sure to log on with administrator privileges.
- 2 For upgrades only:
 - Deactivate all NetBackup policies and storage lifecycle policies as follows:

Note: For upgrades from NetBackup versions earlier than 6.5, there are no storage lifecycle policies to deactivate.

For NetBackup Administration Console users

- On the master server, open the NetBackup Administration Console.
- From the tree on the left, select **Policies**.
- In the right pane, select all of the NetBackup policies that appear.
- Right-click on the highlighted policies and select **Deactivate**.

To deactivate storage lifecycle policies, see the following command-line instruction.

For command-line users

Enter the following commands for the appropriate policies:

- For NetBackup policies, enter the following command:

```
install_path\NetBackup\bin\admincmd\  
bpplinfo policy_name -modify -inactive
```

- For storage lifecycle policies, enter the following command:

```
install_path\NetBackup\bin\admincmd\nbstlutil  
inactive -lifecycle policy name
```

- Deactivate disk staging storage units as follows:

For NetBackup Administration Console users

- On the master server, open the NetBackup Administration Console.
- From the tree on the left, expand **NetBackup Management > Storage Units**.
- In the right pane, double-click on a disk staging storage unit.
- In the **Change Storage Unit** window, select **Staging Schedule**.
- In the **Disk Staging Schedule** window, click on the **Exclude Dates** tab.
- Select the date in the calendar that matches the date of the system upgrade.
- Repeat these tasks for each disk staging storage unit.

For command-line users

- Enter the following command:

```
install_path\netbackup\bin\admincmd\  
bpschedulerep schedulename -excl  
mm/dd/yyyy
```

■ Deactivate all media servers as follows:

For NetBackup Administration Console users

- On the master server, open the NetBackup Administration Console.
- From the tree on the left, select **Media and Device Management > Devices > Media Servers**.
- In the right pane, select all media servers that appear.
- Right-click on the highlighted servers and select **Deactivate**.

For command-line users

- Enter the following command:

```
install_path\Volmgr\bin\vmopr cmd
-deactivate_host -h device_host
```

■ Take the following NetBackup resources offline:

MSCS clusters

Take all of the NetBackup group resources offline except for the disk. Refer to the Microsoft Cluster Administration documentation to determine how to take the NetBackup group resources offline through the cluster administrator interface.

VCS clusters

Take the NetBackup resource offline.

3 Start the NetBackup Installation Wizard with one of the following methods:

■ DVD media

Insert the NetBackup for Windows DVD in the drive. If Autorun is disabled, navigate to the DVD drive and run `Browser.exe`.

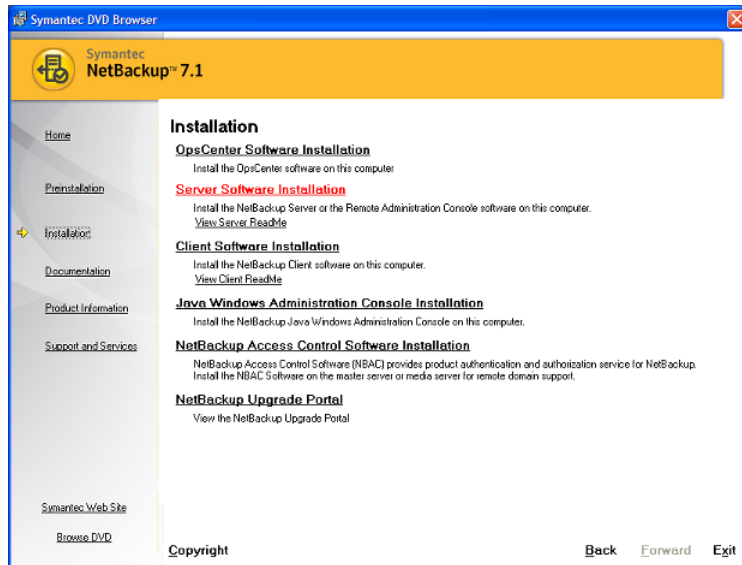
■ ESD images (downloaded files)

Navigate to the directory where the images reside and run `Browser.exe`.

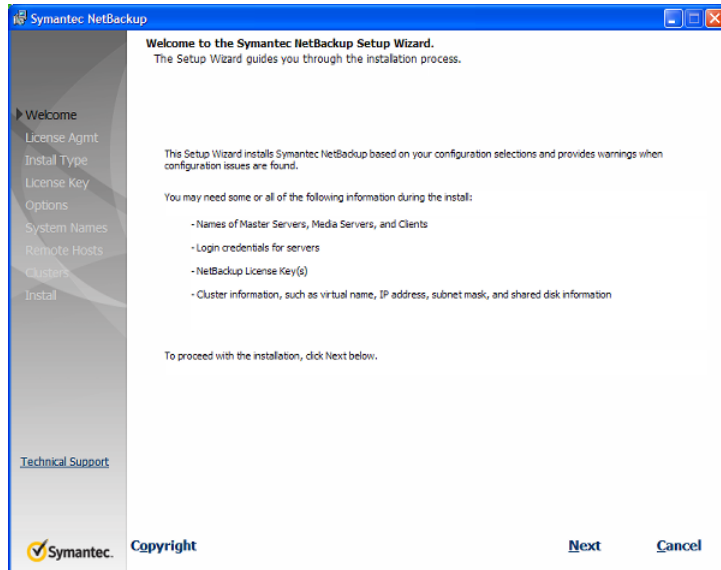
4 On the initial browser screen (**Home**), click **Installation**.



5 On the **Installation** screen, click **Server Software Installation**.



- 6 On the **Welcome** screen, review the content and click **Next**.



- 7 On the **License Agreement** screen, accept the license agreement and click **Next**.
- 8 On the **Symantec NetBackup Installation Type** screen, provide the following information:

Where to install For a cluster installation, select **Install a clustered Master Server**.

This option is available only if the installation process determines that your system is configured for a Windows MSCS or VCS clustered environment.

Typical Select this option to install NetBackup default features and settings.

Custom Select this option to choose the NetBackup features to install and the settings that you want.

Click **Next**.

- 9 On the **NetBackup License Key and Server Type** screen, provide the following information:

License Key

Enter the base product license key that you received with your product.

For new installations, the license key that you provide determines which components you can select. For example, you can click the icon next to **NetBackup Master Server** only if you enter a master server license key.

For upgrades, the license for the existing installation type determines which components you can select.

Note: The license key that you enter here gets pushed to the other nodes. Your license key may enable add-on products. If you push NetBackup to nodes that have an add-on product already installed, your key works for the add-on product(s).

During this installation process, the following occurs to verify that you have proper credentials to perform remote installations:

- When you select a clustered system for installation, NetBackup determines if you have proper administrator credentials on all nodes in the cluster. If you do not have the proper credentials, the system is not added to the list.
- If you have the proper credentials, NetBackup performs a second check to determine if a license key is needed. If a key is needed and one was not entered, the system cannot be added to the list. You must enter a valid license key to install on that node. If you enter an invalid license key, this screen remains visible until a valid key is entered.

Master Server

Click this icon to install master server software.

- 10** This step applies only to **Custom** installations or upgrades. For **Typical** installations or upgrades, skip to the next step.

This step describes how to select and configure the **NetBackup Port Numbers** and the **NetBackup Services**.

■ NetBackup Port Numbers

On this screen, you can change port numbers, if it is necessary in your configuration.

You may need to change a port number if you encounter conflicts when NetBackup and another industry product try to share the same port.

Another example is if a port conflict occurs with a firewall, which may cause security issues.

To change a port number, select the port number that you want to replace and type the new number.

Click **Next**.

■ **NetBackup Services**

On this screen, provide the following startup account and startup type information for NetBackup services:

Use the built-in system account

By default, this box is checked so that NetBackup uses the built-in system account. When this box is checked, the fields below it are disabled.

To specify a different system account:

- Click this box to remove the check mark.
- Enter the account information in the following fields:

Username
Password
Domain

Startup

This option determines whether NetBackup services start automatically if you need to restart the NetBackup host. The default is **Automatic**.

To start NetBackup services manually after a restart, select **Manual**.

Start NetBackup Server Services After Install

Check this box if you want NetBackup services to start automatically after the installation has completed.

You can leave the box unchecked to prevent services from starting after installation.

Terminate NetBackup processes

Check this box to prevent a reboot while you perform a remote installation. When you check this box, processes that use the NetBackup executables and DLLs are stopped.

Warning: For Oracle users, if you select this option, you must take down your database before you continue the installation.

Abort install if a reboot is required

This option determines how the installation proceeds if a restart is required as part of the installation or upgrade.

If you select this option and the installation process determines that a restart is required, the installation (or upgrade) stops. The system is then rolled back to its original state.

If you do not select this option, the installation (or upgrade) proceeds even if the installation process determines that a restart is required.

Click **Next**.

11 On the **NetBackup System Names** screen, provide the following information:

Master Server Name

For cluster installations, enter the cluster virtual server name.

Additional Servers

Enter the names of any additional NetBackup master servers and media servers that you want to communicate with the master server that you identified previously. Include the actual host names of the cluster nodes where you plan to install NetBackup.

To enter more than one name, separate each name with a comma or press **Enter** after each name.

Media Server Name

This field appears only for media server upgrades and is populated automatically with the virtual host name of the cluster.

Enterprise Media Manager Server The EMM server contains all of the information about NetBackup volume configuration and device configuration.

By default, NetBackup installs the EMM server on the master server (this field is populated automatically when you enter the **Master Server Name**). This configuration is preferred and is the most efficient.

Note: Although the EMM server can be located on a media server, Symantec recommends that you keep it on the master server. To locate the EMM server on a media server requires that you perform another procedure. After all NetBackup server software (master and media) is installed, you must move the NetBackup database and the EMM server to the designated media server. For complete details, refer to the *NetBackup Administration Guide for Windows, Volume I*. See the section "Moving the NetBackup Database from one host to another".

Consider the following in regard to the EMM server:

- Symantec does not support EMM server installation on a CIFS-mount.
- If the NetBackup system shares drives by using the Shared Storage Option (SSO), all NetBackup servers must use the same host to store device information.

For more information on EMM servers and EMM databases, refer to the *NetBackup Administration Guide for Windows, Volume I*.

OpsCenter Server OpsCenter replaces NetBackup Operations Manager (NOM).

If you have an OpsCenter server or plan to install one, enter the server name or the IP address for that server here.

For clustered systems, do not use the virtual name. Instead, use the actual host name of the cluster node.

Click **Next**.

12 On the **NetBackup Remote Hosts and Features** screen, specify the remote system information for installation on those computers.

- On the initial screen, right-click **Browse**.

- On the **Available Systems** dialog box, select the computer that you want to add. Control-click to select multiple computers. Click **Next**.

- On the **Remote Computer Login Credentials** dialog box, enter the user name, password, and domain that NetBackup is to use on the remote system(s).

If you intend to add more remote computers, click the check box next to **Remember user name and password**.

When you provide credentials, you select cluster nodes and add them to the **Windows Destination Systems** list. These are the nodes on which you remotely install NetBackup. Make sure that you select your local host when you select systems to install.

Each time you choose a system, NetBackup performs system and license checks. For example, it verifies the system for a server installation that matches the type that you selected, as follows:

- NetBackup not installed Considers the remote to be verified.
- NetBackup already installed Compares the installation type on that system to the installation type that you request.
- Invalid combination Notifies you of the problem and disallows the choice. One example of an invalid combination is to try to install a Remote Administration Console on a remote system that is already a master server.
- Remote system not a supported platform or level Notifies you of the problem and disallows the choice.

The installation procedure also verifies that you have proper administrator credentials on the remote system. If you do not have administrator credentials, the **Enter Network Password** screen appears, and prompts you to enter the administrator's user name and password.

Click **OK** and continue selecting destination systems.

This process repeats for each node that you select. You can elect to retain the user name and password. In that case, you are prompted only when the user name or password is not valid.

Note the following regarding the push-install process in a clustered environment:

- You can install NetBackup on any number of nodes. However, the clustering service sets the limit for the number of nodes in a cluster, not NetBackup.
- NetBackup add-on products, such as language packages, cannot be installed with the push method. Add-on products must be installed on each individual node in the cluster group. For instructions on how to install these products, refer to the NetBackup documentation that supports each product.
- NetBackup pushes to the other nodes only the license key you enter at the beginning of the installation. Your license key may enable add-on products. If you push NetBackup to nodes that have an add-on product already installed, your key works for that product.

Click **Next**.

- 13** On the **Cluster Settings** screen, you provide the virtual and the physical network information.

For new installations and upgrades, the following configuration settings that you enter apply to all nodes:

Create a new Cluster Group	For new cluster server installations, select this option.
Upgrade existing Cluster Group	To upgrade current or existing cluster servers, select this option.
Add node(s) to existing Cluster Group	To add a host to an existing cluster group, select this option. When you select this option, all other fields are filled automatically except for Public Network . You must select the appropriate network manually.

IPv4 Clusters	<p>The default cluster setting is IPv4.</p> <p>Enter the following addresses:</p> <ul style="list-style-type: none">■ Virtual IPv4 Address The IP address to which the virtual server name should resolve. For new cluster installations, you must enter the address manually. For upgrades or if you add a new node to a current cluster, the address field is populated automatically.■ IPv4 Subnet Mask Identifies a subnetwork so that IP addresses can be shared on a local area network. This number correlates directly to the virtual IP address of the cluster.
IPv6 Clusters	<p>To enable IPv6 clusters, select this option.</p> <p>Enter the following IP address:</p> <ul style="list-style-type: none">■ Virtual IPv6 Address The IPv6 address must be entered in CIDR format.
NB Cluster Group Name	<p>The name that is used to identify a NetBackup service group or resource group. The resources in any resource group are related and interdependent.</p>
Virtual Host Name	<p>The name by which NetBackup is known in the cluster.</p> <p>When you install the client software, this host name must be added to the Additional Servers field on the NetBackup System Names screen.</p> <p>The server uses this name when it communicates with the client nodes.</p>
Path to Shared Data	<p>A directory on one of the shared disks in the cluster where NetBackup stores configuration information. If the letter for the disk (or drive) does not appear in the pull-down list, enter only the letter.</p>
Public Network	<p>For NetBackup clustered environments, select a public network that is assigned to the node of the cluster.</p> <p>Warning: You must not select a private network that is assigned to this cluster.</p>

- Cluster Configuration** After you set all of the parameters, click this icon to configure the cluster for use with NetBackup. The **Next** icon is not available until after successful cluster configuration.
- The text box provides the following information about the configuration:
- Identifies any existing clusters or NetBackup cluster groups.
 - Indicates a successful configuration.
 - Identifies any problems or errors that occurred during the configuration (configuration failure).
- Note:** After a successful cluster configuration for new installations or upgrades, if you click **Cancel**, a pop-up message appears. The message asks if you are sure that you want to proceed with the cancellation. To cancel the installation and remove the new cluster group, click **Yes**. To continue with the installation and retain the new cluster group, click **No** and then click **Next**.
- If the cluster configuration fails, see the *NetBackup Clustered Master Server Administrator's Guide* for information about how to resolve the problem.

When the successful cluster configuration message appears, click **Next**.

- 14** On the **Ready to Install the Program** screen, review the **Installation Summary** that shows your selections from the previous steps. Then select one of the following options:
- Click **Install** to initiate the installation.
 - Click **Back** to view the previous screens and make any changes, then return to this screen and click **Install**.
 - Click **Cancel** to cancel the installation.

After you click **Install**, the installation process begins and a dialog box appears that shows you the installation progress for each computer. Right-click on a system in the dialog box to see the installation status.

Up to five installations occur simultaneously. When an installation is completed, another one begins so that a maximum of five installations are in progress.

- 15** Examine the installation log on the following location:

`%ALLUSERSPROFILE%\Symantec\NetBackup\InstallLogs\`

An installation log file provides detailed installation information and shows whether any errors occurred.

Note: When you perform a cluster installation to multiple computers, this option only lets you view the log for the local computer. Each computer that you selected for installation contains its own installation log file. To view the log file of a remote computer, open a Windows Explorer window and enter \\<COMPUTERNAME>.

Search the installation log for the following error indications:

- Strings that include `Return Value 3`.
- Starting with NetBackup 7.0, important log messages are color coded as follows:
 - Yellow = warning.
 - Red = error.

16 For upgrades, after all servers are upgraded, reactivate the following in the order as shown:

- All media servers
- All disk staging storage units
- All NetBackup policies
- All storage lifecycle policies

17 After all server software is installed or upgraded, you are ready to install or upgrade client software.

See the chapter "Installing client software".

See ["Post-installation tasks for NetBackup cluster environments"](#) on page 78.

See ["Verifying Windows cluster installations or upgrades"](#) on page 79.

Post-installation tasks for NetBackup cluster environments

After NetBackup server software is installed in a cluster, note the possible actions you may need to take:

Restart	You may need to restart each of the cluster nodes after the installation is complete.
---------	---

MSCS and VCS clusters	<p>Under normal circumstances, cluster configuration is one of the final steps when you install NetBackup in a cluster. If this step is not done or does not complete successfully, you can use the <code>bpclusterutil</code> command from the active node to perform this step.</p> <p>For information on how to run <code>bpclusterutil</code>, see the <i>NetBackup High Availability Administrator's Guide</i>.</p>
MSCS clusters	<p>Any NetBackup resources that you took offline come back online automatically.</p>

See [“Verifying Windows cluster installations or upgrades”](#) on page 79.

Verifying Windows cluster installations or upgrades

The Cluster Administration console lets you verify the installation or upgrade and view your current system structure.

To verify a successful MSCS cluster installation or upgrade through the Cluster Administration console

- 1 During a cluster installation, you can open the Cluster Administration console to see your current structure.
- 2 After you have completed the installation and the configuration process, the console shows the new cluster group configuration.

To verify a successful VCS cluster installation or upgrade through the Cluster Manager console

- 1 During a cluster installation, you can open the Cluster Administration console to see your current structure.
- 2 After you have completed the installation and the configuration process, the console shows the new cluster group configuration.

See [“About NetBackup configuration”](#) on page 133.

About automatic file changes from an upgrade

When you upgrade from an earlier NetBackup version, certain customizable scripts are overwritten. Before NetBackup overwrites these scripts, it saves copies of them so that any modifications are preserved.

The following examples describe how this process works:

Example 1: goodies directory Your current NetBackup version is 6.5 and you modified files in the goodies directory. For example:

```
C:\Program
Files\Veritas\NetBackup\bin\goodies
```

After an upgrade to NetBackup 7.x, the following directory is created automatically and contains the modified files from the earlier version:

```
C:\Program
Files\Veritas\NetBackup\goodies.6.5
```

You can use the scripts in this directory to replace the new default versions that were installed with the upgrade.

Example 2: bin directory Your current NetBackup version is 6.5 and you modified files in the bin directory. For example:

```
C:\Program Files\Veritas\NetBackup\bin
```

After an upgrade to NetBackup 7.x, the following directory is created automatically and contains the modified files from the earlier version:

```
C:\Program Files\Veritas\NetBackup\bin.6.5
```

You can use the scripts in this directory to replace the new default versions that were installed with the upgrade.

Table 3-1 describes the files and scripts that are overwritten when you upgrade from an earlier Windows version of NetBackup:

Table 3-1 Overwritten files and scripts

Path	Affected files and scripts
C:\Program Files\Veritas\NetBackup\bin	All files
C:\Program Files\Veritas\NetBackup\bin\goodies	All files Note: Starting with NetBackup 7.0, nbmail.cmd has been moved from c:\Program Files\Veritas\NetBackup\bin to c:\Program Files\Veritas\NetBackup\bin\goodies. To allow future upgrades to use this script, copy nbmail to c:\Program Files\Veritas\NetBackup\bin and modify it there.

Installing or upgrading NetBackup servers silently

A silent installation or upgrade avoids the need for interactive input in the same manner as performing a remote installation. Silent NetBackup installations and upgrades are not supported if you want to run the NetBackup services as a user rather than the local system.

To perform a silent installation or upgrade, you must first modify the appropriate NetBackup script. After script modification, you can run the script to initiate the silent installation or upgrade.

For upgrades, the script shuts down all NetBackup services so that the upgrade can be initiated. However, you must deactivate any storage lifecycle policies manually before you run the script.

If the script detects that other system processes still maintain a handle on any NetBackup files, a dialog box appears and identifies those processes. You are prompted to either terminate those processes manually and retry the upgrade or to cancel the upgrade.

Note: For Windows 2008 Server Core systems, you can only install or upgrade NetBackup with this procedure.

To install NetBackup server software silently

- 1 Log on as administrator to the system where you want to install NetBackup.
- 2 Deactivate all storage lifecycle policies by entering the following command:

Note: For upgrades from NetBackup versions earlier than 6.5, there are no storage lifecycle policies to deactivate.

```
install_path\NetBackup\bin\admincmd\nbstlutil inactive -lifecycle  
policy name
```

- 3 Insert the NetBackup installation DVD or navigate to the location where the ESD images (downloaded files) reside.
- 4 Open Windows Explorer and copy the contents of the X86, X64, or IA64 directory to a temporary directory on your hard drive. Choose the directory that is associated with the platform type that you want to install.
- 5 Since the source files are read-only, you must change the permissions for the copied files to allow the installation or the update.
- 6 In the temporary directory where the copied files reside, select the appropriate script to modify:

- To install or upgrade a master server, edit `silentmaster.cmd`
- To install or upgrade a media server, edit `silentmedia.cmd`
- To install or upgrade a NetBackup Remote Administration Console, edit `silentadmin.cmd`

7 Edit the following lines as needed for your installation:

- `SET ADDITIONALSERVERS=media1,media2,media3`

Enter the names of any additional NetBackup master servers and media servers that you want to communicate with this host. Include the names of servers where you plan to install NetBackup later.

If no other servers are to communicate with this host, remove this line from the script.

- `SET ABORT_REBOOT_INSTALL=0`

This line lets you determine how you want the installation to continue if a restart is required. Select from the following settings:

0 (default)

By default, a silent installation does not abort if it is determined that a restart is required. If you leave this setting at 0, select one of the following tasks:

- After the installation is complete, check the installation log to see if a restart is required. If the string **in use** appears anywhere in the log, you must restart the system manually.
- Force an automatic restart after the installation is complete.

To force an automatic restart, before you run the installation script, remove the following option from the silent installation command script (`silent*.cmd`):

```
REBOOT="ReallySuppress"
```

Warning: A forced restart occurs with no warning to the user. It does not cancel the installation or roll back the system to its original state.

1

Select this setting to abort the installation if it is determined that a restart is required.

If a restart is needed, this setting cancels the installation and the system is rolled back to its original state.

- 8 Save the script and run it.
- 9 Examine the installation log at the following location:
`%ALLUSERSPROFILE%\Symantec\NetBackup\InstallLogs\`
Search the installation log for the following error indications:
 - Strings that include `Return Value 3`.
 - Starting with NetBackup 7.0, important log messages are color coded as follows:
Yellow = warning.
Red = error.

Restarting a system after a silent installation or upgrade

Symantec recommends that when you upgrade or install updates on a client or a server, make sure that no backup processes are in progress. In rare cases, a restart may be required.

To determine if a restart is necessary

- 1 After you have run the silent installation script, open the installation log at the following location:
`%ALLUSERSPROFILE%\Symantec\NetBackup\InstallLogs\`
- 2 Search for the string `in use`. If files are listed as `in use`, a restart is required.

Upgrading NetBackup Servers to NetBackup Enterprise Servers

To upgrade from NetBackup Server to NetBackup Enterprise Server, you must enter the appropriate license key(s) in your current NetBackup Administration Console.

To upgrade a NetBackup server to a NetBackup Enterprise server

- 1 Locate your NetBackup Enterprise Server license key.
- 2 Open the NetBackup Administration Console and choose **Help > License Keys**. The NetBackup License Key dialog box appears.
- 3 Click the **New** icon.

- 4 Enter your license key in the **New license key** field and click **Add**.

The new license key appears in the field in the lower part of the dialog box.

For upgrades on Windows from a NetBackup server evaluation license key to a permanent NetBackup Enterprise Server-based product license key, restart the NetBackup services. When services are restarted, the new license information is displayed when you select **Help > About NetBackup Administration Console**.

If you add, delete, or change any license keys, you must restart the NetBackup Administration Console.

- 5 Reboot the system if you are prompted.

Installing alternative administrative interfaces

This chapter includes the following topics:

- [About the NetBackup Remote Administration Console for Windows](#)
- [About the NetBackup-Java Administration Console](#)

About the NetBackup Remote Administration Console for Windows

If your NetBackup server has no graphics display capabilities, you must install an alternative administrative interface. It may also be desirable for various other configurations, such as mixed environments that use the Windows and the UNIX platforms.

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

The NetBackup Remote Administration Console is an interface-only version of NetBackup for Windows that you can use to administer NetBackup servers from another computer. The computer that runs the NetBackup Remote Administration Console does not require NetBackup software.

The following is a brief description of the NetBackup Remote Administration Console operation:

- The console lets you perform all NetBackup operations exactly like the NetBackup Administration Console on a local Windows NetBackup server. You

can create backup policies, manage volumes, view status, monitor tape drives, and perform other operations.

- The console displays the name of the server it administers, rather than a local host name.
- The console can only administer other NetBackup servers. It cannot act as a master or a media server.

See [“Installing the NetBackup Remote Administration Console”](#) on page 86.

See [“About the NetBackup-Java Administration Console”](#) on page 90.

See [“Installing version 7.1 of the NetBackup Java Administration Console on Windows”](#) on page 90.

Installing the NetBackup Remote Administration Console

The NetBackup Remote Administration Console is supported on Windows Server 2003/XP, Windows Server 2008/Vista, and Windows Server 2008 R2/Windows 7.

Installation is a two-step process as follows:

- Install the NetBackup Remote Administration Console.
- Add the NetBackup Remote Administration Console host name to the server list of the hosts that you want to administer.

You must also add the host names of the servers that you want to administer to the server list on the host where you install the remote console.

The following table shows an example of the required server list entries for each host. RAC1 refers to the Remote Administration Console.

Host name	Required server list entries
Master1	RAC1
Media1	RAC1
Media2	RAC1
RAC1	Master1, Media1, Media2

To install the NetBackup Remote Administration Console

- 1 On the computer where you want to install the NetBackup Remote Administration Console, start the NetBackup Installation Wizard with one of the following methods:
 - DVD media

Insert the NetBackup for Windows DVD in the drive. If Autorun is disabled, navigate to the DVD drive and run `Browser.exe`.

- ESD images (downloaded files)
 Navigate to the directory where the images reside and run `Browser.exe`.

- 2 On the initial screen, click **Installation**.
- 3 On the **Installation** screen, click **Server Software Installation**.
- 4 On the **Welcome** screen, review the content and click **Next**.
- 5 On the **License Agreement** screen, accept the terms of the license agreement and click **Next**.
- 6 On the **Installation Type** screen, select **Install to this computer only**, click **Typical**, and then click **Next**.
- 7 On the **NetBackup License Key and Server Type** screen, select **NetBackup Remote Administration Console**. You do not need a license key to install the Remote Administration Console.
- 8 On the **NetBackup System Names** screen, provide the following information:

Client Name	Enter the name of the local computer where you want to install the remote console. (The name should appear by default.)
Master Server	Enter the name of the NetBackup master server. (If NetBackup master server software is installed on this computer, the name should appear by default.)
Additional Servers	Enter the names of any additional NetBackup servers that you want to allow access to this server. To enter more than one name, separate each name with a comma and press Enter after you enter each name.

- 9 On the **Ready to Install the Program** screen, review the summary of your selections. Then, click **Install**.
- 10 After the installation completes, do the following:
 - Click **View Log** to review the installation details.
 - Click **Finish**.
 If you clicked the box next to **Launch NetBackup Administration Console now**, the Remote Administration Console appears. If you did not click the box, start the console by selecting **Start > Programs > Symantec NetBackup > NetBackup Administration Console**.

This action starts the console on the local host, not on any remote host.

11 Add the required host names to the server lists of all hosts.

See “[Configuring server lists for the NetBackup Remote Administration Console](#)” on page 88.

Configuring server lists for the NetBackup Remote Administration Console

The following methods are available to configure server lists for the NetBackup Remote Administration Console:

- Use the NetBackup Administration Console
- On UNIX servers, edit the `bp.conf` file.
- On Windows servers, edit the system registry.

To configure server lists for the NetBackup Remote Administration Console by using the NetBackup Administration Console

- 1** On the **NetBackup Administration Console** in the left pane, click **Host Properties > Master Servers**.
- 2** In the **Master Servers** window in the right pane, right-click the name of the host server and select **Properties**.
- 3** In the **Master Server Properties** window, click the **Servers** icon from the tree in the left pane.
- 4** In the **Servers** window, click **Add**.
- 5** Enter the name of the host that is to run the NetBackup Remote Administration Console.
- 6** Click **Add**. The name of the host appears in the **Additional Servers** list.
- 7** Click **Close** and **OK**.

To configure server lists for the NetBackup Remote Administration Console by editing the `bp.conf` file on UNIX servers

- 1 Log in to the master server as root.
- 2 Edit the following file:

```
/usr/opensv/netbackup/bp.conf.
```

- 3 At the end of the `SERVER =` lines, add the following line:

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

The `Remote-Administration-Console-machine-name` is the name of the computer where you installed the NetBackup Remote Administration Console.

To configure server lists for the NetBackup Remote Administration Console by editing the system registry on Windows servers

- 1 Log on to the master server as the administrator.
- 2 Click **Start > Run....**
- 3 Enter `regedit.exe` and click **OK**.
- 4 In the **Registry Editor** window, locate the following file:

```
HKEY_LOCAL_MACHINE\SOFTWARE\VERITAS\NetBackup\CurrentVersion\Config
```

- 5 In the right pane, double-click on **Server**.
- 6 In the **Edit Multi-String** window, enter the name of the Remote Administration Console host and click **OK**.
- 7 Close the **Registry Editor** window.

Adding remote servers to administer from an existing NetBackup Remote Administration Console

If you have an existing NetBackup Remote Administration Console installed and you want to add a remote master server to administer, use this procedure.

To add a remote server to administer from an existing NetBackup Remote Administration Console

- 1 Log on to the host where the NetBackup Remote Administration Console is installed, and open the console.
- 2 In the left pane of the NetBackup Remote Administration Console, select **Host Properties > Master Server**.
- 3 In the **Master Servers** window in the right pane, right-click the name of the host server and select **Properties (Read/Write)**.

- 4 In the **Master Server Properties** window, click the **Servers** tab.
- 5 In the **Global Operations** field, in the **Add to all lists** field, enter the host name. Make sure that you enter the name of the host that is to run the NetBackup Remote Administration Console.
- 6 Click the + icon (the name of the host appears in the **Additional Servers** list), then click **OK**.

About the NetBackup-Java Administration Console

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

On Java-capable UNIX hosts (servers and clients), this console is installed automatically when you install NetBackup.

On Windows hosts, this console must be installed separately.

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

See [“Installing version 7.1 of the NetBackup Java Administration Console on Windows”](#) on page 90.

See [“Installing or removing multiple versions of the NetBackup-Java Administration Console on Windows”](#) on page 91.

Installing version 7.1 of the NetBackup Java Administration Console on Windows

Use the following guidelines when you install version 7.1 of the console:

- Install the console from the NetBackup DVD for Windows or from the ESD (downloaded) files.
- Any computer that runs the console should have at least 512 MB of physical memory.

To install version 7.1 of the NetBackup Java Administration Console on Windows

- 1 On the computer where you want to install the console, do one of the following:
 - Insert the appropriate DVD that contains the NetBackup software.

On Windows systems with Autorun enabled, the installation starts automatically.

On Windows systems with Autorun disabled, navigate to the DVD directory and run `Browser.exe`.

- Navigate to the location where the downloaded files reside and run `Browser.exe`.
- 2 On the initial screen, select **Installation**.
- 3 On the **Installation** screen, select **Java Windows Administration Console Installation**.
- 4 On the **Welcome** screen, review the content and click **Next**.
- 5 On the **License Agreement** screen, accept the agreement and click **Next**.
- 6 On the **NetBackup Installation Type** screen, select **Install to this computer only** and **Typical**.
- 7 On the **Ready to Install the Program** screen, review the Installation Summary and click **Install**.
- 8 On the **Installation Complete** screen, click **Finish**.
- 9 To open the console, click **Start > Programs > Symantec NetBackup > NetBackup Java version 7.1**.

Installing or removing multiple versions of the NetBackup-Java Administration Console on Windows

A NetBackup environment may contain multiple servers with multiple NetBackup versions. This section describes how to install and remove multiple versions of the NetBackup-Java Administration Console.

Installing multiple versions of the NetBackup-Java Administration Console on Windows

To install multiple versions of the NetBackup interface in a mixed version environment, note the following restrictions and guidelines:

Updates	Only the most recent version of the NetBackup-Java Administration Console can be updated (or patched).
---------	--

`auth.conf` file

The NetBackup-Java Capabilities Authorization configuration file (`auth.conf`), must always be located in `install_path\java`. For example, `C:\Program Files\Veritas\java`. The file must exist there regardless of how many versions of the console are installed, or in which directories they are installed.

The file is only used for administering NetBackup on this Windows host, and default settings exist if the file is not present. For more information about these defaults, see the section "Authorizing NetBackup-Java users" in the *NetBackup Administrator's Guide for Windows, Volume I*.

Console version location

You must install each Java console version to a different folder.

To install earlier versions of the NetBackup-Java Administration Console

- 1 Insert the appropriate version NetBackup Windows installation CD or DVD with the NetBackup-Java Administration Console that you want to install.
- 2 Select one of the following consoles, based on the NetBackup version:
 - For NetBackup 6.0 versions, select **NetBackup Installation** and click **Install Java Administration Console**. Select whether you want to install the 32-bit or the 64-bit console.
 - For NetBackup 6.5 versions, select **NetBackup Installation** and click **Install Java Windows Administration Console**. Select whether you want to install the 32-bit or the 64-bit console.
 - For NetBackup 7.0 versions, select **Installation** and click **Java Windows Administration Console Installation**.
- 3 If a different version of the Java console has already been installed, specify a new folder location to prevent overwriting the earlier installation.

For example, specify `C:\Program Files\Veritas\nbjava65` for version 6.5 Java consoles.
- 4 To complete the installation, click **Finish**.

Removing earlier versions of the NetBackup-Java Administration Console on Windows

In some cases, you can remove earlier versions of the NetBackup-Java Administration Console by using the **Add/Remove Programs** feature. You can use this method if the version that you want to remove appears in the list of programs.

If the version that you want to remove does not appear in the list of programs, you must manually remove it. Use the following procedure.

To manually remove earlier versions of the NetBackup-Java Administration Console

- 1 Remove the folder where the earlier version NetBackup-Java Administration Console is installed.
- 2 Remove the appropriate menu item from the **Start > Programs > NetBackup** menu.
- 3 Remove any relevant desktop shortcuts.

Methods for administering multiple versions of NetBackup servers

[Table 4-1](#) describes the available methods to administer NetBackup 7.1 with an earlier version console. The order of the listed methods does not imply any preference.

Table 4-1 Methods for administering multiple versions of NetBackup servers

Method	Notes
Earlier versions of the NetBackup-Java Administration Console on UNIX platforms	The earlier versions available in a release are all of those supported in a mixed version environment with the current release. For example, all versions back to and including the last major release. In the NetBackup 7.1 release, the 7.0, the 6.5.x, and the 6.0.x console versions are available.
Earlier versions of the NetBackup-Java Administration Console on Windows platforms	See “Installing or removing multiple versions of the NetBackup-Java Administration Console on Windows” on page 91.
Remote display-back from UNIX servers	From a Windows computer, you can access the Java Windows Administration Console on a UNIX NetBackup server by using connectivity software applications.
At the console on the NetBackup server	Use the appropriate NetBackup-Java Administration Console on the NetBackup server with the earlier version of the console.

Removing NetBackup server software

This chapter includes the following topics:

- [About NetBackup server software removal on Windows systems](#)
- [Removing NetBackup server software on Windows systems](#)
- [Removing NetBackup server software in a clustered environment](#)
- [Removing NetBackup LiveUpdate from Windows systems](#)

About NetBackup server software removal on Windows systems

When you remove NetBackup server software, the process deletes the `VERITAS/NetBackup` directories from the server. In a typical installation, NetBackup add-on products and catalogs are located in this same directory path and are also deleted.

You can remove NetBackup server software in the following ways:

- Remove server software, configuration, and catalog information.
- Remove server software and save NetBackup configuration and catalog information.

If you intend to reinstall NetBackup, use this procedure to save the configuration, catalog, and log file information before you remove NetBackup. See [“Removing NetBackup server software on Windows systems”](#) on page 96.

Removing NetBackup server software on Windows systems

Use the following procedure to remove NetBackup server software and NetBackup configuration and catalog information.

To remove NetBackup server software and NetBackup configuration and catalog information

- 1 If the NetBackup Administration Console is open, close it.
If a console session is open when you try to remove NetBackup, a failure may occur that forces you to restart this procedure.
- 2 Select **Start > Settings > Control Panel**.
- 3 On the **Control Panel** window, click **Add or Remove Programs**.
- 4 On the **Currently Installed Programs** list, click **Symantec NetBackup**.
- 5 Click **Remove**.
For Windows 2008/Vista and later systems, after you click **Yes** to continue, another dialog box appears to inform you that PBX is still running.
Symantec recommends that you click **Do not close applications. (A reboot will be required.)** to continue with NetBackup removal. PBX is stopped and restarted automatically as needed for removal.
- 6 Remove the NetBackup deduplication user directory as follows:
In the **Documents and Settings** directory, delete the **purediskbuser** directory.

Use the following procedure to remove NetBackup server software and save NetBackup configuration and catalog information.

To remove NetBackup server software and save NetBackup configuration and catalog information

- 1 If the NetBackup Administration Console is open, close it.
If a console session is open when you try to remove NetBackup, a failure may occur that forces you to restart this procedure.
- 2 Select **Start > Settings > Control Panel**.
- 3 On the **Control Panel** window, click **Add/Remove Programs**.
- 4 In the **Currently Installed Programs** list, click **Symantec NetBackup**.
- 5 Click **Change**. This action lets you modify, repair, or remove NetBackup.
- 6 On the **Program Maintenance** dialog box, select **Remove**.

- 7 Clear the check mark next to **Remove all NetBackup Configuration, Catalog, and Log files** to disable this function. (The box is checked by default.)
- 8 Click **Next**.
- 9 If you enabled NetBackup Access Control, NetBackup placed several files on clients and servers. These files can be divided into the following categories:

NetBackup application temporary files	These files are removed with NetBackup.
---------------------------------------	---

Individual user (cache) files User cache files exist in their home directories, as follows:

```
user\Local Settings\Application  
Data\VERITAS\NetBackup
```

Files are generated in the `\NetBackup` directory by a Single Sign-On operation of the NetBackup Administration Console on the host where the console runs. The NetBackup Administration Console cleans these files when an exit function is performed, so the directory does not always contain temporary files. However, if a system crash were to occur, any files in the directory 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 `\NetBackup` directory. These files typically have a name that is consistent with a DNS entry for a network interface, such as `machine.company.com`. Example directory entries are as follows:

```
user\Local Settings\Application  
Data\VERITAS\NetBackup\pc.comp.com
```

```
user\Local Settings\Application  
Data\VERITAS\NetBackup\dhcp
```

These files are created with the command `bpbntat -LoginMachine`. If you plan to reinstall NetBackup on the same computer at a later date, do one of the following:

- Preserve the certificates in the `\NetBackup` directory.
- If you do not preserve the certificates, you must provide the computer identity password as originally set on the Root+AB broker. As an alternative, you can reset the password on the Root+AB broker when you reinstall. See the *NetBackup Security and Encryption Guide*.

10 Remove the NetBackup deduplication user directory as follows:

In the **Documents and Settings** directory, delete the **purediskbuser** directory.

Removing NetBackup server software in a clustered environment

The following steps refer you to other documentation when you remove NetBackup software from clustered machines.

To remove NetBackup from a clustered environment

- 1 Follow the instructions in your cluster documentation for removing a group.
- 2 Remove NetBackup from each node in the cluster.

See [“To remove NetBackup server software and NetBackup configuration and catalog information”](#) on page 96.

No method exists to remove NetBackup from multiple nodes at the same time.

Removing NetBackup LiveUpdate from Windows systems

NetBackup LiveUpdate and Symantec LiveUpdate share the same LiveUpdate agent. When you remove LiveUpdate, you can no longer distribute NetBackup updates automatically or other Symantec product updates.

Before you remove LiveUpdate, make sure that no other installed Symantec products use LiveUpdate.

Use the following procedure to remove LiveUpdate files on Windows systems.

To remove NetBackup LiveUpdate on Windows systems

- 1 Select **Start > Control Panel**.
- 2 Select **Add or Remove Programs**.
- 3 Click on **LiveUpdate** and select **Remove**.

Installing NetBackup client software

This chapter includes the following topics:

- [About NetBackup client installation](#)
- [About NetBackup client installation on Windows](#)
- [About NetBackup client installation on UNIX](#)

About NetBackup client installation

By definition, NetBackup servers are also clients. When you install NetBackup server software, client software is also installed.

When you install client software, you perform a true client installation since no server software is installed.

Client software can be installed locally at each individual computer or remotely. The operating system determines which clients can be installed remotely.

Windows

A Windows host can only push client software to Windows clients.

NetBackup does not need to be installed on the host that is used to perform the remote client installation.

UNIX

A NetBackup UNIX server can only push client software to UNIX clients.

NetBackup software and client type software must be installed on the server that is used to perform the remote client installation.

See [“About NetBackup client installation on Windows”](#) on page 102.

See [“About Windows client system requirements”](#) on page 103.

See [“About Windows client installation methods”](#) on page 103.

See [“About NetBackup client installation on UNIX”](#) on page 115.

See [“About UNIX client installation methods”](#) on page 117.

About NetBackup client installation on Windows

The NetBackup client installation wizard for Microsoft Windows lets you select the appropriate setup and installation options from a series of wizard screens. After you select options, a window appears that lets you verify your selections before the installation begins.

While the installation is in progress, a dialog box provides details of the installation and the setup progress. When the installation is completed, a final window shows the results.

Note the following when you install NetBackup client software on Windows systems:

Client installation restrictions

You cannot install NetBackup client software on the computers that currently have NetBackup server software. In these cases, you must first remove the NetBackup server software.

See [“Removing NetBackup server software on Windows systems”](#) on page 96.

User permissions

- By default on Windows 2003, 2008, and 2008 R2 Server systems, only administrators have write permission to the `Program Files` directory.

- NetBackup writes log files and progress files to the following location:

`Program Files\VERITAS\NetBackup\Logs`

To perform backups and restores with the Backup, Archive, and Restore interface, users must have write permission to the `Logs` directory. Users without write permission to this directory receive an error message, and the backup or restore is canceled. The administrator account has write permission by default, but you must ensure that other users also have write permission.

See [“About NetBackup client installation”](#) on page 101.

See [“About Windows client system requirements”](#) on page 103.

See [“About Windows client installation methods”](#) on page 103.

About Windows client system requirements

The following describes the hardware and the software requirements for successful installation of NetBackup client software.

Local installation	<p>To install NetBackup client software locally, the system must meet the following configuration requirements:</p> <ul style="list-style-type: none"> ■ Microsoft Windows 2003/XP, Windows 2008/Vista, or Windows 2008 R2/Windows 7 ■ Any TCP/IP transport that is Windows Sockets compliant. (Use of the TCP/IP transport that comes with the server or the operating system is recommended.) ■ A network adapter that your TCP/IP transport supports
Remote installation	<p>To install NetBackup client software remotely, the system must meet the following configuration requirements:</p> <ul style="list-style-type: none"> ■ All the requirements for local installations must be met. ■ The source system must run Windows 2003, 2008, or 2008 R2 Server. ■ Administrator privileges are required for the user that performs remote installations.
NetBackup version compatibility	<p>The NetBackup client version that you install must be the same or earlier than the installed version of NetBackup server software. Later client versions cannot be used with earlier server versions.</p> <p>See “About NetBackup mixed version support” on page 16.</p>

See [“About Windows client installation methods”](#) on page 103.

About Windows client installation methods

You can install NetBackup clients on Windows systems with the following methods:

Local installation	<p>The installation wizard installs the client software only on the computer where you run the installation.</p> <p>See “Installing NetBackup Windows clients locally” on page 104.</p>
--------------------	---

Remote installation	<p>The installation wizard scans the network for available clients where you can install the client software.</p> <p>The source computer must run Windows 2003, 2008, or 2008 R2 Server.</p> <p>Also, a remote installation requires system administrator privileges.</p> <p>Note: You cannot install clients remotely from NetBackup Windows servers to UNIX computers.</p> <p>See “Installing NetBackup Windows clients remotely” on page 107.</p>
Silent installation	<p>A silent installation is a process that does not require interactive input. However, you must edit the <code>silentclient.cmd</code> file before you run it.</p> <p>See “Installing NetBackup Windows clients silently” on page 114.</p>

See [“About NetBackup client installation”](#) on page 101.

Installing NetBackup Windows clients locally

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

Note: After client installation, you may need to restart the system for the changes to take effect.

To install NetBackup client software locally on Windows systems

- 1 Log on as administrator on the host where you want to install the client software.
- 2 Start the NetBackup Installation Wizard with one of the following methods:
 - DVD media
Insert the NetBackup for Windows DVD in the drive. If Autorun is disabled, navigate to the DVD drive and run `Browser.exe`.
 - ESD images (downloaded files)
Navigate to the directory where the images reside and run `Browser.exe`.
- 3 On the initial screen, select **Installation**.

- 4 On the **Installation** screen, select **Client Software Installation**.
- 5 On the **Welcome** screen, review the content and click **Next**.
- 6 On the **License Agreement** screen, accept the terms of the agreement and click **Next**.
- 7 On the **Symantec NetBackup Client Installation Type** screen, provide the following information:

Where to install	For a local installation, select Install to this computer only .
Typical	Select this option to install NetBackup default features and settings.
Custom	Select this option to choose the NetBackup features to install and the settings that you want.

Click **Next**.

- 8 This step applies only to **Custom** installations. For **Typical** installations, skip to step [10](#).

On the **Symantec NetBackup Client Features** screen, you can select the features to install and where the NetBackup files are installed.

Feature List Click the icon next to any feature and a drop-down menu appears.
 Select **Install** or **Do not install**.

Destination Folder By default, NetBackup files are installed to the following location:
`C:\Program Files\VERITAS`
 To change the folder destination where NetBackup is installed:

- Click **Change**.
- Browse to the preferred location and designate a new or an existing folder.
- Click **Next**.

Note: For upgrades, you cannot change the destination.

- 9 This step applies only to **Custom** installations. For **Typical** installations, skip to the next step.

On the **NetBackup Options** screen, select from the following options:

At System Startup

Enable or disable the following options:

- **Start NetBackup Client Service Automatically**
By default, this option is enabled so that NetBackup services are available immediately after system startup.
- **Start NetBackup Client Job Tracker Automatically**
By default, this option is disabled. To start this option manually after installation, click **Start > All Programs > Symantec NetBackup > NetBackup Client Job Tracker**.

Start NetBackup Client Service After Install

By default, this option is enabled so that NetBackup services are available immediately after installation.

To prevent NetBackup services from starting automatically after installation, click this box to clear the check mark.

Ports

On this screen, you can change port numbers, if it is necessary in your configuration.

You may need to change a port number if you encounter conflicts when NetBackup and another industry product try to share the same port. Another example is if a port conflict occurs with a firewall, which may cause security issues.

To change a port number, select the port number that you want to replace and type the new number.

Click **Next**.

- 10 On the **NetBackup Services** screen, provide the following startup account and startup type information for NetBackup client services:

Use the built-in system account

By default, this box is checked so that NetBackup uses the built-in system account. When this box is checked, the fields below it are disabled.

To specify a different system account:

- Click this box to remove the check mark.
- Enter the account information in the following fields:

Username

Password

Domain

Abort install if a reboot is required This option determines how the installation proceeds if a restart is required as part of the installation or upgrade.

If you select this option and the installation process determines that a restart is required, the installation (or upgrade) stops. The system is then rolled back to its original state.

If you do not select this option, the installation (or upgrade) proceeds even if the installation process determines that a restart is required.

- 11** On the **NetBackup System Names** screen, the following fields are populated automatically. Normally, changes are not required. Except for the **Client Name**, you can make changes as needed for your configuration.

Client Name	Do not change this name.
Master Server Name	If necessary, change this name to the appropriate master server where the client backup images are to be stored.
Additional Servers	Enter all of the master server and media server names that you want this client to access.

- 12** On the **Ready to Install the Program** screen, review the **Installation Summary** that shows your selections from the previous steps. Then select one of the following options:

- Click **Install** to start the installation.
- Click **Back** to view the previous screens and make any changes, then return to this screen and click **Install**.
- Click **Cancel** to cancel the installation.

After you click **Install**, the installation process begins and a screen appears that shows you the installation progress. This process may take several minutes.

- 13** On the **Installation Complete** screen, click **Finish**.

Installing NetBackup Windows clients remotely

Use this procedure to install NetBackup client software to multiple computers on your network, including the local computer. You can stop the installation process at any time by clicking **Cancel**.

When you install Windows clients remotely, note the following:

Requirements	Review the requirements for Windows client installation. See “About Windows client system requirements” on page 103.
Privileges	You must have administrator privileges on the remote clients for the NetBackup installation to complete successfully.
Client name entries	During installation, the client name is written to the registry in lowercase. For backups to work, the policies on the NetBackup server must specify the client names in lowercase.
Reboot after installation	You may need to restart the local or the remote systems for the changes to take effect. A message appears to alert you if a restart is needed.

To install NetBackup client software remotely on Windows systems

- 1 Log on as administrator on the host or the system server.
- 2 Start the NetBackup Installation Wizard with one of the following methods:
 - DVD media
Insert the NetBackup for Windows DVD in the drive. If Autorun is disabled, navigate to the DVD drive and run `Browser.exe`.
 - ESD images (downloaded files)
Navigate to the directory where the images reside and run `Browser.exe`.

On the initial screen (**Home**), select **Installation**.
- 3 On the **Installation** screen, select **Client Software Installation**.
- 4 On the **Welcome** screen, review the content and click **Next**.
- 5 On the **License Agreement** screen, accept the terms of the agreement and click **Next**.

6 On the **Symantec NetBackup Client Installation Type** screen, provide the following information:

Where to install	For remote installation, select Install to multiple computers on your network . The procedure does not install the client on the local host unless you add it to the list of systems that you want to install.
Typical	Select this option to install NetBackup default features and settings.
Custom	Select this option to choose the NetBackup features to install and the settings that you want.

7 This step applies only to **Custom** installations. For **Typical** installations, skip to the next step.

On the **NetBackup Options** screen, select from the following options:

At System Startup	Enable or disable the following options: <ul style="list-style-type: none"> ■ Start NetBackup Client Service Automatically By default, this option is enabled so that NetBackup services are available immediately after system startup. ■ Start NetBackup Client Job Tracker Automatically By default, this option is disabled. To start this option manually after installation, click Start > All Programs > Symantec NetBackup > NetBackup Client Job Tracker.
Start NetBackup Client Service After Install	By default, this option is enabled so that NetBackup services are available immediately after installation. To prevent NetBackup services from starting automatically after installation, click this box to clear the check mark.

Ports

On this screen, you can change port numbers, if it is necessary in your configuration.

You may need to change a port number if you encounter conflicts when NetBackup and another industry product try to share the same port. Another example is if a port conflict occurs with a firewall, which may cause security issues.

To change a port number, select the port number that you want to replace and type the new number.

8 On the **NetBackup Services** screen, provide the following startup account and startup type information for NetBackup client services:

Use the built-in system account

By default, this box is checked so that NetBackup uses the built-in system account. When this box is checked, the fields below it are disabled.

To specify a different system account:

- Click this box to remove the check mark.
- Enter the account information in the following fields:

Username
Password
Domain

Terminate NetBackup processes

Check this box to prevent a reboot while you perform a remote installation. When you check this box, processes that use the NetBackup executables and DLLs are stopped.

Warning: For Oracle users, if you select this option, you must take down your database before you continue the installation.

Abort install if a reboot is required

This option determines how the installation proceeds if a restart is required as part of the installation or upgrade on the remote system.

If you select this option and the installation process determines that a restart is required, the installation (or upgrade) stops. The system is then rolled back to its original state.

If you do not select this option, the installation (or upgrade) proceeds even if the installation process determines that a restart is required.

9 On the **NetBackup System Names** screen, the following fields are populated automatically. Change these fields to meet your specific needs.

- | | |
|---------------------------|--|
| Master Server Name | If necessary, change this name to the appropriate master server where the client backup images are to be stored. |
| Additional Servers | Enter all of the master server and media server names that you want the clients to access. |

10 On the **Symantec NetBackup Remote Hosts and Features** screen, specify the hosts where you want NetBackup and any selected features installed.

■ **Destination Systems**

Right-click the **Windows Destination Computers** icon and select from the drop-down menu , or use the following icons:

- | | |
|---------------|---|
| Browse | <p>Click here to search the network for the hosts where you want to install NetBackup.</p> <ul style="list-style-type: none"> ■ On the Available Systems dialog box, select the computer to add and click Next. ■ On the Remote Computer Login Credentials dialog box, enter the User Name and the Password of the account to be used to perform the installation on the remote computers. ■ If you plan to install to multiple remote computers, click the box next to Remember User Name and Password. Selecting this option prevents the need to enter this information for each remote computer. ■ Click OK. ■ On the Remote Destination Folder dialog box, verify or change the Destination Folder where NetBackup is installed.
 The default location is C:\Program Files\Veritas.
 If you plan to install to multiple remote computers and you want to use the same location, click the box next to Use this folder for subsequent systems. Selecting this option prevents the need to enter the location for each remote computer. |
|---------------|---|

Import

Click here to import a text file that contains a list of host names. When you create the text file, the host names must be defined in the following format:

```
Domain\ComputerName
```

Add

Click here to add a host manually.

- On the **Manual Remote Computer Selection** dialog box appears, enter the **Domain** and the **Computer Name**, then click **OK**.

- On the **Remote Computer Login Credentials** dialog box, enter the **User Name** and the **Password** of the account to be used to perform the installation on the remote computers.

If you plan to add and install to multiple remote computers, click the box next to **Remember User Name and Password**. Selecting this option prevents the need to enter this information for each remote computer.

- Click **OK**.

- On the **Remote Destination Folder** dialog box, verify or change the **Destination Folder** where NetBackup is installed.

The default location is `C:\Program Files\Veritas`.

If you plan to install to multiple remote computers and you want to use the same location, click the box next to **Use this folder for subsequent systems**. Selecting this option prevents the need to enter the location for each remote computer.

- Click **OK**.

Remove

To remove a host from the **Destination Systems** list, select the host and click here.

Change

Click here to change the destination for NetBackup file installation on the selected remote host.

- **Features**

Click a feature icon and select either **Install** or **Do not install** from the drop-down menu .

- Click **Next**.

11 On the **Ready to Install the Program** screen, review the **Installation Summary** that shows your selections from the previous steps. Then select one of the following options:

- Click **Install** to initiate the installation.
- Click **Back** to view the previous screens and make any changes, then return to this screen and click **Install**.
- Click **Cancel** to cancel the installation.

After you click **Install**, the installation process begins and a screen appears that shows you the installation progress for each computer. This process may take several minutes.

Up to five remote installations occur simultaneously. When a remote installation is completed, another one begins so that a maximum of five installations are in progress.

If you click **Cancel** after you click **Install**, the installation does not stop immediately. Installation continues on all remote hosts where the installation has already started. Any specified hosts after that point do not get client software installed.

NetBackup considers any remote installations that were completed when you clicked **Cancel** to be successful.

12 Examine the installation log on the following location:

```
%ALLUSERSPROFILE%\Symantec\NetBackup\InstallLogs\
```

An installation log file provides detailed installation information and shows whether any errors occurred.

Note: When you perform a remote installation to multiple computers, this option only lets you view the log for the local computer. Each computer that you selected for installation contains its own installation log file. To view the log file of a remote computer, open a Windows Explorer window and enter \\<COMPUTERNAME>.

Search the installation log for the following error indications:

- Strings that include `Return Value 3`.
- Starting with NetBackup 7.0, important log messages are color coded as follows:
 - Yellow = warning.
 - Red = error.

Installing NetBackup Windows clients silently

A silent installation process does not require interactive input. It does, however, require that you edit the `silentclient.cmd` file before you run it.

Silent installations of NetBackup clients are not supported if you want to run the NetBackup services as a user instead of a local administrator.

To install NetBackup with a custom services account, refer to the following topics:

See [“Installing NetBackup Windows clients locally”](#) on page 104.

See [“Installing NetBackup Windows clients remotely”](#) on page 107.

Use the following procedure to perform a silent installation of a local NetBackup client.

To perform a silent installation of NetBackup client software on Windows

- 1 Insert the NetBackup installation DVD in the drive or navigate to the location where the ESD images (downloaded files) reside.
- 2 In a **Microsoft Windows Explorer** window, navigate to the DVD drive.
- 3 Copy the contents of the one of the following directories to a temporary folder on your hard drive. For example, `C:\temp`.
 - `PC_ClnT\x86`
 - `PC_ClnT\x64`
 - `PC_ClnT\IA64`
- 4 Since the original source files are read-only, change the permissions for the copied 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 installs the client software as needed.
- 6 Run the `silentclient.cmd` script.
- 7 To verify that the installation was successful, check the installation log file in the following directory:

```
%ALLUSERSPROFILE%\Symantec\NetBackup\InstallLogs
```

How to configure NetBackup clients

You can configure NetBackup clients by performing one of the following actions:

- To add servers or media servers:
- Start the Backup, Archive, and Restore interface.
 - Click **File > Specify NetBackup Machines**.

To display and change the client properties:

- Start the Backup, Archive, and Restore interface.
- Click **File > NetBackup Client Properties**.

To display and change the server properties:

- Open the NetBackup Administration Console.
- Expand **Host Properties** and click **Clients**.
- In the right pane, right-click on the client and choose **Properties**.
In the dialog box that appears, on the **Servers** tab, all NetBackup servers that require access to your Windows client must be listed.

For complete information on client configuration, see the *NetBackup Administrator's Guide, Volume I*.

About NetBackup client installation on UNIX

You can install UNIX clients either locally at the client computer or remotely from your UNIX NetBackup server. To install client software remotely from a UNIX NetBackup server, the client type software must first be installed on the UNIX server.

Note: Macintosh OS X clients are UNIX-based clients. Follow the same UNIX client installation procedures in this section.

Note the following when you install NetBackup client software on UNIX systems:

UNIX package consolidation Starting with NetBackup 7.0, many of the add-on products and database agents are now installed with the NetBackup client package. Separate installation for these products is no longer needed.

The following products are now included in the NetBackup 7.1 client package (if the platform supports the product):

- BMR Boot server
- DB2
- NetBackup Encryption
- Informix
- LiveUpdate agent
- Lotus Notes
- Oracle
- SAP
- Snapshot Client
- Sybase

The binaries for the listed products are laid down with the client package. A valid license is still required to enable the product. If product configuration was required previously (such as `db2_config`), configuration is still required.

The French, Japanese, and Chinese language packages remain as separate add-ons. The process to install and upgrade these products remains the same.

gzip and gunzip commands The `gzip` and the `gunzip` commands must be installed on each system. The directories where the commands are installed must be part of the root user's `PATH` environment variable setting.

NetBackup-Java compatibility To initiate a backup or a restore from a UNIX client, the following graphical interfaces are available:

- Clients that are compatible with NetBackup-Java may 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 can use the `bp` interface. They also support a login from any NetBackup 7.1 UNIX server's NetBackup client console with the `jbpSA` command.

Clients that are not compatible with NetBackup-Java are Macintosh OS X, IBM zSeries Linux, IBM pSeries Linux, and FreeBSD.

About UNIX client installation methods

You can install NetBackup clients on UNIX systems with the following methods:

Local installations

- This method installs the client software on the computer where you run the installation script.
- To install clients to a location other than the default, you must create and link a directory before you install the client software. First create the directory where you want the software to reside, then create `/usr/openv` as a link to that directory.
- On IBM zSeries Linux clients, you must transfer the NetBackup DVD or ESD image contents to a location that is readable by the virtual Linux environment. You can transfer the image with FTP or NFS mounting commands.

See [“Installing UNIX clients locally”](#) on page 118.

- Remote (push) installations
- You can "push" the client software from your UNIX NetBackup server to your UNIX client computers. The UNIX client must be a true client and not a media server or a master server. The preferred installation method is to push the client software.
 - Before you can push to a UNIX client, you must first install the NetBackup client type software on the server. Then, you must create a policy that includes the client name.
Refer to the NetBackup Installation Guide for UNIX and Linux. See the section "Installing client type software on a master server".
 - You cannot install Windows client software remotely from a NetBackup UNIX server. Firewalls can also prevent remote client installation.
 - Clients such as the IBM zSeries Linux may not have a locally mounted DVD device or access to the NetBackup DVD or ESD images. In these cases, you must push the client software from a UNIX master server or a media server.
 - The following remote installation methods are available:
See ["Installing client software with the ftp method"](#) on page 122.
See ["Installing client software with the rsh method"](#) on page 120.
See ["Installing client software with the ssh method"](#) on page 123.
See ["Installing client software with the sftp method"](#) on page 124.

See ["About NetBackup client installation"](#) on page 101.

Installing UNIX clients locally

The following procedure installs the NetBackup client software on a local computer.

To install client software locally on a UNIX client

- 1 Use one of the following methods to start the installation script:

DVD

- Insert the NetBackup UNIX Clients DVD into the drive.
See [“About the NetBackup media kit”](#) on page 17.
- If necessary, mount the DVD.
- Enter the following command:

```
cd_directory/install
```

The *cd_directory* is the path to the directory where you can access the DVD.

ESD images (downloaded files)

- Navigate to the location where the installation images reside.
- Enter the following command:

```
./install
```

2 When the following message appears, press **Enter** to continue:

```
Installing NetBackup Client software.  
Do you wish to continue? (y/n) [y]
```

The client binaries represent the operating system versions where the binaries were compiled. The binaries typically function perfectly on later versions of the operating system. For example, HP PA-RISC 11.11 binaries also are used on the HP PA-RISC 11.23 level of the operating system. The installation procedure attempts to load the appropriate binaries for your system. If the script does not recognize the local operating system, it presents choices.

3 Follow the prompts to complete the installation.

4 After the installation is complete, select **Exit from this script**.

About remote installation methods for UNIX clients

You can push the client software from a UNIX master server to a client host by using the following methods:

- `rsh`
See [“Installing client software with the rsh method”](#) on page 120.
- `ftp`
See [“Installing client software with the ftp method”](#) on page 122.
- `ssh`
See [“Installing client software with the ssh method”](#) on page 123.

■ `sftp`

See “[Installing client software with the sftp method](#)” on page 124.

Note: For installation in clustered environments, enter the virtual name for the NetBackup server and not the actual local host name. You can only push client software from the active node.

Installing client software with the rsh method

Before you perform this procedure, read the following guidelines:

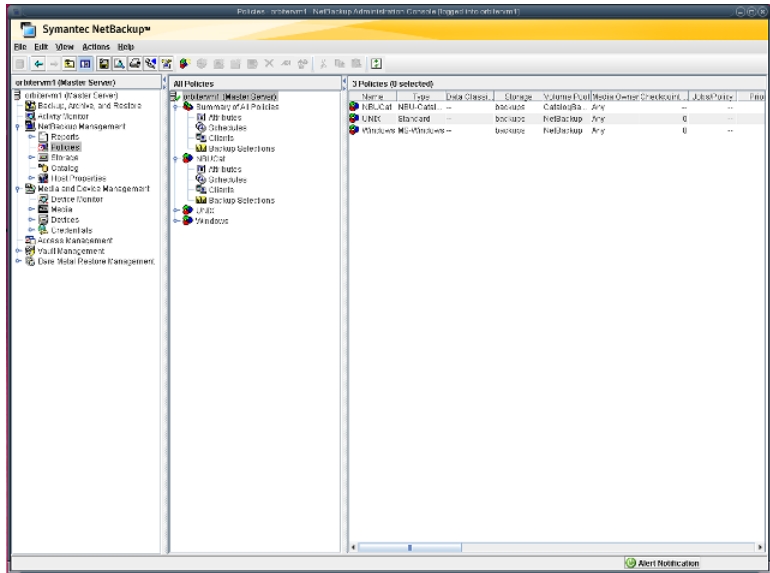
Client <code>.rhosts</code> file	To use this method, the UNIX client must have an entry for the server in its <code>.rhosts</code> file. The <code>.rhosts</code> entries enable software installation, but they are not necessary for correct operation of NetBackup software.
Client software location	If you want to install client software to a location other than the default, you must first create and link to the desired directory. Create the directory where you want the client software to reside, and then create <code>/usr/opensv</code> as a link to that directory.
Backup policies	Make sure that the clients are assigned to a backup policy.
For Macintosh OS X	By default, this operating system version does not enable the Remote Shell daemon (<code>rshd</code>). Run the following command to enable the daemon: <pre>/sbin/service shell start</pre>

To install client software from a UNIX master server to UNIX clients with the `rsh` method

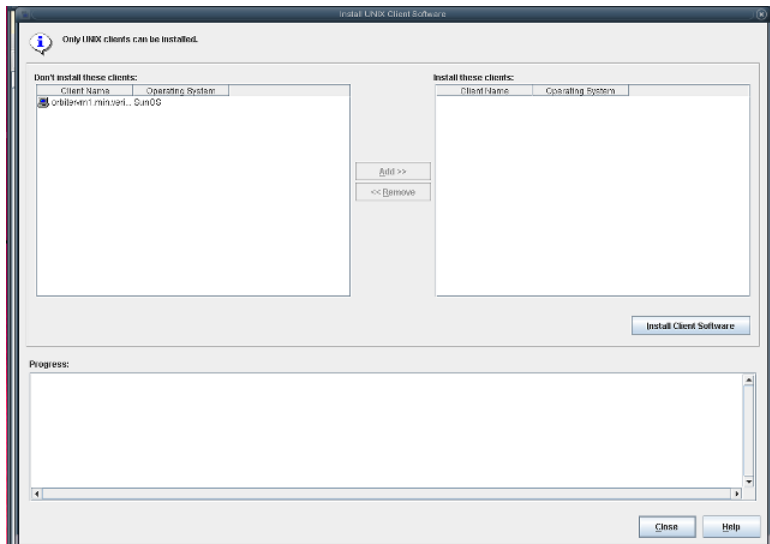
- 1 Start the NetBackup Administration Console.
- 2 On the **Login** dialog box, provide the name of the NetBackup server that contains the policy configuration with the clients.

You can install the client software only from the NetBackup server that you specify in the **Login** dialog box when you start the interface. The clients must be defined in a policy on this NetBackup server.
- 3 In the **NetBackup Administration Console** window, click on the **NetBackup Management** icon to show the available options.
- 4 In the left pane, click **Policies**.

5 In the **All Policies** pane, select the master server.



6 Click **Actions > Install UNIX Client Software**.



- 7 In the **Don't install these clients** list, select the clients you want to install and click **Add >>**.

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

- 8 To start the installation, click **Install Client Software**.

You cannot stop the installation after it has started.

Client software installation can take a minute or more per client. NetBackup writes messages in the **Progress** field as the installation proceeds.

During installation, NetBackup copies client software from `/usr/opensv/netbackup/client` on the server to `/usr/opensv` on the client.

If the installation fails on a client, NetBackup notifies you but keeps the client in the policy.

- 9 After the installation is complete, click **Close**.

Installing client software with the ftp method

Before you perform this procedure, read the following guidelines:

Access to clients	You must have a login ID and password that you can use to access the clients through FTP.
Client software location	If you want to install client software to a location other than the default, you must first create and link the desired directory. Create the directory where you want the software to reside, and then create <code>/usr/opensv</code> as a link to that directory.
Backup policies	Make sure that the clients are assigned to a backup policy.
Macintosh OS X	<ul style="list-style-type: none">■ By default, this operating system version does not enable the FTP daemon (<code>ftpd</code>), which is required. In the shared pane of the System Preferences application, select Allow FTP access to enable <code>ftpd</code>.■ If you have a firewall that is enabled, you must enable FTP access. In the System Preferences shared pane under Firewall, select FTP Access to allow FTP connections.

To install client software from a UNIX master server to UNIX clients with the ftp method

- 1 To move the client software from the server to the `/tmp` directory on the client, run the `install_client_files` script on the NetBackup server.

Use one of the following commands:

- To move software to one client at a time, enter the following command:
`/usr/openv/netbackup/bin/install_client_files ftp client user`

The *client* is the host name of the client.

The *user* is the login ID that FTP requires on the client.

- To move software to all clients at once:

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

The *ALL* option specifies that you want to install all clients that are configured in any backup policy on the server.

The *user* is the login ID required by FTP on the client.

If you have not set up a `.netrc` file, the `install_client_files` script prompts you for a password for each client.

- 2 After the script runs, the root user on each client computer must run the following script:

```
sh /tmp/bp.<pid>/client_config
```

The *pid* is the process ID. The `client_config` script installs the binaries.

Installing client software with the ssh method

Before you perform this procedure, read the following guidelines:

SSH daemon (<code>sshd</code>)	To use the ssh method, the UNIX client must have <code>sshd</code> enabled and configured to allow root user logins.
Client software location	If you want to install client software to a location other than the default, you must first create and link the desired directory. Create the directory where you want the client software to reside, and then create <code>/usr/openv</code> as a link to that directory.
Backup policies	Make sure that the clients are assigned to a backup policy.
Macintosh OS X	<ul style="list-style-type: none"> ■ By default, this operating system version does not enable <code>sshd</code>. You must first enable this daemon to perform the following procedure successfully. In the System Preferences shared pane, select Remote Login to enable <code>sshd</code>. ■ If you have a firewall that is enabled, you must enable SSH connections. In the System Preferences shared pane under Firewall, select Remote Login - SSH to allow SSH connections.

To install client software from a UNIX master server to UNIX clients with the `ssh` method

- ◆ On the NetBackup server, run the `install_client_files` script.

Use one of the following commands:

- To move software to only one client at a time:

```
/usr/opensv/netbackup/bin/install_client_files ssh client
```

The `client` is the host name of the client.

- To move software to all clients at once:

```
/usr/opensv/netbackup/bin/install_client_files ssh ALL
```

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

Installing client software with the `sftp` method

Before you perform this procedure, read the following guidelines:

SSH daemon (<code>sshd</code>)	To use this method, the UNIX client must have <code>sshd</code> enabled and configured to allow root or non-root user logins.
Client file location	If you want to install client software to a location other than the default, you must first create and link the desired directory. Create the directory where you want the software to reside, and then create <code>/usr/opensv</code> as a link to that directory.
Backup policies	Make sure that the clients are assigned to a backup policy.
Macintosh OS X	<ul style="list-style-type: none">■ By default, these operating system versions do not enable <code>ssh</code>. You must first enable this daemon to perform the following procedure successfully. In the System Preferences shared pane, select Remote Login to enable <code>sshd</code>.■ If you have a firewall that is enabled, you must enable SSH connections. In the System Preferences shared pane under Firewall, select Remote Login - SSH to allow SSH connections.

To install client software from a UNIX master server to UNIX clients with the `sftp` method

- 1 To move the client software from the server to the `/tmp` directory on the client, run the `install_client_files` script on the NetBackup server.

Use one of the following commands:

- To move software to one client at a time:

```
/usr/opensv/netbackup/bin/install_client_files sftp client user
```

The *client* is the host name of the client.

The *user* is the login ID that SSH requires on the client.

- To move software to all clients at once:

```
/usr/opensv/netbackup/bin/install_client_files sftp ALL user
```

The *ALL* option specifies that you want to install all clients that are configured in any backup policy on the server.

The *user* is the login ID required by FTP on the client.

- 2 After the script runs, the root user on each client computer must run the following script:

```
sh /tmp/bp.<pid>/client_config
```

The *pid* is the process ID. The *client_config* script installs the binaries.

Adding a UNIX client after initial server installation

You may want to add UNIX clients after the server installation if you forgot to select one during the installation. You may also add a new UNIX client type to your backup environment.

To install client software later, you must first install the NetBackup client software onto the NetBackup server.

To add UNIX client types to servers after initial installation

- 1 Use one of the following methods to start the installation script:

DVD

- Insert the NetBackup UNIX Clients DVD into the drive.
See [“About the NetBackup media kit”](#) on page 17.
- If necessary, mount the DVD.
- Enter the following command:

```
cd_directory/install
```

The *cd_directory* is the path to the directory where you can access the DVD.

ESD images (downloaded files)

- Navigate to the location where the installation images reside.
- Enter the following command:

```
./install
```

- 2 When the following message appears, press **Enter** to continue:

```
Installing NetBackup Client software.  
Do you wish to continue? (y/n) [y]
```

The client binaries represent the operating system versions where the binaries were compiled. The binaries typically function perfectly on later versions of the operating system. For example, HP PA-RISC 11.11 binaries also are used on the HP PA-RISC 11.23 level of the operating system. The installation procedure attempts to load the appropriate binaries for your system. If the script does not recognize the local operating system, it presents choices.

- 3 Select the client type that you want to load and follow the prompts to install that client type. Repeat as necessary until all of the client types you want are loaded.

Make sure that you load the software for all of the UNIX client types that you intend to install remotely from the server.

- 4 After the installation is complete, unmount the DVD.
- 5 Install the NetBackup client software on the clients you specified.

See [“About remote installation methods for UNIX clients”](#) on page 119.

Removing NetBackup client software

This chapter includes the following topics:

- [About NetBackup software removal on UNIX clients](#)
- [Removing NetBackup Windows client software](#)

About NetBackup software removal on UNIX clients

Use the following guidelines when you remove NetBackup from UNIX clients:

When you remove NetBackup client software, PBX is not removed. You must remove PBX manually. The client software removal procedure in this document includes a step that describes how to perform this task.

Warning: Do not remove PBX if your client uses other Symantec software products that require PBX to run.

Removing NetBackup from UNIX clients

Use the following procedure to remove all NetBackup client software components from a UNIX client.

To remove NetBackup software from a UNIX client

- 1 Log in to the client system as the root user.
- 2 Stop the NetBackup daemons by entering the following command:

```
/usr/opensv/netbackup/bin/bp.kill_all
```

- 3 For the clients that support the PureDisk agent, remove all PureDisk files with the following command:

```
/opt/pdde/pddeuninstall.sh -forceclean
```

- 4 For the clients that support the NetBackup-Java Display Console, remove the console with the appropriate command as follows:

AIX	<code>installp -u SYMCnbjava</code>
HP-UX	<code>swremove SYMCnbjava</code>
Linux	<code>rpm -e SYMCnbjava</code>
Solaris	<code>pkgrm SYMCnbjava</code>

- 5 For the clients that support the NetBackup Java Runtime Environment, remove the console with the appropriate command as follows:

AIX	<code>installp -u SYMCnbjre</code>
HP-UX	<code>swremove SYMCnbjre</code>
Linux	<code>rpm -e SYMCnbjre</code>
Solaris	<code>pkgrm SYMCnbjre</code>

- 6 Remove the NetBackup client by using the appropriate commands as follows:

For native package clients:	■ AIX
	<code>installp -u SYMCnbclt</code>
	■ HP-UX
	<code>swremove SYMCnbclt</code>
	■ Linux
<code>rpm -e SYMCnbclt</code>	
■ Solaris	
<code>pkgrm SYMCnbclt</code>	

For non-native
 package clients:

Navigate to the `/usr/opensv` directory.

- If `/usr/opensv` is a physical directory, run the following command:

```
rm -rf /usr/opensv
```

- If `/usr/opensv` is a link, run the following commands:

```
cd /usr/opensv
```

```
pwd
```

```
ls
```

Warning: Make sure that you are at the proper location and verify that the subdirectories are what you would expect them to be before continuing. You do not want to remove the wrong directories. For this reason, the first commands verify your current location and the files in that directory, before you remove the files.

```
rm -rf *
```

```
cd /
```

```
rm -f /usr/opensv
```

Warning: The `rm -f /usr/opensv` command also removes any add-on products that are installed on this computer.

7 If PBX is supported and installed on the client, you can remove it.

Do not remove PBX if your client uses other Symantec software products that require PBX to run.

To remove PBX, enter the appropriate platform commands:

AIX	<code>installp -u VRTSpbx</code>
Debian	<code>/opt/VRTSpbx/bin/vxpbx_exchanged stop</code> <code>rm -rf /opt/VRTSpbx</code> <code>rm -rf /etc/vx/VxICS</code>
FreeBSD	<code>pkg_delete VRTSpbx</code>
HP-UX	<code>swremove VRTSpbx</code>
Linux	<code>rpm -e VRTSpbx</code>
Macintosh	<code>/opt/VRTSpbx/bin/vxpbx_exchanged stop</code> <code>rm -r /Library/Receipts/VRTSpbxApp.pkg</code> <code>rm -r /opt/VRTSpbx</code> <code>rm -r /etc/vx/VxICS</code> <code>rm -r /usr/share/man/man1/pbxcfg.1</code> <code>rm -r /Library/StartupItems/vxpbx_exchanged</code>
Solaris	<code>pkgrm VRTSpbx</code>

8 For the NetBackup-Java capable clients that run the NetBackup Administration Console for UNIX, remove the NetBackup-Java state data, as follows:

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

Warning: There should be no space between the slash (/) and the period (.) of /.nbjava. If you add a space between these characters, all files on this computer are removed.

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

The `$HOME/.nbjava` and `$HOME/.java` directories contain application state information (such as table column order and size). This information is saved when the user exits NetBackup-Java applications. When you remove NetBackup, the process removes this directory only for the root user.

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

- 10 If you enabled NetBackup Access Control, NetBackup created new files on the clients and the servers that can be divided into the following categories:
 - Individual user files
Individual user cache files exist in their home directories (for example, in `$HOME/.vxss`). Inform those users that they can remove the `$HOME/.vxss` directory.
 - NetBackup application temporary files
NetBackup temporary files are removed with NetBackup.

Removing NetBackup Windows client software

Use the following procedure to remove NetBackup Windows client software.

To remove NetBackup Windows client software

- 1 If it is open, close the NetBackup Backup, Archive, and Restore interface.
- 2 Open the Windows **Control Panel** (select **Start > Settings > Control Panel**).
- 3 Select **Add/Remove Programs**.
- 4 Select **Symantec NetBackup Client**.
- 5 Click **Remove**.

Configuring NetBackup servers

This chapter includes the following topics:

- [About NetBackup configuration](#)

About NetBackup configuration

After all server software is installed, you are ready to configure NetBackup to work with the robotic and the storage devices in your environment. Remember, these devices must already be configured and recognized by the operating system before you can configure NetBackup.

See [“About storage device configuration”](#) on page 28.

Use the following guidelines when you configure NetBackup:

NetBackup Enterprise servers

The procedures for configuring master and media servers are very similar. However, Symantec recommends that you configure all server information such as storage devices and volumes from the master server. Following this order helps ensure that the master servers properly administer the media servers.

Warning: Communication problems between the master server and the media server do not prevent you from running the configuration wizards. Therefore, do not run the wizards on the media server until the problems are corrected. If you run any of the wizards when a communication problem exists, the master server cannot recognize the information that you enter. You must first correct the problem. After you correct the problem, run the configuration wizards from the master server.

Clustered environments

- Configure devices on every node in the cluster.
- Start by configuring all storage devices from the active node so that they work with NetBackup.
- For a NetBackup failover server, 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.
- Unless otherwise noted, configure NetBackup to use the virtual host names of master servers and media servers in the cluster.

For complete information on to how to configure an add-on product to fail over, see the *NetBackup Clustered Master Server Administrator's Guide*.

For initial NetBackup configuration, Symantec recommends that you launch the NetBackup Administration Console and click the **Getting Started** icon. A series of wizards guide you through the following configuration procedures:

- **Configure Storage Devices**
See [“About the Device Configuration Wizard”](#) on page 136.
- **Configure Volumes**
See [“About the Volume Configuration Wizard”](#) on page 138.
- **Configure the Catalog Backup**
See [“About the Catalog Backup Wizard”](#) on page 139.
- **Create a Backup Policy**
See [“About the Backup Policy Configuration Wizard”](#) on page 140.

If NetBackup is already configured and you want to change a specific area, click the appropriate wizard on the NetBackup Administration Console.

For complete information on NetBackup wizards and how to configure NetBackup, see the *NetBackup Administration Guide*.

See “[About storage device configuration](#)” on page 28.

Starting the NetBackup Administration Console

Use the following procedures to open the NetBackup Administration Console to configure NetBackup. The Getting Started wizard guides you through the primary configuration steps to make NetBackup function.

Note: Other wizards are available from the initial NetBackup Administration Console window that are not part of the Getting Started wizard. For example, you can configure disk pools or create a snapshot backup policy. See the *NetBackup Administrator's Guide, Volume I* for complete information about all NetBackup wizards.

On Windows systems, if you clicked the checkbox **Launch Administration Console** that appears at the end of NetBackup installation, you can skip this procedure.

To start the NetBackup Administration Console on Windows

- 1 Log on to the NetBackup server as the Administrator.
- 2 Click **Start > Programs > Symantec NetBackup > NetBackup Administration Console**.
- 3 To begin configuration, on the Administration Console, click **Getting Started**. The **Getting Started** screen appears and prompts you to begin the **Device Configuration** wizard.

Note: If you still need to configure devices to work with the operating system, close the wizard. You must first configure those devices as specified by the device and the operating system vendors.

To start the NetBackup Administration Console on UNIX

- 1 Log in to the NetBackup server as root.
For clustered environments, log in to the active node as root.
If you need to run the user interface on a computer other than the NetBackup server, log on to that computer.
On UNIX systems, log in as root.
- 2 Enter the following command:

```
/usr/opensv/netbackup/bin/jnbSA &
```
- 3 Enter the password for root.
For clustered environments, when you log in to the NetBackup Administration Console, specify the virtual host name in the **Host** field.
- 4 Click **Login**.
- 5 To begin configuration, on the Administration Console, click **Getting Started**.
- 6 On the initial **Getting Started Wizard** screen, review the content and click **Next**.
The following screen prompts you to **Configure Storage Devices**.

Note: If you still need to configure devices to work with the operating system, close the wizard. You must first configure those devices as specified by the device and the operating system vendors.

About the Device Configuration Wizard

Before you can run backups, you must define your storage devices for NetBackup. This wizard guides you through this process. However, you must be certain that you have configured your storage devices correctly for your operating system. NetBackup cannot function reliably unless devices are installed and configured correctly.

See “[About storage device configuration](#)” on page 28.

For clustered environments, begin configuring all storage devices from the active node. For a NetBackup failover server, Symantec recommends that you attach all of the devices to every node on which NetBackup is installed.

For complete instructions, refer to the *NetBackup Clustered Master Server Administrator's Guide*.

This wizard takes you through the following processes:

- Scans the hosts for backup devices
- Verifies the devices that were automatically detected
- Verifies and corrects the drive configuration
- Updates the device configuration

The wizard presents the following information when you configure devices:

Device configuration

- When the wizard displays the **Device Hosts** screen, you must specify the hosts on which to auto-discover and configure devices (NetBackup Enterprise servers only).
- When the wizard displays the **Backup Devices** screen, confirm that the list of devices is complete and accurate. If a known backup device does not appear in this list, take the following action:
 - Verify that the backup device is physically attached to the host.
 - Verify that all installation procedures specified by the device and by the operating system vendor have been performed successfully.
 - Verify that all drives correspond to the proper device. If you need to move a drive, select the drive and drag it to the correct location.
- For clusters, ensure that you perform storage device configuration on each node. Begin on the active node, then move the NetBackup active node to another node and perform the storage device configuration on that node. Repeat for each node of the cluster on which NetBackup runs.

Note: By default, robotic daemons and NetBackup add-on products do not cause NetBackup to failover if they fail. You can configure robotic devices and NetBackup add-on products to fail over NetBackup if the robot or the add-on product fails. Before you configure NetBackup to failover, robots must be configured and recognized by the operating system. For complete details about fail over configuration, refer to the *NetBackup Clustered Master Server Administrator's Guide*.

Defining storage units

- You define storage units from the **Configure Storage Units** screen. If your system does not have a tape device, you can store data on a disk by defining disk storage units.
- When you enter a path for a storage unit, the following rules apply:
 - Use the correct path separators (forward slash (/) for UNIX and backward slash (\) for Windows).
 - 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 (.)

See [“About the Volume Configuration Wizard”](#) on page 138.

About the Volume Configuration Wizard

After you have configured your storage devices, the Getting Started Wizard starts the Volume Configuration Wizard. However, if you only have disk storage capability, NetBackup skips this wizard.

This wizard lets you initiate an inventory of each configured robot. NetBackup automatically updates the volume database if it finds new robotic media during the inventory. In addition, you can define new volumes for use in stand-alone drives.

For complete information about volumes or volume configuration for stand-alone drives, refer to the *NetBackup Administrator's Guide, Volume I*.

Note: For clustered environments, configure volumes from the active node.

This wizard lets you do the following tasks:

- Select a device for volume configuration
- Perform an inventory of the robot
- Create new volumes
- Create new volume groups

The wizard presents the following information when you configure volumes and perform inventory:

- Robot or device inventory
- NetBackup conducts an inventory of the robot or the device that you selected. To view the results after the inventory has completed, see the **Results:** field.
 - After the device inventory has completed, the wizard prompts you to identify which device slots contain cleaning media.
If you upgraded NetBackup and have pre-existing barcode rules, the barcode reader automatically detects the designated slots for the cleaning media. If you do not designate cleaning slots, NetBackup considers all media (including cleaning media) as typical media and tries to overwrite it.
 - After the inventory has completed, you are prompted to identify which device slots contain cleaning media.
If you identify one or more slots as cleaning media in the **Identify Cleaning Media** screen, you see the **Robot Inventory (Cleaning Media)** screen. This screen displays the results after the software updates the EMM database. If you do not designate cleaning media, NetBackup considers all media to be typical media (including cleaning media) and tries to overwrite it.
- Standalone drives
- Specify the number of volumes for the device.
 - The wizard does not let you configure cleaning tapes for standalone drives.
- Multiple drive types
- When you specify multiple drive types, the following are true:
- Media that is written by one robot drive may not work in any other drive. If this situation occurs, NetBackup considers the robot to have more than one type of drive.
 - If the robot has more than one type of drive, the wizard cannot inventory the robot.

See [“About the Catalog Backup Wizard”](#) on page 139.

About the Catalog Backup Wizard

The NetBackup catalog contains information about your configuration and the locations of backed up files and directories. If a disk fails and your catalog is lost, a catalog backup makes it easy to restore your data and resume your backup schedule.

Therefore, you must configure a catalog backup policy before any data gets backed up.

This wizard lets you create a policy for an online, hot catalog backup. Online, hot catalog backups can back up the catalog while normal client backups are in progress.

A catalog backup policy lets you specify the following information:

- The destinations for the catalog backup
A backup destination can be any configured storage device. For additional disaster recovery protection, you can specify a second location for your catalog backup.

Note: Although NetBackup supports catalog backup to disk, Symantec recommends that you back up the catalog to removable media that gets stored offsite.

- When the catalog backup occurs
- The location of the disaster recovery file that is needed to recover from the catalog backup

Use the following guidelines to configure a catalog backup:

- Configure a catalog backup policy before any other files or data are backed up.
- For clustered systems, configure the catalog backup policy from the active node.

For complete details about catalog backups, see the chapter "Protecting the NetBackup catalog" in the *NetBackup Administrator's Guide, Volume I*.

For instructions on how to configure a catalog backup in clustered environments, see the *NetBackup Clustered Master Server Administrator's Guide*.

About the Backup Policy Configuration Wizard

This wizard lets you define a backup policy for a group of one or more clients. For clustered environments, configure the policy from the active node.

The wizard lets you specify the following:

- Policy names and types
- Clients
- Files and directories to back up
- Backup types
- Backup rotations

■ Starting times of backups

The wizard prompts you to choose the type of backup that you want a policy to perform.

[Table 8-1](#) describes the available backup types.

Table 8-1 Backup type descriptions

Backup type	Description
Full backup	Backs up all files that are specified in the file list.
Incremental backup	Backs up all the changed files that are specified in the file list.
Differential backup	Also referred to as a Differential incremental backup. Backs up the files that have changed since the last successful incremental or full backup. All files are backed up if no previous backup has been done.
Cumulative backup	Also referred to as a Cumulative incremental backup . Only the files that changed since the last full backup that was successful are backed up. All files are backed up if no previous backup has been done.
User backup	Initiated manually by a user to back up specific files.

Use the following guidelines when you create backup policies:

- The list that appears on the **Client List** screen of the Backup Policy Wizard is a list of clients that are backed up. You can add, change, or delete clients from the list.
- You can select how often you want a backup policy to run for full or incremental backups. In addition, you can select the retention period for the backups.

After you have completed the Backup Policy Wizard , you are asked if you want to perform an installation verification test. To do this test, click the **Activity Monitor** in the left pane of the NetBackup Administration Console. You can now monitor the progress of the backup job.

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